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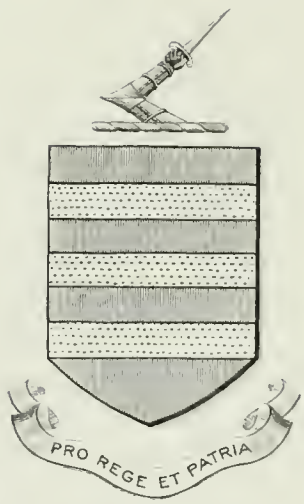


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# MEDICAL RECORD

*A Weekly Journal of Medicine and Surgery*

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## Original Articles.

### MENTAL TESTS.*

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By intelligence or mental ability we mean the effective activities of the mind. It is ordinarily tested in the process of education by the school grade; later in life by the efficiency of the person's career. It implies a retentive memory, readiness to recall, an easy play of associations formed by past experiences, the ability to combine the material of the mind into a coherent and effective whole, *i.e.* to initiate, complete, imagine, or invent.

An intelligent mind does not require more than average esthetic feelings, and it may not require the ordinary normal moral feelings though both are present in the highest intelligence.

Mental tests are used to measure all the activities of the mind. Thus we have tests for memory, for attention, perception, and for association. A mental test is not necessarily an intelligence test for a man may have a good memory, quick perceptions, and an inferior intelligence. Intelligence tests include to a degree tests for these special faculties, but at the same time and especially a test for the power of combining and coordinating, as when one interprets a picture or a fable, or completes a fragmentary sentence.

Most mental and intelligence tests are quantitative in character. They show how active and alert the mind is in its working. One form of test, however, especially shows what is the content of the mind, and its tendencies and trends. This is the association test.

Methods of testing intelligence have been in use in psychological laboratories for over twenty-five years. Their employment has gradually extended to the physiological laboratory, to the workers in psychiatry, and to the students of education and child development. The work was first begun in the interest of psychological science almost entirely, and was next and quite early applied to educational problems.

It was at an early stage of the work, about fifteen years ago, that in conjunction with Prof. J. McK. Cattell, I drew up a scheme of mental tests for use in psychiatry. It was prepared in the form of a case-record with illustrative tests for attention, perception, memory, association, etc. This original work, though crude as compared with the tests of to-day, has the merit of being the first, I think, of its kind. At any rate, it interested me in the subject of such tests and I have kept in touch with the progress of the work since that time.

*Read at a meeting of the Practitioners' Society of New York, Nov. 1, 1912.

During the last ten years these tests have developed in three ways. We have first, the elaborate technical tests which belong to the psychological laboratory and which have to do with contributions to the science of psychology and incidentally to educational problems. Second, we have the so-called "association tests" which have been worked out by Jung and those of his school. These tests in connection with psychanalysis bring out the content of the mind and give us some knowledge of subconscious states. Third, we have the so-called "Binet-Simon tests." These last are not so much for the purpose of measuring intelligence as for marking the development of the child's mind.

The plain man who does not know or pretend to be able to know anything about psychology, understands, at least, this: that when a patient is before him he expects to find out whether this patient is listening to him and understands him, whether he remembers well what he is told, and what he has been doing. He expects to find out what sort of thoughts and feelings are in the patient's mind, and whether he expresses himself effectively to the doctor to whom he is talking. These things simply mean that we study the powers of attention and perception, the memory, the power of comprehension and association, so as to understand and carry out things that are told to him; the emotional state and the intellectual equipment. These are the main lines along which mental tests are developed.

I propose briefly to speak of the three groups of tests, giving some details about each and indicating the uses which physicians and educators will find for them in their different fields of activity.

**The Laboratory Tests.**—The laboratory tests have been worked out by a large number of investigators during the last thirty years. In 1898 their application in mental diseases was presented in an elaborate textbook on the subject by Prof. R. Sommer, and later much work was done with them by Kraepelin and others. Their application in the psychological laboratory has been going on continuously in many places and by many observers.

A compilation of these tests together with original work of his own, has been made by Dr. Guy N. Whipple, in a book entitled "Manual of Mental and Physical Tests," 1910. Leaving out the preliminary tests which have to do with the physical, motor, and sensory capacities, his tests are grouped under seven headings: (1) Attention and perception; (2) Description and report; (3) Association, learning, and memory; (4) Suggestibility; (5) Imagination and invention; (6) Intellectual equipment; (7) Developmental tests.

This classification is somewhat arbitrary as every classification must be. The series of tests which I have arranged is made up from those of our original record, from Whipple's work and from Ziehen's series of tests, which last include several special tests devised by different psychologists.

These tests may be used by those who wish to investigate the psychic make-up of the patient, whether it be for purposes of studying character, development, or disease. Very often it is necessary, or it may be useful to use only two or three of the tests.

For example, in certain diseases like Korsakoff's psychosis we are especially interested in memory defect.

In hysterical and psychasthenic conditions, the association test is especially used.

In determining whether the patient is developing some form of dementia, or in testing his general mental capacity, the test for imagination and invention and the test for abstract ideas are useful.

As a basis for all tests a study of the intellectual equipment is indicated.

Ethical and esthetic tests are of importance in studying the character and make-up of children and adults and in determining the presence of mental deterioration.

A simple test for esthetics is used as a routine in studying the development of the child's mind. Any elaborate test is only needed in cases where we wish to discover also the intellectual equipment and emotional and idealistic tendencies of the patient.

In giving tests it is always important to explain carefully to the patient what the object of the test is and what he is expected to do. In some of the tests a stopwatch must be used and the time noted.

The following gives in a tabular form the general character of the mental tests:

| *Mental functions tested.* | *Method.* |
|---|---|
| I. Attention and perception. | Bourdon test. |
| II. Memory: | Personal history. |
| Old impressions, | Repetition of numbers, etc. |
| New impressions, | Reproduction of picture. |
| Rote memory, | Repetition of a story. |
| Logical memory. | Pair-words. |
| | Marie test. |
| III. Association, controlled and free. | Replying to stimulus words. |
| | Analysis. |
| | Dreams. |
| IV. Intelligence: | |
| Imagination, | Ebbinghaus test. |
| Invention, | Masselon test. |
| Combining, | Proverbs, fables. |
| Orientation, | Arithmetical test. |
| Ideation, | |
| Judgment. | Specification of the class to which an individual belongs. |
| V. Abstract Ideas. | Generalization. |
| | Definition. |
| | Differentiation, etc. |
| VI. Intellectual Equipment. | Vocabulary. |
| | School-knowledge. |
| | Range of information. |
| VII. Emotional State. | Effect of seeing picture. |
| | Hearing a story. |
| VIII. Ethical. | Pictures, questions. |
| IX. Esthetic. | Pictures, questions. |

I. *Attention and Perception.*—Go over the whole and strike out one of the letters, *e.g.* the letter D. Measure time; note mistakes. It should be done in 30 to 40 seconds.

OYKFIUDBHTAGDAACDIXAMRPAGQZTAACVAOWLYX
WABBTHJJANEEFAAMEAACBSVSKALLPHANRNPKAZF
YRQAQEAXJUDFOIMWZSAUCGVAOABMAYDYAAZJDAL
JACINEVBGAOFHARPVEJCTQZAPJLEIQWNAHRBUIAS
SNZMWAAAWHACAXHXQAXTDPUTYGSKGRKVLGKIM
FUOFAAKYFGTMBLYZIJAAVAUAACXDTVDACJSIUFMO
TXWAMQEAKHAOPXZWCAIRBRZNSOQAQLMDGUSGB
AKNAAPLPAAAHYOAEKLNVFARJAEHNPWIBAYAQRK
UPDSHAAQGGHTAMZAQGMTPNURQNX1JEOWYCREJD
UOLJCCAKSZAUAFERFAWAFZAWXBAAAVHAMBATAD
KVSTVNAPLILAOXYSJUOVYIVPAAPSDNLKRQAAOJLE
GAAQYEMPAZNTIBXGAIMRUSAWZAZWXAMXBDXAJZ
ECNABAHGDVSVFTCLAYKUKCWAFRWHTQYAFAAAOH

II. *Memory.*—In testing for memory, we test for old impressions and new impressions. The test for new impressions is termed "immediate memory." It is these two forms of memory or revival which are most important for physicians and psychologists to study.

We also make tests for "rote memory," that is to say, for series of discrete and unrelated impressions, such as letters, digits, and unrelated words; and tests for logical memory in which the material is presented in a logically connected whole; so that the association helps one in revival of the words desired. In testing for old impressions we generally test simply for logical or associative memory. In testing for new impressions we usually test for rote memory.

The tests of memory almost always involve also a testing for association, and the tests for association, learning, and memory are grouped together by Whipple.

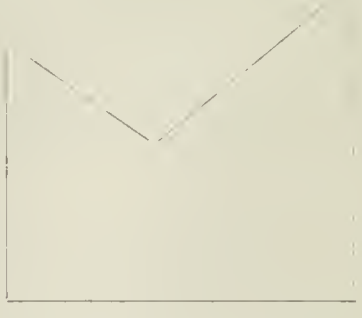
The following tests are mainly taken from Ziehen:

(1) Old Impressions: These are tested by questioning the patient as to his personal and family history, school knowledge, etc. (Logical memory).

(2) New Impressions: (*a*) Repetition of numbers and letters; for instance, 1869, 79581, 834596, 41927561. An ordinary individual can repeat without difficulty six numbers; the *Korsakoffs* usually can retain three numbers; paretics repeat four numbers. Inability to repeat three numbers usually indicates a grave intellectual defect or disassociation. Name the numbers in an even voice without rhythm or accent. Test visual memory by showing the numbers printed on a card. (Rote memory).

(*b*) Repetition of an example, which is given at the beginning of the seance.

(*c*) Reproduction of objects, colors, or pictures. The following figure is usually exposed for fifteen seconds; later covered for fifteen seconds and then patient is asked to reproduce it.



(*d*) Reading and relating of a short story which has definite point, *e.g.*: The steamship Gate City of the Ocean Steamship Line, bound from Savannah to Boston, went on the outer bar three miles east of the Life Saving Station at 9 o'clock to-night. The Gate City had on board forty-nine persons, three of whom were women. There was a dense fog at the time, but the ship was finally saved.

(*e*) Pair-words, which usually have some relation to each other, are given to the patient. After a pause, a member of the pair words is named and the patient is requested to reproduce the corresponding one.

Garden—large.
House—small.
House—yellow.

Picture—nice.
Dress—white.

A very good test for new impressions, rote memory, attention, and association is one used by Mr. Ellis of the New York Neurological Institute. The patient is given a pad of paper and pencil and then ten numbers of six figures each are given to him verbally, to write down and add up. See association tests.

III. *Association Tests.*—These tests when fully carried out involve all the machinery of the modern methods of association tests coupled with psychanalysis. They involve a large amount of time and mean an almost entirely specialized piece of work. There are two forms of tests, one in which the association is controlled by giving the subject definite test words; the other, a free or running association, in which the associations are started but not guided. Both forms of tests are used in psychanalysis, and in psychotherapeutics. They are not used as intelligence tests, but as a means of learning the content of the mind. They show "whether a subject has a tendency to take things with peculiarly personal reference or exaggerated self-consciousness, or to diagnose disturbing trends of thought." (Wells).

Briefly the test is as follows:

A list of 70 or 100 words is made out; the experimenter with a stopwatch gives out these words and the subject answers as quickly as possible some word which comes to his mind. The word itself named by the subject is written down and the time of the response noted. The average response for a normal individual is about one and one-half seconds. Every now and then, however, there occur more rapid or delayed responses. The delayed responses are more or less definitely connected with some emotional state or complex either conscious or unconscious.

The test is repeated, then the words connected with the delayed responses are brought together and the subject questioned as to their significance and the ideas and emotional states that underlay the retardation are discovered.

There are standard lists of words, but these are much varied for inividual cases, hence I append no full list here.

Ziehen employs the following short list of fifteen words:

| | | | | |
|---|---|---|---|---|
| Forest, | Disease, | Sin, | Sweet, | Run, |
| Red, | Small, | Father, | Poison, | Death, |
| House, | City, | Jealousy, | Wedding, | Fish. |

At the end of the seance the first three are repeated. After twenty-four hours and one week, respectively, the other words are repeated. This makes of it to some extent an intelligence test, as it involves memory and association.

The tests for *controlled association* which may be used as intelligence tests are 1, the part-whole test; 2, the genus-species test; 3, the opposite test.

Give as quickly as possible the name of the whole of which the test word is a part:

1. Part-Whole Test.

| | | | | |
|---|---|---|---|---|
| Door, | Letter, | Button, | Cover, | Engine, |
| Pillow, | Leaf, | Nose, | Page, | Glass, |

2. Genus-Species.

Animal, Trees, etc., etc.

3. Opposites-Test.

| | | | | |
|---|---|---|---|---|
| Bad, | Little, | Sad, | Well, | Peace, |
| Inside, | Soft, | True, | Sorry, | Few, |
| Slow, | Black, | Dislike, | Thick, | Below, |
| Short, | Dark, | Poor, | Full, | Enemy. |

*Free Association Tests.*—The subject is given a pencil and a pad of paper and is told to write as fast as possible as many words as come into his mind in a certain fixed period of time.

In connection with the subject of association or with the tests for association there are certain supplementary tests used. These consist in the addition, multiplication, or subtraction of various sets of figures. The experimenter notes the time and the accuracy with which the work is done. These tests are more especially used for determining the question of fatigue or work capacity of the patient. They are not very useful as tests of intelligence.

The following is an example of material used in a computation test:

957996
869675
326872
847991
959769
347978
978643
989455
878244
687927
798672
888961
977450
397995
489707
890438
673543
546281
911764
902549

These figures are read out to the subject who puts them down and adds them. Note time, accuracy, continuity of attention, motor dexterity. It has been found that speed and accuracy as a rule are in inverse ratio. The better work the less speed.

IV. *Imagination and Invention* (Combinative Activities).—Under this head Whipple gives a number of tests which are placed by Ziehen under the head of combinative activities.

Ebinghaus Test.—Mental ability or intelligence demands not only ready memory, quick and easy association but the ability to combine into a coherent whole independent and seemingly contradictory impressions, says Ebinghaus. Intelligence is a combinative activity. To measure intelligence then, Ebinghaus prepared mutilated prose, by eliding letters, syllables, and phrases. This he considers a real test of intelligence. Whipple places the test under the head of imagination and invention tests. When fully carried out two or three specimens are given of mutilated prose. Time and accuracy are noted. The test needs to be standardized for practical use outside a laboratory. A simple example of the test is the folowing:

Supply missing words or syllables in the following: There was — — merchant — — had — child; — barely laden — then making — — upon —, in — he had — all — wealth, in — hope — making — great — when — news — that — were lost.

This test in a still simpler form was used by Cattell in our Case Record as a test for association.

Word-building Test.—Arrange the letters so as to make 3 words:

A T H
I V W E
O E H S R

Time in seconds.....

Rearrange the words so as to make a sentence:
Winds cold and the north disagreeable are
Time in seconds.....

While word-building is an intelligence test, it is not a very good one. About all that can be said is that bright persons do it better than stupid ones.

Definition Test.—What is a fork? What is a table? What is a chair? What is a horse? What is a mother?

The definitions are not given in terms of *use* by subjects above the mental age of nine. The tendency to define by use shows retardation or a dementing tendency in adults.

Masselon Test.—Formation of sentences out of two or more words:

Cat—mouse—cellar.

Hunter—fix—woods.

Children of the age of eleven can do this in one minute.

Proverbs and Fables.—The subject is asked to explain the meaning of certain proverbs and fables.

Strike while the iron is hot.

Many cooks spoil the broth.

Do not look a gift horse in the mouth.

Fable of dog in the manger.

Arithmetical Test.

X + 25 equals 40; what is X?
X — 15 equals 50; what is X?
X × 5 equals 45; what is X?
X ÷ 9 equals 7; what is X?

Backward Association.—Enumeration backwards of week days and of months; counting from 20 to 1, etc. Children of the age of eight can do this.

Besides these specific tests, questions may be asked to determine whether the subject shows orientation and grasp on new environment, and whether he can explain the meaning of certain pictures.

V. *Tests for Abstract Ideas.*—Tests of this kind are more particularly of use in determining the degree of mental development and grade of intelligence.

The following are Ziehen's tests. Many of them are in the Binet-Simon list, where Whipple discusses them.

The tests are divided into four parts:

1. Specification and generalization.
2. Definition.
3. Differentiation.
4. Exemplification.

(1*a*) Specification:

To what class of the animal kingdom do the following belong: eagle, ant, goose, chicken, turkey?

Name animals which have wings, bill and lay eggs, etc.

(1*b*) Generalization:

Name different kinds of birds.

Name different kinds of trees.

Name different kinds of governments.

Name different kinds of instruments.

(2) Definition:

What is jealousy?

What is gratitude?

What is hatred?

What is a butterfly?

What is a horse?

(3) Differentiation:

Differentiate between an ox and a horse; child —dwarf; bird—butterfly; ladder—steps; lie —mistake; avarice—economy; box—basket.

(4) Exemplification:

What is worse, lie or mistake, and why?

Give an example of gratitude? Jealousy? Avarice? Envy?

The lack of ability to do at least three-fifths of these tests would put one below the mental age of fifteen making proper allowances for educational disadvantages.

VI. *Intellectual Equipment.*—The psychological laboratories use very elaborate tests for determining the vocabulary (Kirkpatrick test) and range of information (Whipple test).

In ordinary cases all that we need are some facts regarding the patient's school knowledge.

School Knowledge:

1. Name some of the presidents of the United States.
2. Give the name of your state and its capital.
3. Tell me the name of some of the high mountain ranges in the United States.
4. What is the largest river in the country?
5. Can you tell me what an island is?
6. Can you tell me what month in the year has the fewest number of days?
7. Tell me the names of the months.
8. Tell me the names of the colors in the rainbow, or spectrum, as it is called.

VII. *Ethical and Esthetic Tests.*—No very definitive or absolute tests can be outlined. The ethical reactions have to be determined by direct questions, by knowledge of the patient's life; and perhaps in the case of children and simple minds to reactions to certain pictures and stories. (See Binet-Simon tests.)

The following tests are fairly accurate for educated Americans:

Esthetics, Literary.—A person who has read and not felt touched by the art in any of the following writings, may be considered absolutely deficient in literary esthetics:

Keats—Ode on a Grecian Urn: Opening passages of Endymion.

Shelley—Skylark.

Milton—Passages from Paradise Lost; Lycidas.

Wordsworth—Ode to Immortality; Tintern Abbey.

Pater—Marius, the Epicurean.

Bible—Job, Chap. 98.

Johnson—Rasselas.

Emerson—Behavior.

Balzac—Country Doctor.

The Litany.

Hawthorne—The Custom House.

Shakespeare—Songs; Parts of Merchant of Venice.

Thackeray—On a Lazy Idle Boy; Roundabout Papers.

M. Arnold—Some Minor Poems.

Browning—Dramatic Lyrics.

Esthetics, Musical.—Education and opportunity being the same, the person's musical feeling may be gauged by his real appreciation of first rank musicians; or second rank or the ranks *below.*

| First Class | Second Class | Third Class and Lower. |
|---|---|---|
| Palestrina | Berlioz | |
| Bach | Rubinstein | |
| Haydn | Gounod | |
| Gluck | Mendelssohn | |
| Mozart | Strauss | |
| Beethoven | Offenbach | |
| Schumann | Weber | |
| Schubert | Thomas | |

| First Class | Second Class | Third Class and Lower. |
|---|---|---|
| Fraunz | Bizet | |
| Chopin | Mollecker | |
| Wagner | Sullivan | |
| Brahms | | |

*Results of Laboratory Tests.*—It may be asked now what results of practical value have been obtained from the various elaborate tests of the psychological laboratories. In reply one may say that many important facts have been brought out pertaining to the relative intelligence of the male and female, to mental development, to the power of work, and to questions relating to education, generally.

Thus, Whipple states among other things "that logical memory is twenty-five times as good as rote memory and is better in girls than in boys; that memory power gradually increases up to the time of puberty and is often at its best from the twelfth to fifteenth year."

Association tests show that in association experiments, women select words which indicate things ornamental, individual, and concrete; men, things more remote, instructive, useful, general, and abstract (Jastrow).

The computation tests show that feelings of fatigue are not a measure of mental inability. The disinclination to work does not signify inability to work. The invariable need of vacations has been put in doubt.

The sex differences shown by these tests indicate that in range of information boys and men exceed girls and women; that in reporting and description men are more correct than women; that in word building boys are better than girls; that in vocabulary they are equal, and that in imagination and invention they are equal; in nearly all other tests the female sex is better than the male, namely, in suggestibility, in rote memory and logical memory; in association activity and in computation the difference is not very great. These tests have been made, however, so far as I can learn, mostly upon pupils in schools and colleges.

The question of mental fatigue under all kinds of conditions has been specially studied by means of the laboratory tests.

Some observers find that mental work is done best when interrupted with intervals of rest of two or three hours. It is poor in the evening after a day's labor. School work has been found to be a little better in the middle of the afternoon and not so good at the end of the day, though one experimenter has denied this.

I am not trying to sum up all that laboratory methods have contributed to the practical side of education or psychology; but I am indicating some of the lines upon which results have been formulated.

While the laboratory and the Binet-Simon tests aim to measure the development and powers of the mind, the association and analytic tests aim to find out also what is in the mind. They tell how the mind reacts and why. The methods employed are by controlled association, free association (verbal and mental catharsis), and by dream analysis. The technique is given under the laboratory tests. The whole process may be used as a very intensive form of retrospection, introspection, and re-education. It is when fully carried out a research into and recall of the past conscious life. Naturally this is sometimes dangerous and perhaps often futile.

But the methods may be used with benefit, and without danger in diagnosis. Here in particular the association test without elaborate analysis is employed.

In the last year or two judgment as to the value of test association has been somewhat changed.

In the monograph on association tests by Hunt and Rosanoff, association tests were made upon 1,000 normal persons and a great number of the insane. After some experimenting these investigators gave up the attempt to utilize the retardation time and contented themselves with simply studying the associations themselves.

Dr. Rosanoff, in a personal letter to me, states that "Much evidence was gradually accumulated to show that retardation of responses may be due, even in the same subject at different times, to a great variety of causes. I am not inclined to dispute that among these causes there is occasionally—perhaps frequently—to be found some emotional attuning aroused by the stimulus word; but I do not think the association test in any form could be relied on for trustworthy results in refined psychanalysis. For a psychologist to accept a finding, so omnisignificant as delay of response, for an indication of anything definite is, in my opinion, as much open to criticism as it would be for a chemist to judge by mere gross weight of a lump of iron ore the amount of iron that it contains, or for him to say that the entire weight is due to iron."

However, in association experiments there are many other things than retardation which give characteristics to the subject's responses, and I believe that there is practical value in the use of the test in diagnosis.

Recently a patient was sent to me with apparently a clear-cut history of epilepsy lasting for four years. The description of the symptoms of her psychosis corresponded with those of typical haut mal and petit mal attacks. There was, however, something in the character and mentality of the patient which led me to suspect that it was not a constitutional or degenerative, but an episodic neurosis and perhaps a psychogenic neurosis. In other words, that perhaps the convulsions were functional and due to some morbid mental state accidentally engrafted rather than to a deep-seated degenerative process going on in the cortex.

I therefore sent her to a psychoanalyst, Dr. H. W. Frinck, whose comments are as follows:

"It seems to me that there is not the slightest doubt that the girl has pathological complexes and is decidedly neurotic. The test is typically hysterical and is not at all like the typical test of an epileptic, but this does not prove anything as to the nature of the fits themselves, though it is somewhat suggestive."

"The sadistic or hate complex which she appears to have is the one usually found at the bottom of hysterical epileptoid attacks."

This is an example of the kind of cases in which mental tests will eventually be a solid help. Just now we are feeling our way.

So far as I can learn at present there is only one disease in which the associations and dreams furnish diagnostic evidence and that is dementia præcox, where the associations are almost all internal and the dreams are said to be of peculiar and chaotic character.

I believe it will be found that the association processes develop in the group know as the "hysterical" and "psychasthenic" in a somewhat peculiar

way; but the data cannot yet be used for anything more than confirmation of diagnosis.

A further use of psychanalyses and association tests is claimed by Jung. He states that persons who have themselves analyzed and their associations properly adjusted feel a surer grip upon themselves and will not have any neuroses or psychoses; if they are thus re-educated. This is a field of prophylaxis which certainly is interesting if true.

**Tests of Mental Development—the Binet-Simon Tests.**—About three years ago I asked a good many of my medical and even neurological friends if they had used the Binet tests and only one was familiar with the word.

Within the last three years, however, these tests have jumped into tremendous prominence and have been widely and generally accepted as valuable helps in measuring the development of the growing mind.

I must apologize now for attempting to say anything upon the subject, but the question of retardation is in the air. It is announced, and to a certain extent demonstrated, that a large number of criminals, defectives, and epileptics are not bad, so much as they are backward and that an enormous amount of the evil conduct of to-day is due to retardation rather than to an intelligent pursuit of crime.

We are preparing to sift out more of the retarded from our public schools and to place them under properly qualified teachers. We are planning to have delinquent children and juvenile criminals put through Binet tests and expect to show that their actions are often the result of stupidity and lack of intelligence, and that they should be treated on that basis rather than punished for wilful crime.

The immigrants who are poured upon our shores at the rate of a million a year, show a large percentage of this class. It is to be hoped that this undesirable minority will be sifted out. It has been found that this class of the retarded are prolific; that they intermarry or breed among themselves and produce a new species of constitutionally inferior human beings.

Thus there is a new and prodigious problem before this country in our study and management of this class. It is related closely to the subject of eugenics, which is interesting the public mind most deeply just now.

I have found in, perhaps, not very extensive investigation that what are called the minor psychoses occur to an extent among a retarded class of individuals.

Many years ago one of our eminent and beloved members, now deceased, Dr. Shrady, was discussing with me the subject of writer's cramp. He did an enormous amount of writing himself, refusing generally the aid of a stenographer. I said to him one day, "Aren't you afraid you will have a professional cramp?" He smiled and tapped his head with his finger. "No," he said, "I haven't that kind of a brain." The inference was simply that people with a very good brain did not get such neuroses. This is true.

Professional cramps, however, are not the cases in which I have looked for retardation. Many cases of so-called hysteria, psychasthenia and even of neurasthenia; also of mild recurrent melancholia occur in persons who have not a strong intelligence.

In going over a list of 100 cases of neurasthenic and psychasthenic origin I would estimate that at least 50 per cent. of them were not constitutionally smart.

Taking up the matter in a laboratory way, I have already made further confirmatory tests of psychasthenic cases and applied to them the Binet-Simon scale. Now, according to this scale, if a child tests up to or above the age of twelve, he is normal and does not require any custodial care; he goes out into the world and tries, at least, to make a way for himself. If a woman she may marry. If a man he may undertake an art, a craft, a business, or a profession. These people, perhaps have no moral instability and do not become criminal; but yet, being really retarded, instead of filling the ranks of criminals and the work-house population, they fill the offices of the neurologists with their sufferings and complaints.

The study of retardation, therefore, among the psychoneuroses furnishes a rich field for further investigation.

The Binet-Simon test first appeared in 1905. It was used, and experimented with, some changes made, and the final corrected scale was published in April, 1911.

It is now possible by means of this scale to determine fairly well the mental age of children. There will be much less indefiniteness regarding the terms used indicating the feeble-minded.

Thus, the term "idiot," which is technically restricted to those who cannot talk, corresponds to the mental age of one and two years.

The term "imbecile," which includes persons who understand spoken language and talk with varying degrees of fluency, corresponds to the mental age of three, four, five, six, and seven years.

The moron is one who, in addition to using spoken language, is capable of learning to read and write, and he corresponds to the mental age of eight, nine, ten, and eleven years.

The feeble-minded are persons who include all three groups and correspond then to the mental age of from one to twelve years. A person having the mental age of twelve may be retarded, but is not feeble-minded, and technically the retarded would be persons who have the mental age of twelve to fifteen years and who do not get beyond it.

I would like to add as a comment upon the Binet-Simon tests some criticisms which have been furnished me by Mr. Frederick W. Ellis, psychologist to the New York Neurological Institute.

Mr. Ellis states that "The Binet-Simon tests have been in use at the Clinic of the Neurological Institute for over two years as an auxiliary to the neurological examinations. These tests do not claim to give an estimate of the degree of native power of the mind, but only of the capacity of the mind for acquiring simple knowledge at various degrees of maturity. They do not estimate such special functions of the mind as attention, perception, memory, and power of association, but deal rather with such general capacities as power of interest, good sense in comprehension, useful judgment, capacity to initiate, and adaptability to circumstances. It is on points such as these, and not on general ability, that the recognition of normality of mind must rest whether the estimate is being made in the physician's office, the clinic, the school room, or in the general walks of life."

Mr. Ellis has advised five supplementary tests. These are as follows:

1. The making of as many crosses in a 4½-inch square as can be made in two minutes.

2. The pegging of a 100-hole board in the shortest possible time.

These two tests supplement each other and give valuable information on the power to coordinate and sustain interest.

3. The immediate recall in order of a set of ten familiar objects.

4. The association of these objects in groups according to their common qualities.

5. The interpretation of simple pictures to test the imagination and general comprehension.

When the mental age has been determined by the Binet-Simon scale this further inquiry is made into the functional capacity of the subject, and many facts of differential value between individuals come to light.

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Huey: Backward and Feeble-Minded Children.

## APPENDIX.

### THE BINET-SIMON TESTS ARRANGED IN AGE AND DIAGNOSTIC GROUPS FOR CONVENIENCE IN CONDUCTING EXAMINATIONS, AS FINALLY FORMULATED IN 1911.

#### IDIOTS.

Mental Age 1 and 2 Years.

1. Move lighted match slowly before child's eyes. *Full credit given if eyes follow light for briefest period.*

2. Place a wooden block in child's hand. *Credit given if block is grasped.*

3. Show the wooden block without touching child with it and say, "This is for you, don't you want it to play with?" *Credit given if child takes it.*

4. Offer child a piece of wood and a piece of chocolate of the same size. *Credit given if he eats the chocolate and does not attempt to eat the wood.*

5. Show child a piece of chocolate, then wrap it in paper and present it to him, telling him to eat it. *Credit given if he removes the paper before eating.*

6. Make simple movements, clapping the hands, sitting down, standing up, etc., and tell child to do the same. *Credit given if one intention is accomplished.*

Fig. 1.

#### IMBECILES.

Mental Age 3 Years.

7. Show me your nose. Show me your eyes. Show me your mouth.

8. Listen well and repeat what I say. 4; 3—7; 6—4; 5—8. Pronounce numbers slowly and distinctly with one-half second interval between, one pair at a time. *Full credit given for one exact repetition.*

9. Place Picture 1 before child and ask, "What is that?" or "What do you see there?" Follow this by Pictures 2 and 3. (Figures 1, 2, 3.) *Full credit given if some objects are enumerated.*

Fig. 2.

10. "What is your name?" If first name only is given—"And your other name?"
*Surname required.*

11. "Listen well and repeat what I say: I am cold and hungry." *No errors of any kind allowed.*

Mental Age 4 Years.

12. "Are you a little boy or a little girl?" If necessary—"Are you a little girl?" "Are you a little boy?"

13. Show child a penknife, saying, "What is that? What is it called?" Then show penny and finally key, asking same questions. *Names of three objects required.*

14. "Listen well and repeat what I say. 4—9—2; 3—7—4; 5—8—1." *Full credit given for one exact repetition.*

15. "You see these two lines. Tell me which is the longer." (Figure 12.)

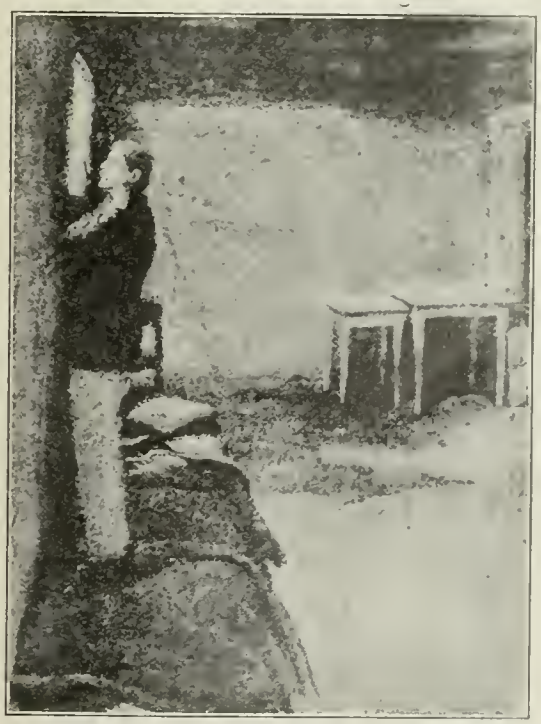

Fig. 3.

Mental Age 5 Years.

16. Place two boxes weighing 3 and 12 grams respectively on the table before the child, leaving a space of 5 or 6 centimeters between them, and say, "You see these two boxes? Tell me which is the heavier." Repeat, using boxes weighing 6 and 15 grams, and repeat again, using first pair.

*If there is still doubt about the child's ability to compare weights, repeat process.*

17. Draw a square 3 to 4 centimeters in diameter with ink and ask the child to copy it, giving him pen and ink to do so.

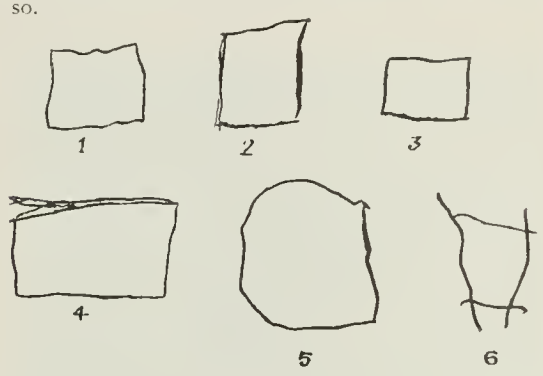


Fig. 4.

18. "Listen well and repeat what I say: My name is Charley. O! the naughty dog."

19. Place four pennies in a row before the child and say, "Do you see these pennies? Count them and tell me how many there are."

*Child is required to point to each with finger, no error allowed.*

20. Place an oblong card on the table before the child and place also, nearer to the child, two triangular cards formed by cutting another card like the first one in two, along a diagonal. Place these two triangular cards in such position that their hypothenuses form a right angle one with the other, then say to the child, "Put these two pieces together so that they will form one card like this," (indicating the oblong card). If the child turns over one triangular piece without noticing it, it is permissible to begin again.

Mental Age 6 Years.

21. "Is it morning now?" "Is it afternoon?"

22. "What is a fork?" "What is a table?" "What is a chair?" "What is a horse?" "What is a mama?"

*If some use of three of the objects is mentioned the response is considered correct.*

23. Draw a diamond figure with ink and ask the child to copy it, giving him pen and ink for the purpose.

24. Place 13 pennies in a row on the table before the child and say, "Count these pennies for me, pointing to each one as you count it."

25. Show pictures of faces (Figure 6). Expose first the upper two alone, next the two middle ones, and last the lower ones, saying each time, "Which is the prettier of these two faces?" *No error allowed.*

Mental Age 7 Years.

26. "Show me your right hand." "Show me your left ear." *No error allowed.*

27. Show pictures as in Test 9, requiring descriptions.

28. "Take this key and put it on that chair, bring me that book lying on the table and open the door." *Repeat these directions distinctly twice.*

29. Place three two cent and three one cent stamps on the table before the child. Make sure that he knows the

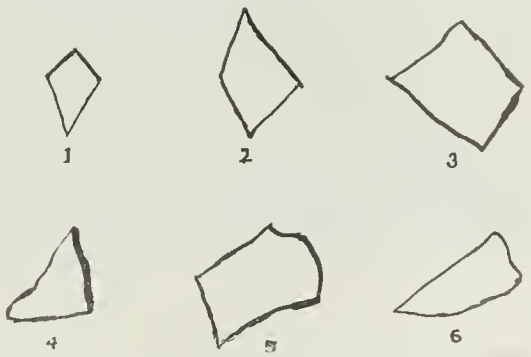


Fig. 5.

2's from the 1's and then ask him to count how much they would all cost.

30. Have four pieces of colored paper, red, blue, yellow, and green. Point to each, asking, "What is this color?" *No error allowed.*

MORONS.

Mental Age 8 Years.

31. (a) "Do you know what paper is?" "Do you know what cardboard is?" "Are they alike?" "In what way are they not alike?"

Fig. 6.

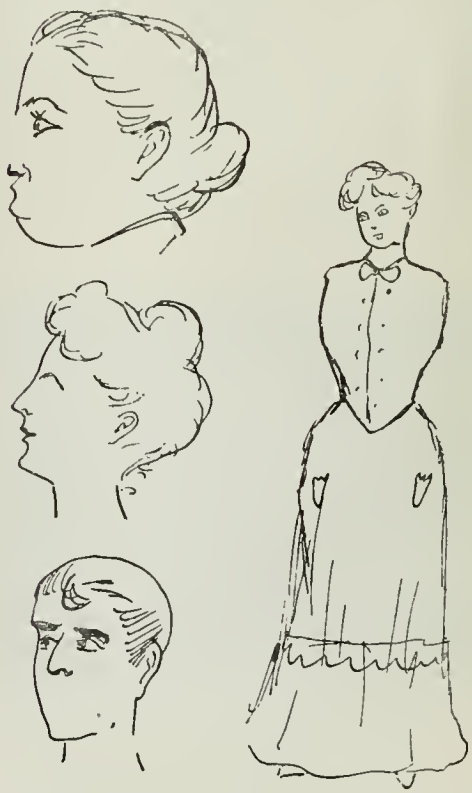

Fig. 7.

(b) "Have you ever seen a fly?" "Have you ever seen a butterfly?" "Are they alike?" "In what way are they not alike?"

(c) "Do you know wood when you see it?" "Do you

know glass when you see it?" "Are they alike?" "In what way are they not alike?" *Two satisfactory answers required.*

32. "I want you to count backward from 20 to 0. Like this—20—19—18." *This must be accomplished in 20 seconds. One error allowed.*

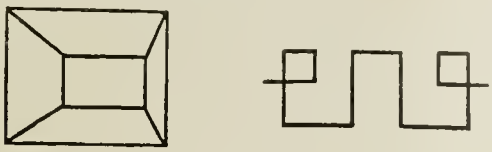

Fig. 8.

33. The four pictures in Figure 7 are shown one at a time and the question asked with each, "What is missing in this picture?" *Three correct replies required.*

34. "What day is to-day? "What date is it?"

35. "Listen well and repeat what I say: 3-8-5-7-1; 9-2-7-3-6; and 5-1-8-3-9." *One group given at a time. One exact response required.*

Mental Age 9 Years.

36. In a pile before the child place the following coins: Ten pennies, two nickels, two dimes, one quarter, one half dollar. Then propose a game of storekeeping, the child to keep the store and use the pile of money to make change, the experimenter to be the customer. Add some articles for sale. Then buy something for four cents. Give the child a quarter and require the change.

37. Test No. 22. Definitions superior to use are required.

For an the
at hour early
we country started.

To asked exercise
my I teacher
correct my

A defends
dog good his
master bravely.

Fig. 9.

38. Show the child successively a penny, a dime, a dollar, a quarter, a nickel, a half dollar, a two dollar bill, a ten dollar bill, a five dollar bill. Ask, "What is this?" with each.

39. Name the months of the year in order. *One error allowed, time 15 seconds.*

40. (a) "If you were going away and missed your train, what would you do?"

(b) "If one of the boys should hit you without meaning to, what would you do about it?"

(c) "If you broke something belonging to some one else, what would you do about it?" *Two good responses required.*

Mental Age 10 Years.

41. Place on the table before the child five boxes weighing 3, 6, 9, 12 and 15 grams respectively. Say to him, "These little boxes all weigh different amounts. Some are heavier and some lighter. I want you to place the heaviest here and by its side the one which is a little less heavy, and then the one a little less heavy and the one still a little less heavy, and finally here the lightest." *Three trials made, the boxes mixed after each. Two successes in three are required.*

42. "I am going to show you two drawings and after you have looked at them I shall take them away and ask

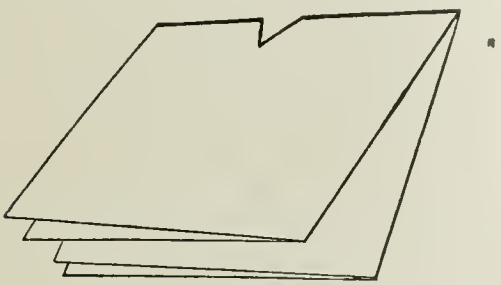

Fig. 10.

you to draw them from memory. You must look at them closely because you will only have them for ten seconds and this is a very short time." (Drawings shown in Figure 8.)

*Full credit is given if the whole of one drawing and half of the other is reproduced exactly.*

43. "I am going to read you some sentences; in each one of them there is something foolish or absurd. You listen carefully and tell me each time what it is that is foolish."

(a) "An unlucky bicycle rider fell on his head and was instantly killed; they took him to the hospital and fear

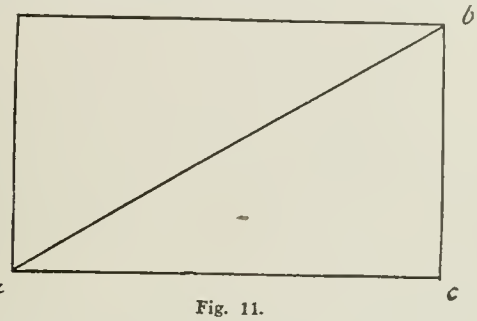


Fig. 11.

that he cannot get well."—After a pause—"What is foolish in that?"

(b) "I have three brothers, Paul, Ernest, and myself"—"What is foolish in that?"

(c) "The body of a young girl cut into 18 pieces was found yesterday. People think that she killed herself."—"What is foolish in that?"

(d) "There was a railroad accident yesterday, but not a serious one, only 48 persons were killed"—"What is foolish in that?"

(e) "A man said: 'If I should ever grow desperate and kill myself I should not use Friday for the purpose because Friday is an unlucky day and might bring me unhappiness.'"—"What is foolish in that?"

*Correct solution of three of the five statements required.*

Fig. 12.

44. (a) "If you were delayed on your way to school, what would you do about it?"

(b) "Before taking part in something very important, what would you do?"

(c) "Why do we more easily pardon a bad act done in anger than a bad one done without anger?"

(d) "If some one should ask your opinion of one whom you did not know very well, what would you say?"

(e) "Why should we judge a person by his acts rather than by his words?"

*Two errors allowed.*

45. Write the words *Paris, fortune, stream.* Show them to the child, reading them to him several times. Then give him pen and ink and tell him to write a sentence containing all three of these words.

Fig. 13.

*Full credit is given for two sentences containing the three words.*

Mental Age 12 Years.

46. "Which is the longer of these two lines?" Figure 12.
"Which is the longer of these two lines?" Figure 13.
"Which is the longer of these two lines?" Figure 14.
"And of these?" Figure 15.
"And of these?" Figure 16.

*Full credit given if suggestion of longer line to the right does not hold in last three pairs. One-half credit if it only partially holds.*

47. Test 45. *Credit given for one sentence containing the three words.*



Fig. 14.

48. "I want you to say just as many words as you can in three minutes. Some boys say as many as two hundred. Now you must try and see how many you can think of."

*Sixty words the minimum accepted.*

49. "What does charity mean?" "What does justice mean?" "What does kindness mean?" *Two correct answers required.*

50. "Find the sentences which these words make. Fix the words in their proper order."

(a) At-country-we-for-started-hour-an-the-early.

(b) Teacher-I-to-my-exercise-asked-my-correct.
(c) Defends-a-his-dog-master-good-bravely.

Mental Age 15 Years.

51. "I am going to say seven numbers. Listen well and repeat them exactly. 4-9-2-6-5-3-7; 9-3-5-1-8-2-6; 2-7-4-9-3-8-5." *One success in three required.*

Fig. 15.

52. "Do you know what the word rhyme means? Two words that rhyme are two words which end in the same sound. Thus *Pumpkin* rhymes with *napkin*. Pump-*kin*, Nap-*kin*. They both end in *kin*. The same way *Mutton* rhymes with *Button*. Mut-*ton* and But-*ton*. They both end in *ton*. Do you understand? Now I am going to give you a word and you try to find the words which rhyme with it. The word is *obey*. Find all the words that rhyme with obey."

*Three words required in one minute.*

53. "Listen carefully and repeat exactly what I say. The other day I saw on the street, a pretty yellow dog. Little Morris has soiled his nice new apron."

54. Tests Nos. 9 and 27. Interpretations required.

55. (a) "A woman was walking through a park in Chicago. Suddenly she stopped, dreadfully frightened. She ran to the nearest policeman and told him she had seen hanging to the limb of a tree a"—after a pause—"A what?"

(b) "My neighbor has just received some singular visits; one after another—a doctor, a lawyer, and a priest called. What is happening at my neighbor's?"

*Full credit given only if both problems are answered satisfactorily.*

Adult.

56. "Here is a paper folded in four, suppose that here (pointing to a small triangle which has been drawn in the middle of that edge which consists of but a single fold), I cut out this little triangle of paper. Now if I unfold the paper how would it look? Draw the paper as it would appear if unfolded and show how and where it would be cut." (Figure 10.)

*Requirements: Two diamonds drawn in line with each other and each in the center of one-half of a square.*

57. An oblong card cut in two along a diagonal is placed

Fig. 16.

in position before the subject. "Look well at the lower piece of card. Suppose that I lift it and place this edge (tracing the edge a-c with the finger) on this edge (a-b of the upper piece). Suppose further that this point (c) is placed just on this point (b). Now I take away the piece, in your imagination, place it as I have described and draw its outline in this position. Commence by following the outline of the first piece." (Figure 11.)

*It is required that a right angle be represented at (b) and that the edge a-c be shorter than the edge a-b.*

58. "What is the difference between laziness and idleness?" "What is the difference between event and advent?" "What is the difference between evolution and revolution?" *Two correct responses required.*

59. "There are three principal differences between a King and a President of a Republic. What are they?"

Required answer: Royalty is hereditary, the tenure of office is for life and its powers are very great; the President is elected, his tenure of office is limited, and his powers are less extensive.

60. "Listen attentively to what I am about to read. After finishing I shall ask you to repeat the sense of the selection: *Many opinions have been given on the value of life. Some call it good, others call it bad. It would be more just to say that it is mediocre, for on the one hand our happiness is never so great as we would have it, and on the other hand our misfortunes are never so great as others would have them. It is this mediocrity of life which makes it just, or rather which prevents it from being radically unjust.*"

*It is required that the thought of this selection be understood.*

53 West Fifty-third Street.

**Pulmonary Tuberculosis and Pregnancy.**—J. Colombet believes that the induction of abortion is not only justifiable in certain cases of pregnancy in tuberculous women, but is also beneficial to the patient. Abortion should be suggested and discussed as an elective procedure in these cases in the early months of gestation.—*Gazette des Hopitaux.*

## SOME EXPERIENCES WITH ANTI-TYPHOID INOCULATION.*

By JOHN W. BRANNAN, M.D.,

NEW YORK.

At the annual meeting of the Association of American Physicians at Atlantic City in May of this year, Dr. Leslie H. Spooner[1] of Boston related his three years' experience with antityphoid inoculation of the nurses in a number of hospitals in Massachusetts. Spooner was led to employ this prophylactic measure because a study of the records of these hospitals had shown a typhoid morbidity rate among the nurses very much in excess of that in the population at large. In the Massachusetts General Hospital it appeared that during the ten years previous to 1909, from two to six of the nurses had come down annually with typhoid fever. Inoculation was, therefore, offered to the members of the training schools and was promptly accepted. As a result the incidence of typhoid has practically ceased among the nurses of the hospitals which have adopted the procedure. The reactions following the inoculations varied in severity but were, as a rule, very slight or moderate in character.

After hearing Dr. Spooner's paper I returned to New York with the intention of having the nurses inoculated in the hospitals with which I am connected, Bellevue, Gouverneur, Harlem, and Fordham. I had not expected to make the inoculations myself, but there seemed at the time to be no one else to do it. I began the work in June, having been first inoculated myself by Dr. Norris, the director of pathological laboratories of the hospital. He used the vaccine of the United States Army, giving as the first dose ½ c.c., containing 500 million dead bacilli, followed at intervals of ten days with a second and a third dose of 1 c.c each. After each inoculation the arm at the point of injection was somewhat painful, tender, and swollen for 36 to 48 hours, the tenderness and swelling extending up and down the arm for a few inches. The general reaction consisted of a fairly severe headache, pain in the back, and some malaise, these symptoms lasting for about 24 or 36 hours. After I had received the second inoculation I proceeded to treat the nurses, using vaccine furnished by the Board of Health, of the same strength as that of the army, and in the course of the summer I inoculated some 200 nurses in the hospitals, and also about 50 members of the house staffs, as well as a few private patients, the latter being all men. The inoculations were all given on the outer surface of the left upper arm at the insertion of the deltoid muscle. The skin was sterilized with the tincture of iodine and the injections were made subcutaneously, not into the muscle. There were very few severe reactions, these being more marked among the men than among the women. Not more than three nurses asked to be relieved from duty for a day, whereas several of the internes were laid up for as much as two days at a time with temperatures ranging as high as 102°, with rapid pulse, nausea, vomiting, severe headache, and pain in the back. One of the doctors had a temperature of 103°, following each of two doses, both of them only ½ c.c. He had also what he described as a "splitting" headache, lasting for 36 hours, accom-

*Read at a meeting of the Practitioners' Society, November 1, 1912.

panied with great prostration and pain in the abdomen. Since the second inoculation (he has not wished to take a third) he declares himself as feeling better than ever before in his life. There had been very little typhoid among the nurses in Bellevue or any of the other hospitals, so that there seemed to be no particular reason for giving the prophylactic inoculation, but I urged that it be done, not only to protect the nurses while on duty in the hospital, but as a general measure of precaution, especially as many of them were about to take their vacations in the country, where they would be exposed to infection from sources beyond their control. No compulsion was exercised, but the nurses were advised that it would be to their advantage to undergo the inoculation. The great majority of the pupil nurses responded quite willingly, but a number of the graduates, who come for short periods of post-graduate instruction and experience, begged to be excused.

As I had heard of the occasional lighting up of latent diseases, such as arthritis, I inquired particularly as to whether anything of the kind occurred in these cases, but so far as I could learn nothing of the sort happened. It may also be of interest to know that the reaction was the same in the cases that had had typhoid as among those who gave no history of the disease. When some of the nurses and some of the doctors suggested that, as they had had typhoid fever, perhaps it was not necessary for them to be inoculated, I replied that not only did that not imply that they could not have the disease again, but also that from a scientific standpoint it would be interesting for them to receive the inoculation as "controls." They were not particularly impressed with my suggestion, which did not seem to appeal to their scientific spirit, but they accepted the treatment just the same.

It is unfortunate that we must use the word "vaccine," as it gives rise to apprehension as well as misapprehension among the nurses. It calls to mind their experience with vaccination against smallpox, and they are much relieved when they learn that the operation consists of a simple hypodermic injection and that the amount of fluid injected is small. In the army, Russell[2] employs the term "typhoid prophylactic," which has at least the advantage of not giving a wrong impression of the procedure itself.

Many of the nurses while undergoing inoculation were in close attendance on cases of typhoid fever in the wards, and Wright's "negative phase" more than once passed through my mind and the fear that I might be exciting an increased susceptibility to the disease. Nothing happened, however, and the nurses are now protected. It is to be hoped, as claimed by Richardson[3] and Spooner, that the danger of the negative phase of immunity said to follow bacterial inoculation has no substantial basis in fact, otherwise we might hesitate to make use of the procedure at a time when it would be of the most service, that is, in the presence of a local epidemic of the disease.

Some of the private patients who came to me for inoculation did so because they were about to go abroad, and feared that they might be infected by food or drink in the course of their travels. This argument is rather amusing when we consider that typhoid fever is much more prevalent with us than it is in European countries. A recent paper by Dr. Allen C. McLaughlin[4] of the United States Public Health and Marine Hospital Service shows that in 1910 in some 25 European cities there were 6.5 deaths in 100,000 population, whereas in this country in an equal number of cities of the same character there were 25 deaths in the same number of population. In other words, there is four times as much typhoid fever in the cities of the United States as in those of Europe, and as we know there is more typhoid in the smaller towns and in the country districts than in the large cities, it would seem to be much more reasonable for those who are about to spend their vacations in the country regions in the United States to be protected by inoculation than for those who are going abroad.

Many persons have wished to know the duration of immunity after inoculation, and I have usually replied "two or three years." Colonel Firth of the British Army, quoted by Major Russell,[5] concludes from his experience in India that immunity begins to diminish in about two and one-half years. In our own army, according to Russell, it is the present practice to revaccinate against both smallpox and typhoid at the beginning of each three-year period of enlistment. Martha Wollstein,[6] in a recent study on "The Duration of Immune Bodies in the Blood after Antityphoid Inoculation," found that these bodies reached their height within two months after the first inoculation and then fell rapidly within the next two months. Of nineteen cases under observation, the blood of fifteen was negative after thirteen months. Although, as Dr. Wollstein states, experience has proved that clinical immunity cannot be determined absolutely by the measure of immune bodies in the blood, she nevertheless believes that reinoculation with typhoid vaccine within a year is indicated when exposure to typhoid fever seems imminent. Russell, while noting the disappearance of agglutinins in little more than a year, adds, however, that they "are present as long after inoculation as after typhoid fever, which gives, as a rule, protection for life."

I should like to know if any one present has had any experience with the employment of sensitized bacilli instead of dead bacilli. In a recent number of the *New York Medical Journal*[7] reference is made to the method of Vesredka, in which 500 to 750 million sensitized living bacilli are given as a first dose, to be followed by a second dose of double the quantity some seven to nine days later. It is stated that there is no general reaction and only an insignificant local reaction following each injection. The paper to which the *Medical Journal* refers is by Alcock,[8] and is published in the *Lancet* of August 24. It is also stated that all authors agree that the vaccination by living microorganisms is more effective than when the dead organisms are used. If this be true, and the reaction is less severe, it would seem to be well for us to make use of this newer method, provided it can be proved to be free from the danger of conveying typhoid fever.

Since the above paper was read the records of the Bellevue Training School for the last twenty years have been carefully gone over by Dr. Robert J. Carlisle, the attending physician to the school, and Miss Brink, the superintendent in immediate charge of the school, and they were agreeably surprised to find that during this long period there had been but eleven cases of typhoid fever among the nurses in the hospital. It would be difficult,

perhaps impossible, to ascertain the number of nurses serving in the hospital during all these years, but it is undoubtedly very large. In addition to 525 nurses who completed their course of training, there must be counted the probationers who failed to qualify as pupils in the Bellevue school, and the hundreds of affiliating nurses and graduates of other hospitals who come to Bellevue for post-graduate instruction and experience.

Another note of interest must be added. Early in November a pupil nurse—now happily convalescent—contracted typhoid fever in the hospital. She was one of seven who had refused inoculation. On the other hand, of eighty-three who accepted the typhoid prophylactic not one has acquired the disease, though they were all more or less exposed to infection throughout the summer and early autumn. The occurrence of this case has not unnaturally had a marked effect in influencing the other nurses to undergo inoculation.

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11 WEST 12TH STREET.

## CONSERVATIVE TREATMENT OF TUBERCULOUS GLANDS OF THE NECK, BASED UPON THEIR PATHOLOGY.

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Few diseases demonstrate so strikingly as scrofula the interaction of infecting and infected organism. And in this disease the clinical pictures varies to a remarkable degree. Hospital and dispensary miss the more frequent (the earlier) manifestations of glandular tuberculosis; while on the other hand the attention of a practising physician is but little directed toward the more extensive involvements since his patient consults a surgeon for more radical treatment. The point of contact changes remarkably one's attitude to scrofula, and statistics differ greatly as to frequency, intensity, and mortality.

For the past four years the writer has been treating tuberculous cervical adenitis in accord with a better understanding of living pathology, and applying this knowledge along the lines of physiological surgery rather than what are termed radical methods. The success attained from these more conservative methods points to a sound basis in pathology.

As is well known, epithelial surfaces ward off many attacking microorganisms; but it is the mesoblastic tissues which must bear the brunt of protection. The omnipresent polymorph may be able of itself to conquer the invaders, or at least to hold them in check until the body as a whole can muster sufficient chemical forces to annihilate the enemy; or the slow-moving connective tissue cells can imprison and starve the invaders to death. With the tubercle bacillus other tactics are necessary: the light-armed polymorph can only lay down its life in delaying the advance; mononuclears, large and small, are better equipped; but on the stroma cells depends the outcome. Moreover, the tubercle bacillus may remain hidden when odds are against it, and it is capable of withstanding a very prolonged siege in a state approaching hibernation.

In low metazoans, tissue-juice exchange is carried on directly in the common sap-bed supporting the cells. In higher organisms the economy of specialization necessitates a more rapid and definite transfer of food and waste materials. Of body outposts, none is so important as its chains of lymph glands along the main avenues of approach. The streams must pass through these glands, which remove more or less thoroughly harmful materials, chemical and physical.

Studies of various investigators, notably Flemming, Sabin, and Kling, seem to demonstrate that the first indication of a lymph gland is the formation from a preexisting lymphatic vessel of a labyrinth within which an artery breaks up to a capillary rete, and about the rete lymphocytes appear, probably by proliferation of stroma cells. Neighboring branches of the artery develop retes and about them also appear lymphoid clumps ("follicles"), several of which are usually grouped together within a single capsule to form a "gland" or "node."

It is at the hilum that the blood-vessels enter the gland, arteries passing almost immediately to the lymphoid tissue (follicles and their prolongations, the "cords") in which they form retes, then reuniting pass out into the trabeculæ as veins. Thus both lymphatic and hemic vessels emerge at points different from the entrant vessels. The course indicates that the follicle is in special relation with the hemic system rather than the lymphatic, and this is borne out by embryological and pathological observations. It is thus seen that the gland may be injured through both lymphatic and hemic channels; in the one case the sinus-system being first endangered and in the other the follicle-system. The gland is entirely mesoblastic, composed as it is of lymphocytes, endothelial cells, and more stable connective tissue. Afferent ducts come from the periphery or from higher glands; efferent ducts empty into lower glands and eventually into the hemic system near the junction of the internal jugular vein with the subclavian.

The glands interesting us at present are interpolated in lymphatic chains which girdle the neck at its junction with the head and pass down from this collar in the parotid region beneath the sternomastoid and under the clavicle to the thorax, where, after anastomosing with axillary and mediastinal lymphatics, they empty into the great ducts, and thence enter the hemic circulation. The glands are grouped in three regions: (1) submaxillary, where discharge the lymphatics draining buccal cavities and gums; (2) the region immediately behind and below the angle of the jaw, draining tonsils and nasal and pharyngeal mucous surfaces; (3) beneath the sternomastoid, which drain, either as primary or secondary glands, the entire head and neck.

Entrance of the tubercle bacillus to the lymphatic system through apparently normal skin must be very infrequent, though its possibility has been demonstrated by Courment and Lesieur; and glandular

involvement secondary to lupus is likewise rare. In most cases entrance is gained through the alimentary or respiratory tracts, whose portals are drained by these cervical lymphatics. The surfaces of nasal and oral passages, though well protected by mucus, cilia, muscular movements, etc., present better opportunities for penetration than cutaneous surfaces, since local distention is facilitated by moisture, the covering is thinner and softer, the subepithelial tissue looser and juicier, and drainage more efficient. Further, trauma is naturally a very common occurrence, and through crevices which we can scarcely detect microscopically, much less grossly, the bacillus may enter. Since the first noticeable glandular enlargement is usually beneath the posterior belly of the digastric as it crosses the sternomastoid, and since this gland drains the tonsil many observers regard the tonsil as the commonest portal of entry. There can be no doubt, however, that the other lymphoid tissues forming the end of the visceral lymph-nodular system (Waldeyer's ring) are very important, and nasopharyngeal growths, catarrh, irritation of lymphatics are frequent preludes to tuberculous infection. Whatever tubercle bacilli may be in food or drink or air must pass this tonsillar ring.

Infection does not depend merely, or even to any great extent, upon the presence of a bacillus on, or beneath, the surface, since we all doubtless receive and destroy or discharge many tubercle bacilli daily; and many times the bacillus produces a localized lesion without our being aware of it. A child, even though healthy, readily acquires an infection; but if the child be of an atonic family, be of "lymphatic" frame (that is, with mutable and poorly matured mesoblastic tissues), be aprosexic, with adenoids and large tonsils, and, furthermore, live an unhygienic life, eat unhygienic food, and, most important, associate with an unhygienic person already tuberculous, the disease is readily acquired.

Race, climate, and other factors contribute to the liability to infection; but hygiene is the solution of nearly all.

When the disease appears in an adult the infection is usually through the air (dust and droplet infection); in children, however, the alimentary tract plays an important part, since the bacilli penetrate the epithelial barrier, enter lymphatics, pass through glands to the thoracic duct and thence to the blood. All stages of this cycle have been traced a result of the work of many investigators, such as Cornil, Calmette, Rosenberger, Vansteenberghe, and others. Living tubercle bacilli in the cervical lymph glands of persons with no gross lesions of the disease are not nearly so frequent as in the mesenteric glands.

Pathological studies demonstrate, as we should expect on anatomical grounds, that there may also be infection of the glands through the blood-stream aside from miliary septicemia. In a chart of clinical and pathological data, an attempt was made to differentiate by histological picture the hematogenous and lymphogenous infections. While in practically every case of scrofula lesions were found in the marginal sinus, and at the periphery of the follicle (probably in the sinus wall), occasionally others lay in the heart of the follicle or but slightly excentric; and a section would sometimes show both pictures. Whether this can be taken as evidence of a hematogenous origin or not, we do know that in practically every case of pulmonary tuberculosis the bacilli are to be found in the blood. The percentage is smaller in scrofula.

Even in the simplest case we find that the glands may differ markedly in size and appearance, and the lesion varies with the type, virulence, and number of organisms, with portal of entry, and local and general somatic reaction.

When the bacillus has localized in a gland or elsewhere, it multiplies rapidly and throws out its products of metabolism as protective agents. The body as a whole is first apprised of the invasion by these products (toxins) and later by symptoms of localization. Local polymorphs, after their fashion, seek to ingulf the germ, other polymorphs are hurried to the scene, together with wandering cells of various types, and surround it. Local fixed cells proliferating, contribute to the walling in. Then ensues destruction of body cells and germs, and in the body's efforts to clear its field, the accumulating débris takes the path of least resistance to a surface upon which it is discharged.

Now, young tissue has a better chance to grow in and may terminate the conflict in scar formation. This, in general, is the chain of events, whatever the class of invading organism; but details vary for each class and are fairly characteristic wherever localized. The toxins of the tubercle bacillus are less acutely poisonous than those of many germs, hence the barrier is better developed, forming a nodule or tubercle. Though occasionally a few epithelial cells may be included and though the toxin undoubtedly produces an epithelial proliferation, the tubercle is for the most part of mesoblastic origin, its constituent cells derived from the blood as lymphocytes, or from the endothelial and stroma cells. All these may become epithelioid cells, and according to the circumstances pass through the various polyblastic stages to the formation of a connective tissue scar. Certain authors even state that the giant cells may break up to fibroplasts and produce connective tissue. Keeping this in mind we may reckon with tolerable accuracy the virulence of infection and resistance. Theobald Smith considers a tubercle as the resultant in the struggle of bacillus and host through past eons, and that its tendency is to the conservation of both bacillus and host. Certainly tissue selection is almost specific.

The tubercle bacillus can also produce a more diffuse granulation, seen especially in lymphatic children invaded by a large number of virulent bacilli, and the granulations may be so numerous and so vascular and so low in the polyblastic cycle as to seem structureless. Epithelioid cells and shrunken giant cells are scattered about and a coagulation necrosis may ensue, not unlike that of Hodgkin's disease, lymphosarcoma, or leukemia. Later, definite nodules may develop.

From the foregoing statements concerning glandular tuberculosis in general, and from the pathological findings seen in the laboratory, one fact presents itself of paramount importance for the treatment of this disease, namely, that these patients are suffering not with a local disease, but with a general systemic infection which at this time is held in check by a good resistance.

We first observed this several years ago while doing the block dissection. At that time we were removing in all cases the glands and gland-bearing fascia, and yet we always found minute glands following along the vein, so deeply placed that complete removal was impossible. These small pin-

head glands were thought to be merely toxic, but on section many were found to be tuberculous. However, in these cases healing occurred by primary union and the patients are alive and well today.

It was customary at that time to treat all small single glands, whether with or without sister glands, first, by removal of the portals of infection (tonsils, adenoids, etc.), and secondly, by simple incision into the suppurating foci. This latter procedure led into many difficulties, since a second infection was often added.

If one of these simple cases is treated by a radical operation we find that the process which began as a bacillus and ended in caseation and pus-formation, is being well taken care of by the host at the time of operation. It may also readily be seen that incision into the abscess cavity would open new portals of entry and that the tissues in their fight to prevent further bodily involvement could not carry on the war so magnificently waged.

While experimenting upon these cases in search of a better method of treatment, the writer began to pay more attention to general therapy of the patient and to treat the abscess with more respect. It was quite evident that if we could imitate nature and increase local edema and cell-proliferation before operation and then evacuate the caseous masses without infecting with other organisms, nature would be quite capable of handling her enemy, the tubercle bacillus. After trying to accomplish this end in different ways I hit upon a procedure which seems entirely satisfactory, namely—the production of a Bier hyperemia by a simple elastic band about the neck for a few hours before opening the abscess. Thus we increase edema and cell-proliferation.

Then, a very small straight incision into the gland, evacuation of the contents by a dull spoon, using no force or rough manipulation, and being careful not to break through the capsule nor to invade the protective phagedenic zone; and without washing or wiping out the cavity, the introduction of 2 to 4 per cent. formalin in glycerin and sealing the incision.

Now what happens? This: primary healing in 50 per cent. of the cases. Of the remaining 50 per cent, 30 per cent. have only a serous discharge, which ceases after three or four more injections, and the remaining 20 per cent. suppurate, more or less, depending on the delicacy and completeness of technique.

At the same time this local treatment was started we began a more systematic attempt to increase the general resistance of the patient. Forced feedings, twenty-four hours a day out of doors, and other methods of treatment which were recognized as applicable and beneficial in all cases of tuberculosis. The treatment of these simple cases was so successful that we applied our methods to more extensive gland involvement.

At this point we introduced the injection of tuberculin B. This procedure, so far as we were able to tell, had little or no effect (sixteen cases). We should probably have given it a more extensive trial had we not been induced by Prof. J. E. Temple of Cornell to try the enzymes of yeast. This has seemed to be the connecting link needed in the treatment. Since that time we have applied it in more than eighty-five cases. Fifteen of these cases were treated until we became satisfied that some more radical method was indicated to start the process of body-repair.

Of the other seventy cases fifty-six are well without gland involvement; ten are recent cases under treatment; three were lost sight of after the first treatment, and an infant with both cervical lymph-chains involved died with some intercurrent summer diarrhea while away from home.

Though these cases are limited in number, we feel that we have had sufficient experience to recognize the type to which conservative treatment is applicable. In a general way it may be said that any superficial gland, or chain of glands, may be treated in this way, providing we can satisfy ourselves that the caseous masses are acting as foreign bodies. It must be remembered that not the tubercle, but the germ is harmful. Opening allows the escape of toxins, and of the caseous material which acts as a foreign body, preventing granulation and approximation of surfaces. This caseation is the result of the tubercle, due in part to coagulation necrosis from anemia, to toxins from the bacillus, and to an enzyme found by Opie and others in the epithelioid cells themselves.

In yet another class of cases treatment by incision, injection, and exhibition of enzymes is markedly efficacious; namely, the rapidly developing abscess of the adult, sequent upon a glandular tuberculosis. This condition is not infrequently bilateral, and the abscess has the characteristic tuberculous tendency to burrow, often extending along fascia planes to the chest, or penetrating between muscles of the shoulder girdle. Under the treatment indicated, the abscess heals rapidly with minimum of suppuration, though its cavity may have contained a quart or more of cold pus.

Sometimes, even though the small incision is omitted, the caseous matter may disintegrate, may be invaded by granulation tissue, and healing by hyaline scar may ensue; or it may be surrounded by fibrous tissue and compressed to a tiny spot; or its fatty acids and soaps may combine with calcium salts, becoming firmer and more friable, and eventually be definitely calcified. All these processes of self-cure are common.

Large, multiple, deeply-seated glands are not to be dealt with by conservative methods. A more radical procedure is necessary, since these glands are all caseous with a conglomerate of tubercle producing many foci of dissemination often matted together, and, as can readily be seen by open dissection, lie one above the other, the lowest not being felt until the others are removed. An exaggeration of this type is often mistaken for Hodgkin's disease, since the glands are so large and numerous as to form a collar about the neck.

"Radical operation" for cervical glands is a misnomer. No operation for this disease can be radical, since the glands are so numerous that complete removal is impossible. The most we can do is to remove the lymphatic chain involved, with its infected outlying glands and the gland-bearing fascia. Such an operation presupposes a proper knowledge of anatomy; does not mean a limited incision, but open work—exposure of the vein and avoidance of the motor nerves. Any half-hearted dissection, without removal of the gland-bearing fascia, is meddlesome surgery; and if the result of such an operation is satisfactory it is sufficient evidence that the case was one deserving more conservative methods of treatment.

For nearly three years frequent attempts have been made by the writer to investigate in lower animals the action of the yeast enzyme. The small animals—mice, guinea pigs, and rabbits—do not bear the enzymes well. However, we have accomplished something. But because of the lack of accurate scientific data we are not ready to report upon this part of our work.

Our experience, then, would lead us to these conclusions:

(1) Scrofula is a tuberculosis of the patient, not merely of the glands; hence, prophylactic and therapeutic hygiene as well as local treatment is indicated.

(2) Complete extirpation of the disease is impossible, and if given opportunity, Nature tends to cure; hence, judgment as to treatment is necessary.

(3) The glands have an important protective function; hence, the surgeon should employ no more radical method than he must, and the glands should not be carelessly sacrificed.

(4) In a great majority of the cases the removal of the caseous masses by a proper technique is all the local surgery needed.

(5) The enzymes of yeast seem to be of benefit.

## RECENT FRENCH PROGRESS IN MEDICAL RENAL DISORDERS.

By CECIL KENT AUSTIN, M.D.,

PARIS, FRANCE.

The lay scoffer is still very much to the front with his time-worn taunts against the medical man, whom he looks on as an individual sleepily gyrating in a never varying circle, his shoulders burdened down with tradition, prejudice, and etiquette. "Look at the surgeons," he cries; "see the wonderful things that they are accomplishing. Why cannot you physicians accelerate the pace a little bit?"

We of the medical side are still, unquestionably, struggling with difficulty against our multitude of determined pathological adversaries, no such extraordinary and colossal streak of luck having as yet fallen to our lot as to the gentlemen of the knife, whom a clear-seeing chemist (and *not* a surgeon) freed forever from the nightmare of infection, with a single discovery clearing the field for all their future audacities. But still, however much our present status may leave to be desired, when compared with the complacency and liberty of action of the surgeon, the immense effort that is being put forth by the medical profession in the different countries is slowly but surely bringing their province also gradually out of darkness into light, and reducing into some semblance of order what has until recently been a state of affairs not altogether dissimilar to primeval chaos.

The special field of which I wish to speak today—medical nephritis—has been one of the latest to be taken in hand. But the work that has been accomplished in this branch during the past ten years, and in particular by a set of young French scientists in Paris, has at last brought it also into line and introduced into it a certain degree of general order, whereas previously a bewildering state of incoherence was the best that was at our disposal. The researches of Widal, Castaigne, Achard, Javal, Albarran, Ambard, and others have, as a matter of fact, effected for nephritis very much the same fundamental clearing work as was carried out by Charcot when he first took hold of diseases of the nervous system fifty years ago. For I think that it is no exaggeration to say that if a physician who graduated only fifteen years back, and who, let us say, for one reason or another had paid no attention whatever to kidney diseases since that time, were to-day to pick up the most recent French monograph on nephritis, he would find himself in an entirely new atmosphere of which he hardly understood even the terminology. He would, in fact, be obliged to begin by forgetting all that he had ever learned on the subject, and take it up entirely anew.

For what did the man of only fifteen years ago know about nephritis? He was taught that there were acute and chronic forms, and parenchymatous and interstitial varieties; he studied under a microscope the big white kidney and the small retracted one; he tested the urine for albumin, and, if he was an advanced laboratory man, he experimented with urinary toxicity. Then when that had been done he told his patient to go on a milk diet for the rest of his days—full stop—and that was all. If, as not infrequently happened, his client had a rooted aversion to milk in any form, the medical adviser had practically no alternative to offer, and the patient got along as best he could on any haphazard régime.

That was all only a short time ago, the first step in advance having been made by Widal at the beginning of the century. These researches and experiments of Widal's concerning the action of faulty elimination of chlorides in producing edema in certain forms of nephritis were followed by similar demonstrations as to nitrogen retention in the blood. Various means were devised for testing clinically the value of the kidney as a filtering organ. An entirely new classification of nephritis was advanced and accepted by everyone. The old state known as uremia was given another name and divided into altogether new forms. And, lastly and principally, the whole question of treatment, after all the only one of importance, was completely revolutionized and put on an intelligent and reasonable basis, to the relief of the medical man, and to the incalculable benefit of the patient. Since all of this work is relatively new, and has appeared in French; and since there are reasons for believing that even in its land of origin it has not yet found its way into the rank and file of practitioners, many of whom have not even grasped the significance of the simple chloride idea, but believe that *all* persons presenting medical albumin in the urine must be put on a chloride-free diet, it seems as though a brief review of the present situation may not be untimely. This I shall do in as general and elementary a fashion as possible, simply to call attention to the matter and awaken interest in it, referring the reader desirous of more complete information to any one of the many monographs that have appeared in France on the question of late, but above all to Castaigne's small handbook "Les Maladies des Reins," published only a short time ago.

In the conception of the young French school the old anatomical classification of nephritis is set aside as being of merely academic interest; their view of the question is a purely practical, clinical one. They treat the kidney as a common filter, which may or may not be carrying out its function properly. When it does so it is called permeable; when defective, more or less impermeable, such impermeability being at times elective, at others general. Defective action may be either plus or minus; that

is to say, the organ may either filter too freely, for instance, it may allow substances to escape that are usually retained in the blood, as is the case when albumin appears in the urine; or it may not filter sufficiently, damming up in the blood and its outlets substances that normally pass freely through the filtering organ, such as chlorides or urea. Such defective filtering, when minus, often reacts on the circulating system, heart and arteries, producing degenerative lesions, increased tension, cardiac hypertrophy, etc.

These few general ideas will render comprehensible the classification now introduced of medical nephritis, which is divided into four forms: albuminous, chloremic, uremic, and cardiovascular—the four being susceptible of a variety of combinations. It should here be stated with particular emphasis that in the present order of things uremia refers to an altogether new conception, the retention of urea in the blood, and not to the old idea of the general terminal state of nephritis preceding death; this is now known as renal insufficiency. This point cannot be too carefully borne in mind.

The conception of the kidney as a more or less permeable filtering organ has led to the creation of an entirely new chapter in the question, the study of the means to be employed for ascertaining clinically the degree of permeability of a patient's kidneys. And I cannot give a better idea of the amount and importance of the work that has recently been put in in this department than to point out that Albarran's book on the means for testing renal permeability is a work of five hundred pages. Fortunately, however, it is not necessary for the practitioner to go into the subject quite to that extent, and at the present time it will be amply sufficient for him to use, when circumstances seem to indicate it, the methylene blue test, which is extremely simple and well within the attainments of the most ordinary practitioner. A hypodermic injection of one cubic centimeter of a solution of methylene blue is made, under certain specified conditions, and then the urine is taken at frequent intervals and its color noted. This blue passes very quickly into the urine, whose coloration, under normal conditions, rises steadily to a certain intensity in a given time, remains there a while, and then decreases to extinction, also in a fixed period. The whole affair can be indicated by a graphic curve, resembling somewhat the chart of a pneumonia patient; its laws are now well known, and it is the greater or less deviation from the normal type that reveals the degree of impermeability of the kidneys.

Attention having been called to the kidneys by certain symptoms, possibly by the discovery of albumin on routine examination, as for life insurance, the problem for the physician is the following: to test the efficiency of the renal filter, and, in case of deficiency, to ascertain whether there is chloride or urea retention; also to explore the condition of the cardiovascular system, degeneracy, high tension, hypertrophy, galloping rhythm, etc.

A patient with albumin in his urine may be otherwise in an absolutely satisfactory condition, and remain so for years and years. His filtration may be perfect to the methylene blue, his tension and heart normal, and there may be neither chloride nor urea retention. Such a patient can therefore be allowed wide liberty in diet; he merely requires careful watching and retesting at regular intervals, but on the whole his lot is by no means an unhappy one. In former times he would, of course, have been consigned to a milk diet, *nolens volens*. This is practically an entirely new type of nephritis in medicine, one that is by no means rare, and a class of patients which has derived infinte benefit from the advance in the study of nephritis.

Another patient, with more or less edema, will be found to show a large amount of albumin in the urine, and there may be headache, dyspnea, nervous symptoms, or convulsive attacks. The test with methylene blue is normal or even plus; cadiovascular signs are absent; the amount of urea in the blood does not exceed the normal maximum of half a gram per liter; but the patient is found to be in a condition of chloride retention, the power of filtering this substance being for the time arrrested in the kidneys to a greater or lesser degree. This chloremic type is a common form of acute nephritis, and is most interesting as a subject of study, on account of the facility and accuracy with which an excess of chlorides in the system can be demonstrated to be the edema-producing factor. For reasons still unknown, as soon as the percentage of sodium chloride in the blood exceeds the normal figure, Nature gets rid of it at once by pouring it out of the circulation into the interstitial and cellular tissues, or into the virtual cavities of the body. Once there, however, the sodium chloride can be tolerated by the tissues only at a given point of dilution; it therefore attracts to itself the necessary amount of serum for this dilution, and it is this process that gives rise to the various forms of edema, anasarca, effusions into the peritoneal, pericardiac, or pleuritic cavities, or to the more insidious conditions of interstitial infiltration of the viscera—brain, lungs, or digestive tract. These deeper forms can exist quite separately from the superficial, visible forms, and are the basis of most of the clinical visceral symptoms of this condition—headache, disordered sight, vomiting, dyspnea, etc., as can be so readily demonstrated by a chloride-reduction diet or lumbar puncture. Of the two forms of nephritic retention, the chlorides and the urea group of substances, this is by far the least serious and most amenable to treatment. Nothing can be more gratifying to the practitioner than the way in which a typical case of this category reacts to intelligent management. Such a patient, with proper handling, will in a few days' time pass from a waterlogged condition with headache, dyspnea, and vomiting, to one of comparative comfort in which he can confidently await a gradual return to relative health. This class of cases also has benefited enormously from the new ideas as to the diet suitable to such conditions. The old milk diet was, to be sure, already one in which the chlorides are reduced to a very low figure, about 1½ grams per liter; but its weak point was that to a system already burdened with an excess of liquids it brought a still further excess, so that the end, though attained, was attained much more slowly than by the present method. It had been found empirically to fill the bill, but it did so only in a lame and half-hearted manner. Nowadays this type of patient receives an almost luxurious diet; plenty to eat, but only articles containing a minimum of NaCl, such as meat, fresh-water fish, eggs, dried leguminous vegetables, cereals, herbaceous vegetables, fruit, milk and fresh cheese, and a variety of minor substances for seasoning. The preparation of many of these dishes without salt does not render them particularly palatable, and it is not long before the average patient commences to cry out for his usual seasoning in a more or less determined fashion. But to begin with, when dealing with one of the

many people who have a horror of a milk diet, the physician is only too thankful to have at his disposal this precious alternative; and in the next place, it is generally possible by this means to gain the necessary few weeks for tiding over the crisis, at the end of which period it is admissible to allow the patient a weighed amount of 2 to 3 grams of NaCl per diem, which he can distribute over his food as best he sees fit, without any very great detriment to his progress.

The next form we have to deal with is perhaps the most interesting, on account both of its relative newness and of its great clinical importance, since in a way it commands the entire *prognosis* in chronic nephritis. In the case of the albuminous form, the chloremic variety, and the cardiovascular type yet to be considered, the patient's outlook, at least for the immediate future, is as a rule fairly good. Under proper management, and granting the necessary docility in submitting to diets often not particularly appetizing, the patient's survival is frequently a very protracted one, although the remote prognosis is always serious. But with the appearance of urea retention opens the period of storms; so that with any case of renal impermeability the all-important point is: Is there or is there not urea retention; if so, what is its percentage, the prognosis being based on that detail in a manner that can almost be called mathematical?

Differing in this respect from chloride retention, urea and its minor relatives, when prevented from passing through the renal filter in a normal fashion, do not flow out of the circulation into the surrounding tissues, but remain in the blood or in the normal or pathological humors of the body, and experience has shown that their percentage is alike in all of them, whether blood serum, spinal fluid, or effusion into a normal cavity (pleurisy, ascites, etc.) Now the amount of urea in these liquids has to be measured by the customary chemical processes. When there is no effusion present, and when spinal puncture is not indicated by some predominating symptom, we are obliged to fall back on blood serum, of which about 10 cubic centimeters are required for an analysis. This can either be obtained by wet cupping or by the insertion of a needle into a vein. When lumbar puncture has to be done the opportunity should never be omitted of making the necessary dosage; but the ideal situation (for the experimenter) is that in which there is effusion into one of the natural cavities; in such a case the practitioner has constantly the material at his disposal for all the tests he may desire.

Now experience has shown that the extreme normal limits for the urea percentage in these liquids extends from 0.15 to 0.5 centigrams per liter of serosity. In the zone extending from 0.5 to 1.0 gm. come the moderate cases of urea retention, those in which the danger is not immediate. But from one to two grams denotes a serious condition, in which the patient generally does not last more than a year; while above two, through three, and up to four, the survival is a question merely of a few weeks or at most months. The estimation of this percentage is a little beyond the capacity of the average medical man, but well within that of any chemist, and nothing is easier than to take the required amount of serum from a patient and mail it to a laboratory in the nearest town, where the test can be made in a few hours.

This category of patients also has profited greatly by the changed ideas as to the diet best suited to such forms of nephritis. Since the pure types of this variety are quite "dry," that is, show no edema whatever, the question of liquids is with them one of minor importance; what they chiefly require is a diet in which nitrogen is either very much reduced or eliminated entirely. This is possibly an easier régime to establish, and to get the patients to accept, than the chloride-reduction diet. It consists in prescribing nothing but sugars and starches. Of these there is a wide scale, and a moment's reflection will show any medical man that it is far easier for a patient to eat a lot of grapes, a baked potato with butter, or rice with sugar and cinnamon, than it is meat, lentils, or bread without any salt.

The fourth, or cardiovascular type, is such a familiar one that there is nothing particularly new about it to render it of special interest for the moment; so we will pass immediately on to the consideration of renal insufficiency (formerly called uremia).

This condition in reality scarcely deserves special description, since it is naturally not a morbid entity by itself. There is always renal insufficiency, from the moment that either of the two main forms of retention sets in, uremic or chloremic; it is only a question of degree. The old term uremia merely denotes the stage at which these conditions enter the danger zone. There are, then, these two varieties of insufficiency, the prognosis of the one, the dropsical form, being infinitely less alarming than that of the other, the "dry" and more insidious variety. The main clinical symptoms of the latter are, in addition to a watery urine containing a relatively low percentage of albumin, first, a loss of desire for food, extending sometimes to positive repulsion; second, cerebral torpor; third, pruritus; fourth, retinitis.

Treatment of the dropsical forms (chloremia) having already been referred to, that of the uremic type must now be mentioned. As good a way as any to begin with is what is known as a Guelpa cure of two to five days; this consists in an absolute water diet, with or without lactose, and a brisk purgation each morning. If there is no chloremia accompanying the uremia, a glass or two of a natural purgative water will suffice; in the opposite case scammony, or calomel, or some similar non-salt preparation, will be more advisable. This can be followed for a few days by a grape cure, during which the patient is required to consume two to three kilos of ripe, sweet grapes per 24 hours. At the conclusion of this stage the glycoamylaceous diet should be gradually established, and the patient given to understand, in guarded language but clearly, if possible, that the situation is a serious one and the outlook for the immediate future grave; and the relatives should be warned, according to the uremic degree reported by the chemist, as to the probable duration of the patient's survival.

In the foregoing paragraphs an effort has been made, under perhaps not altogether ideal circumstances, the article having been written at sea away from works of reference, to give a bird's-eye view of the present state of this question in France. It is one with which every practitioner should lose no time in making himself familiar, as it has been rendered in the hands of its gifted promoters preeminently *practical* and *clinical*. Whether considered from the viewpoint of diagnosis, prognosis, or therapeutics, it is of the deepest interest and importance. Nephritis is a common everyday disorder. Up to a few years ago this question was in a

state of utter darkness, and the treatment of the condition blind empiricism. But at the present time, thanks to the unremitting efforts of perhaps two men—Widal and Castaigne—it has been put on a matter-of-fact, intelligible basis, and the service thereby rendered to this large class of patients cannot well be overestimated.

20, Rue Chalgrin.

## A FATAL CASE OF GONOCOCCUS SEPTICEMIA.

By G. A. RUECK, M.D.,

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The reason for reporting this case is its great clinical similarity, at least during the first 26 days of the disease, to typhoid fever and the small number of cases of gonorrheal septicemia on record.*

Mrs. A. S., German, 22 years old, married, was in St. Francis Hospital, New York, from August 21 to October 26, 1911. The family history was negative.

*Previous History.*—She had measles when a child and acute articular rheumatism with "valvular heart disease" at the age of 12. Two years ago she suffered from an attack of acute purulent otitis media of the right side. This condition became chronic. For the last four years she had palpitation of the heart and dyspnea on slight exertion. Her feet would swell up toward night. The menstruation was normal. She was married four weeks ago, one week before the beginning of the present illness. Three weeks previous to her admission to the hospital she began to have continuous headaches and "an aching pain in the bones," especially in the knees. There was no epistaxis, no vomiting, no diarrhea, no cough, no expectoration, no hemoptysis, no nightsweats, no drowsiness, and no pain on urination. Nycturia occurred only once. The bowels were regular. The appetite was poor and the sleep restless. She was in bed for two weeks before admission to the hospital.

On admission her chief complaint was of headache, general fatigue and aching in the body, difficulty in hearing, and great thirst.

*Physical Examination.*—Temperature 104°. Pulse 120, regular, of low tension and small volume. Respiration 32. Patient was slim, of middle size, and anemic. The facies had a typhoid look (pale, dull, apathetic). The pupils reacted to light and accommodation; conjunctiva and iris were not inflamed. There was a discharge from the right ear; a bacteriological examination of the pus was not made. The left ear was normal. Tongue was coated, tip red. The lungs were normal.

Heart.—Slight systolic murmur in mitral area and at apex, transmitted to axilla. Towards the end of the disease the murmur increased in intensity and became loud and blowing.

Abdomen.—No rose spots, no tenderness, no tympanites, no gurgling sounds. During and after the fourth week of the disease a few small petechial subcutaneous hemorrhages, about 1 mm. in diameter, scattered over the abdomen, not disappearing on pressure, were noticed. At times there were only one or two, at other times six to eight present. The liver reached to the subcostal margin. The spleen was palpable but not tender.

Extremities.—The knee-joints were red, swollen and very painful for a period of 5 days during the fifth week of the disease. At other times joint-symptoms were slight or absent. Babinski and Oppenheimer reflexes were absent; the knee-jerks were normal.

Pelvic examinations by two visiting physicians and one visiting surgeon on three different occasions were negative.

Clinical Diagnosis.—Typhoid fever, mitral insufficiency, chronic purulent otitis media.

The patient was treated for typhoid fever while in the hospital. She received two rectal irrigations a day for the first four weeks, then one rectal irrigation a day. The legs and knees, when painful, were painted with guaiacol and wrapped in cotton.

Routine laboratory examinations were made by Dr. Hiram Gallagher, medical interne. Urine Analyses: August 23, 1911. Urine clear, blood-orange color, specific gravity 1025, acid, acidity 50 (in terms of decinormal sodium hydroxide), albumin +, sugar 0—microscopical=many casts, epithelium ++. Diazo-reaction was negative.

September 16, 1911. Urine very opalescent, dirty-brown color, marked brown-gray precipitate, specific gravity 1014, acid, acidity 20, albumin +, sugar 0; miscroscopical: pus +++ .

October 14, 1911. Urine very dark, bloody looking, marked grayish precipitate, specific gravity 1012, albumin ++, microscopical = red and white blood-cells +, casts ++++.

Blood.—On September 2 the white blood-cell count showed 8,000 leucocytes. On October 17, 8,000 white blood-cells were counted.

Five smears from cervical and vaginal secretions on different occasions showed absence of Gram negative diplococci.

Examination of the feces on October 18 showed many red and white blood-cells, amorphous débris, bacteria, and starch granules. The sister in charge of the case described the stools as follows: "In the beginning they were like those in typhoid fever. During the last three weeks of the disease they were pussy, blood-stained, and of a foul, unbearable odor."

Examinations of the blood-serum by myself: August 24, 1911. Macroscopical Widal reaction for *B. typhosus* with dilutions of the patient's serum of 1:40, 80, 160, 320=negative.

October 3, 1911. Macroscopical agglutination-test with dilutions of the patient's serum of 1:40, 80, 160, 320 for *B. typhosus* and *B. parathyphosus* =negative.

October 13, 1911. Macroscopical Widal reaction for *B. typhosus* and *B. paratyphosus* negative.

October 14, 1911. Wassermann reaction negative.

The temperature-curve in the beginning of the disease was like that of typhoid fever, and the physicians in charge were convinced of the correctness of this diagnosis in spite of the negative laboratory report. On the 26th, 27th, and 29th days of the disease the patient had chills followed by profuse perspirations. Then the temperature-curve was like that of sepsis. Now pelvic examinations and microscopic examinations of the vaginal discharges referred to above were made on different occasions with negative results. On the 46th day of the dis-

*Only cases of gonorrheal septicemia where gonococci have been isolated from the blood and properly identified by their morphology, cultural character, agglutinative, etc., properties are here considered. Stained blood-smears alone are absolutely insufficient. Marcel Faure-Beaulieu in 1906 collected 34 cases of gonorrheal septicemia diagnosed by a bacterial examination of the blood. Dieulafoy in 1909 counted 37 cases, his own two cases included. Only one additional case, as far as I know, has since been reported by Weitz.

ease the temperature came down to normal and remained low to the 56th day, but the patient was very weak. On the 57th day of the disease the temperature rose again, ranging from 100° to 102° F. This was taken for a relapse of typhoid fever.

October 14, 1911. The patient was very weak, nervous, at times, delirious, and suffered from diarrhea. I made two blood-cultures squirting 5 c.c. of the patient's blood from the median basilic vein into each of two Erlenmeyer flasks containing 100 c.c. of glucose (1 per cent.), calcium carbonate (1 per cent.)—meat infusion broth. (This medium was first used by Bolduan in 1905).* A pure culture of a small coccus was obtained which appeared single, in pairs, and in clusters. It was flattened on the juxtaposed surfaces, stained with ordinary dyes, and was Gram negative. There was no growth on ordinary media, but it grew on glucose-ascitic-agar, ascitic-agar, rabbit-serum-agar, and Conradi-Drigalski's medium. The colonies looked like those of the gonococcus.

October 18, 1911. Dilutions of Torrey's polyvalent antigonococci-serum were made with normal saline solution containing ½ per cent. of sodium citrate. Then a suspension of the organism to be identified was made from two tubes of a 48-hour growth an ascitic-agar and glucose-agar slant to which normal saline solution containing ½ per cent. of sodium citrate was added. This was shaken in sealed tubes for two hours, and centrifugalized at lowest speed for one minute to remove clumps which might still have been present. Equal parts of the dilutions of the serum and of the suspension of the coccus were mixed in agglutination tubes. These were put in the incubator for two hours and then in the icebox for 18 hours, after which time there was a grayish white sediment and a clear supernatant fluid in the tubes containing dilutions of the serum of 1:20, 30, and 40. This was the final proof that the organism in question was a gonococcus.

Now injections of Torrey's antigonococci-serum were given. The temperature came down to the normal, but the patient died five days after the beginning of the treatment.

An autopsy could not be obtained, but after the correct diagnosis by the bacteriological examination of the blood had been made, the husband admitted having had gonorrheal urethritis some time ago, and this condition was probably not yet healed.†

*Conclusion.*—The slight systolic murmur noticed on admission was without doubt the result of the attack of acute articular rheumatism at the age of twelve. It became louder and blowing in the course of the disease, probably due to gonorrheal vegetations on the mitral valve. The joint symptoms were only slight except during the 5th week when they assumed the character of an acute synovitis of both knees. The blood culture yielded a pure growth of a micrococcus which by all its tests proved to be a gonococcus. This case is therefore one of a pure gonococcus septicemia complicated by endocarditis and arthritis.

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* Blood cultures are not always successful. Harris and Johnston report that they got two positive cultures out of five in their case of gonorrheal septicemia. Marcel Faure-Beaulieu obtained three positive cultures out of four.

†See autopsy reports of cases of gonorrheal septicemia collected by Marcel Faure-Beaulieu (cases of Thayer and Prochaska) demonstrating the entrance into the blood-current of the gonococcus through the walls of the vaginal submucous venules.

## COMPARISON OF INTERNAL AND EXTERNAL URETHROTOMIES FOR TIGHT STRICTURES OF THE MALE.

By CHARLES AUBREY BUCKLIN, M.A., M.D.,

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There was invented by Otis a dilating urethrotome for thoroughly performing internal urethrotomy; this form of instrument is the only one capable of thus dividing a stricture internally. There was also invented by Otis a urethrometer for deciding when a stricture of large caliber existed, and when internal urethrotomy was performed, for demonstrating that the stricture had been thoroughly divided.

This dilating urethrotome cannot be introduced through tight strictures until after a staff urethrotome (as the Maisonneuve) or a divulsor (as the Thompson) has first been used. The use of either of these instruments in the urethra gives greater cause for subsequent annoying complications. It causes the penis to be abnormally curved during erection, after internal urethrotomy. Cases have been frequently observed where a corkscrew-tipped whalebone bougie could be readily introduced, when neither a Maisonneuve urethrotome nor a Thompson divulsor could be made to follow the bougie through the stricture. Internal urethrotomy has often failed to relieve strictures of the male urethra, besides being frequently attended by the above complication.

Clinical experience has demonstrated that a perfect internal urethrotomy which was over one inch in length could not be performed that was not as a result of the injury caused by this operation to the superior portions of the urethra, followed by the complication of a deforming curvature of the penis during erection. Admitting that internal urethrotomy has been performed with any of the urethrotomes that have been popular during the past, it has been necessary to divide, thoroughly, the entire band of connective tissue forming the stricture before any satisfactory results could be attained from this operation. This connective tissue is excessively contractile unless thoroughly divided. Notwithstanding that care has been taken to avoid contraction of the stricture, this has frequently formed again after internal urethrotomy. It is claimed that external urethrotomy combined with the treatment described below has generally enabled the surgeon to avoid the complication of contraction which usually follows an attempt to relieve a tight stricture by internal urethrotomy. External urethrotomy causes no complications, no matter what the length of the urethrotomy may be. The results are perfectly satisfactory provided that care is taken to prevent contraction of the stricture after its thorough division by this method.

The steps taken in performing external urethrotomy upon strictures so tight that the patient was able to void urine only in drops have been the follow-

ing: A filiform whalebone bougie, preferably with a corkscrew tip, is carefully manipulated through the stricture as soon as the patient is on the operating table. When in position it is not removed until the operation for stricture has been completed. A tunneled, grooved, stopped-catheter is threaded onto the whalebone bougie and passed down until it impinges upon the stricture. The point of the catheter is cut down upon, care being taken to avoid cutting the whalebone bougie. The sides of the bottom of the urethra, close to the stricture, have long silk sutures passed through them, the sutures being used as retractors of the urethra. The stricture is divided by a probe-pointed canaliculous knife which is carefully introduced at one side of the introduced bougie. In cases that can urinate only one drop at a time there has never been experienced any difficulty in manipulating this bougie without force into the bladder.

This method has been practised by the author since 1875. Difficulties have been encountered in introducing the bougie when the patient's ability to pass urine has been entirely obstructed by a tight stricture. In these cases it has been found expedient to cut down onto the point of the catheter, where it encountered the stricfure, to retract the sides of the urethra, and to use condensed artificial light from a perforated concave mirror, a magnifying glass, and a fine probe by means of which the urethral opening through the stricture is sought after. The author has never failed to find the urethral opening through the stricture. Cases have arisen in which competent operators have failed to locate this opening. It then became necessary to make a suprapubic opening or one in the perineum through which the bladder is drained, and the case is then treated according to the instructions given in special surgical works.

For retaining a pervious urethra after either an internal or external urethrotomy the meatus is slit up with a probe-pointed knife on the lower side sufficiently to admit of a metallic sound being passed. The size of the latter can be determined by the urethrometer, about a No. 20 to 32 being usually required. The urethrometer may also be used for dilating the urethra. It is passed through the meatus of the urethra and through the stricture in a collapsed form. It is then dilated to the above size and withdrawn to the meatus of the urethra, where it is reduced in size and removed. Either of these methods answers the same purpose of distending the urethra. This last method does not require the meatus to be opened, which result is considered by many as being a deformity. The treatment of slitting the meatus has been found to give the best results in the treatment of these tight strictures. The dilatation of the operated urethra is repeated daily for thirty days, every second day for thirty days longer, and then weekly for an entire year. After external urethrotomy no return of the stricture has ever been experienced in which the above methods of treatment have been adhered to.

The patient or some member of the family attends to these details. The instrument used is always previously disinfected. The tendencies of the stricture to contract after all urethrotomies is the complication that requires guarding against. Local anesthesia only is required in these operations. One dram of novocaine solution of a strength of 2 per cent. is injected into the urethra in internal urethrotomy or injected hypodermically at the point operated upon in external urethrotomy. It produces in five minutes sufficient anesthesia to make these operations painless. After the administration of this drug there are no annoying symptoms of poisoning as there is with cocaine.

Moraybank, Langside.

## Medicolegal Notes.

**Evidence as to Permanency of Injury.**—A physician who has attended an injured person from the time of the accident to the trial and who has testified to the injury suffered may properly be permitted to give his opinion as to the permanency of such injury. Permanency of injuries must usually be a matter of opinion only, to give which medical experts are permitted.—Schlander v. Chicago, etc., Traction Co., 160 Ill. App. 309.

**Province of Medical Experts—Opinion from Facts, Not Decision of Facts.**—In a murder case, where the partial insanity of the defendant was in issue, it was held that the testimony of medical experts, who had no knowledge of the defendant's condition at the time of the murder, as to his condition at that time, was inadmissible, except upon a hypothetical state of facts; the province of the expert being to draw inferences from, and not to decide, the facts of the case.—State v. Hyde, South Carolina Supreme Court, 73 S. E., 180.

**Medical Evidence—Leading Questions—Physician and Patient—Disqualification as Witness.**—In an action for personal injuries it is the duty of the jury, and not of the court, to weigh the evidence of the medical, as well as that of other witnesses.

It was alleged in the plaintiff's declaration that, as a result of his injury to the shoulder, his left shoulder joint became dislocated and the ligaments, muscles, and tendons of his left shoulder were cut, torn, stretched, lacerated, and permanently injured.

A question to one of his medical witnesses, "What, if anything, has been the effect upon the spinal column from the shrinking of the muscle?" was objected to because there was nothing in the declaration about any spinal column. It was held that, as it was claimed that one of the effects from the injury to the muscles alleged in the declaration was the curvature of the spine, the testimony was proper as showing the nature and extent of the injury to the muscles.

A physician had testified on cross-examination that he was not positive that *x*-ray plates of the plaintiff showed anything abnormal. It was held that he could be asked, on re-direct examination, whether he noted in the plates the deposit of any foreign substance in the muscles.

A physician was not allowed to testify, contrary to the plaintiff's evidence, that he had treated the plaintiff for alcoholism.—Wilkins v. Detroit United Ry., Michigan Supreme Court, 135 N. W., 350.

**Expert Evidence—Probable Result of Injuries.**—In an action for injuries caused by being burned by molten iron, the plaintiff's attending physician was permitted to state that the character of the plaintiff's wound was such that a sarcoma, or eating cancer, was liable to ensue. The court recognized the general rule that an expert physician testifying to the consequences of a personal injury should be confined to probable consequences, but in the present case it did not think the physician indulged in pure speculation. The word "liable" is defined as "exposed to a certain contingency more or less probable." The word was used by the witness in the sense of probable, and was doubtless so understood by the jury. The identical phrase was used in Montgomery v. Scott, 34 Wis., 339, and upheld as a legitimate expression by a medical expert. The evidence was also competent as tending to prove acute mental suffering accompanying a physical injury. The liability to cancer must necessarily have a most depressing effect upon the injured person.—Alley v. Charlotte Pipe & Foundry Co., North Carolina Supreme Court, 74 S. E., 885.

**Obtaining Liquor on Prescription.**—On a trial of an indictment against a physician and a druggist for selling liquor without a license and for conspiracy, several witnesses testified that they bought liquors from the druggist on the prescription of the physician, and that the physician was not their family physician and had not made any physical examination on which the prescription was based. It was held that the court could not instruct the jury as a matter of law that the presumption was that the witnesses obtained the liquor and used it legitimately. In such a case it was for the jury to say for what purpose the prescriptions were given—Commonwealth v. Dudley, 46 Pa. Superior Court, 337.

MEDICAL RECORD.

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## THE COAGULATION OF THE BLOOD.

THE frequency of the occurrence of thrombosis in disease, especially in typhoid fever, as has been recently pointed out, has attracted the attention of the practitioner to a phenomenon which has always had the greatest interest for the physiologist. It is pretty generally accepted that fibrin formation and the coagulation of the blood are brought about by the action of thrombin upon fibrinogen in the presence of soluble calcium salts. Fibrinogen and calcium salts are considered to be normal constituents of the plasma, but the source of the thrombin is at present a matter of controversy. Bordet and Delange have recently published (*Annales de l'Inst. Pasteur*, vol. xxvi, pp. 657 and 737) the results of several very interesting experiments designed to throw some light upon this question. They worked with blood taken from animals, chiefly monkeys, and came to the conclusion that the process of coagulation takes place somewhat according to this description: Upon contact with foreign substances or injured epithelium there suddenly appears in the plasma a substance (serozyme) which reacts with cytozyme to produce thrombin.

The cytozyme is produced by many of the tissue cells, by leucocytes, and to the greatest extent by the blood platelets. It can be extracted from any of these cells and such an extract may take the place of the cells in this reaction. Cytozyme is very resistant to heat, withstanding a temperature of 100° C. without destruction. It seems to exhibit a low grade of specificity in that it frequently acts better with the plasma of the animal from which it was obtained than with that from some other species. They also found that a neutral solution of peptone was able to take the place of the cytozyme in the production of thrombin. This is very surprising, for if an animal be injected with peptone the coagulability of its blood is enormously reduced.

The serozyme appears to be a much more mysterious substance. The authors believe that it does not exist preformed in the serum, but that it suddenly comes into existence when the need arises. Its source is wholly unknown. It is thermolabile, being destroyed by a temperature of 55° C. If the serum be shaken with barium sulphate and centrifuged, it is found that the serozyme has been absorbed by and precipitated with it. Plasma that has been treated with oxalate and then recalcified contains no serozyme, at least none that will functionate. Oxalate prevents coagulation by removing the soluble calcium salts that are necessary for the union of thrombin and fibrinogen. Citrates and concentrated salt solutions on the other hand interfere with the reaction between the serozyme and the cytozyme. If thrombin is permitted to form in some way or is added afterward clotting proceeds in a normal fashion.

If the results thus obtained outside the body can be considered comparable to those occurring within the body and if these observations can be verified, then we have been advanced a long step forward in the understanding of this most important process. Further reports of this work will be awaited with interest.

## TRACHOMA A NATIONAL PROBLEM.

THAT trachoma has a wide prevalence in this country and is a menace elsewhere than in alien immigrants, is beginning to be realized by sanitarians. It has been found to prevail to a great extent among the Indians and other natives of Alaska, where it ranks with tuberculosis and syphilis as one of the most destructive diseases to which these natives are subject. Of 1364 Alaskan Indians examined, over 7 per cent. suffered from trachoma, and nearly 3 per cent. were blind, largely as a result of trachoma. Among the American Indians also, the disease has a wide distribution, standing next in importance to tuberculosis, in certain sections of the southwest from 65 to 95 per cent. of the Indians being affected. At the trachoma hospital of the Indian Service at Phoenix, Arizona, alone, over 800 cases have been treated. It will be a surprise, however, to many to learn that trachoma in a virulent form has been found so prevalent in the mountains of Kentucky as to constitute a serious sanitary problem. Recently an investigation was made by Dr. John McMullen of the Public Health Service (Public Health Bulletin, November 9, 1912) in several mountain counties of Kentucky. Of approximately 4,000 persons examined, in this region, 500 or 12½ per cent. suffered from trachoma. Of the school children examined, from 3 to 18 per cent. were affected. Dr. McMullen says, "In examining the eyes of school children, it was my habit to request the teacher to write down the name of such pupils as had trachoma, and I was able in this manner to pick out entire families, as all usually had the disease. In many instances, the teacher informed me that the worst cases of sore eyes were not in school that day, and were often absent on account of 'sore eyes.' In one particular instance, the teacher volunteered to send for the remainder of the children and produced seven of the worst cases of trachoma I have ever seen, much like the old 'Egyptian ophthalmia' formerly seen among immigrants. The remainder of this family were either absent from home or the eyes were too acutely inflamed to make the trip to the schoolhouse possible."

Trachoma has evidently been present for many years among these native-born Americans. This initial survey of the mountain regions of Ken-

tucky would seem to indicate that trachoma will be found equally prevalent among the mountaineers of the contiguous States of Tennessee, West Virginia, Virginia, and North Carolina. In September, 1912, the usual semiannual clinic was held by Dr. J. A. Stucky, medical director of the Women's Christian Temperance Union Settlement School at Hindman, Knott County, Kentucky. These clinics are chiefly for disorders of the eye, ear, nose, and throat, although all diseases are treated. In the September clinic, 374 patients were examined, of whom 113 suffered from trachoma. Over 11 per cent. of the pupils resident in the school and 16 per cent. of the day pupils were subject to the disease. Roughly, 50 per cent. of all the patients applying to the clinic for relief were victims of trachoma or its sequelæ. Forty per cent. of the trachoma patients presented corneal complications with many cases of pannus and ulceration, 10 per cent. had trichiasis, 25 per cent. showed photophobia, and 25 per cent. suffered from defective vision, ranging from slight impairment to absolute blindness. The class of patients in this clinic was representative of the mountain districts.

For most of these mountaineers no adequate medical relief is now available. McMullen divides the relief work to be undertaken into two classes, prevention of new cases and treatment of existing cases. He considers popular education the best preventive measure. Clean and separate towels, linen, basins, etc., are as important as sanitation, clean homes, and fresh air. Stereopticon lectures, supplemented by district nurses who should hold nursing classes in schools and homes, would prove effective measures. Trachomatous children should be excluded from regular schools, and refractive errors among them should be corrected. For the more difficult problem of the cure of existing cases, time, money, and perseverance are necessary. Clinics similar to the one mentioned above could do valuable work, together with a system of movable field hospitals for cases requiring surgical treatment. McMullen makes a pertinent quotation from Dr. W. Cheatham on "Preventable Blindness," to the effect that, of the 64,000 registered blind persons in the United States, half at least are needlessly blind. Of the 6,200 in New York State in 1906, 1,084 were needlessly blind, and it was estimated that on an average the maintenance of one blind person for life by the State cost the sum of $10,000. In the Ohio State institution for the blind 67 per cent. of the blindness was due to trachoma. About a year ago in the Kentucky Institute for the Blind, 45 per cent. of the inmates owed their blindness to trachoma.

Since the New York City Board of Health has instituted systematic examination of the eyes of school-children, it has been found that from one-third to one-fourth suffered from some form of conjunctivitis, but it is probably incorrect to class a high percentage of these cases as trachoma. Dr. Charles H. May has pointed out that many of these cases present an acute or chronic catarrhal conjunctivitis with more or less follicular hypertrophy, and that these cases, if neglected, do not lead to pannus, corneal ulceration, or deformed lids. While this form of conjunctivitis is contagious, the type is constant and never changes to real trachoma.

While it is true that fewer cases of severe trachoma are now found among immigrants, still undoubted cases are fairly common. In the fiscal year 1911, 2,504 cases were certified in alien immigrants. There has been more or less criticism by those not familiar with the actual examination, that the medical examiners often fail to differentiate between true trachoma and other forms of conjunctivitis. But a careful, first-hand investigation will show that only undoubted cases, as tested by the chronicity and resistance to treatment, or by serious sequelæ, associated with a still active process, as well as by the clinical picture, are certified. Moreover, suspected cases are kept under observation and approved treatment for a period of time before certification. The disease is a sanitary menace wherever it occurs, and the immigration law properly excludes those suffering from it.

Trachoma is entitled to more consideration than it has heretofore received, as a factor tending seriously to decrease economic efficiency in its victims and indirectly in the local population among which it occurs. It is known to be communicable and is believed to be contagious. Its eradication from the United States will require knowledge and cooperation on the part of the people, and a systematic, long-continued campaign on the part of public health authorities. The U. S. Public Health Service is now conducting active relief measures for this and other diseases among the Alaskan natives, besides making a thorough study of the prevalence and best means of control of the disease among the American Indians and the mountaineers of the South, and so far as possible preventing its introduction by immigrants.

## EPIDEMICS OF SEPTIC SORE THROAT.

An epidemic of sore throats which broke out in Baltimore early in March, 1912, was in some respects so unusual as to engage the special attention of many physicians of that city. In Public Health Reports, November 22, 1912, Passed-Assistant Surgeon Wade H. Frost has a fairly exhaustive account of an investigation made by him of the epidemic. While sore throat was the most prominent of the early symptoms, the severity of the inflammation in the throat varied greatly and the marked and persistent enlargement of the cervical glands was one of the most striking features of the cases. From a bacteriological study of the outbreak made by William Royal Stokes and F. W. Hachtel of Baltimore, it appears that the organism giving rise to the infection was that described by Davis as the *Streptococcus epidemicus*.

Perhaps the most generally important phase of the epidemic in question, however, was the fact that the infection was disseminated chiefly by the milk of one of the larger dairies in Baltimore. Furthermore, and this also is a point of much moment, it is believed that the milk had become infected prior to its receipt at the pasteurizing and distributing plant in the city and that the infective

agent in all probability survived the inadequate "flash" process of pasteurization employed at that time.

An epidemic clinically similar, and due apparently to the same infective agent, occurred in Boston, in May, 1911, and was traced by Winslow (*Journal of Infectious Diseases,* January, 1912) to unpasteurized milk. Another epidemic of the same character occurred in Chicago in the winter of 1911-12. The epidemic is said to have been extensive and like that of Boston due to infection of the milk of a single large dairy. As Frost points out this rapid succession, in three widely separated cities, of extensive outbreaks of a new, or at least a previously rare and very serious infectious disease should direct the attention of the public health authorities to a grave consideration of its cause and prevention.

The main lesson to be learned from this epidemic is that in order to guard the public against similar outbreaks milk must be protected against infection in the most rigid manner. The other lesson is, as Winslow showed in the Boston epidemic, that the so-called commercial pasteurization is a delusion. Indeed, the method is worse than useless, for it gives confidence in a milk that may be seriously infected and thus be the means of spreading an epidemic widely. All milk that is pasteurized should undergo this process thoroughly, and in order to achieve this object it may be necessary to insist that no milk should be retailed under the name of pasteurized milk unless it has been so treated under official supervision.

### Difficulties in the Diagnosis of Diseases of the Ductless Glands.

The puzzling correlation of two or more ductless glands in the pathology of individual cases will doubtless do much to offset the original feeling of optimism born of the results of thyroid feeding in various diseases. Thus at a recent medical gathering in Königsberg (*Münchener medizinische Wochenschrift,* November 19) Goldstein related an experience in point. He performed hysterectomy and castration for myoma in a woman aged 41. Nine years later she presented symptoms suggesting acromegaly. The *x*-ray showed no abnormality of the hypophysis. It was learned that in childhood the woman had shown a similar acromegalic tendency which had evidently been outgrown. The castration had seemingly reawakened this tendency. The enlargement involved the hands and feet, nose and chin. The same author presented several patients who were apparently afflicted with dystrophia adiposogenitalis, a supposed hypophysis syndrome; yet the *x*-rays showed that the latter gland was normal. These patients presented a well marked triad —imbecility, pathological accumulation of fat, and hypoplastic genitals. Such cases force us to assume a primary embryonal hypoplasia which according as it involves one or another ductless gland, or more than one, produces a clinical picture which may be more or less misleading. We know, for example, that in a true cretin the thyroid is involved secondarily. We can help him to some extent when young by thyroid feeding, but cannot thereby reach the actual source of the developmental anomaly, nor greatly benefit the adult cretin.

### Folk Neuroses.

This term has recently been introduced to designate those nervous abnormalities which are so common as to be almost universal. A paper on the subject was read recently by Rubin at a medical meeting in Essen-Ruhr (*Berliner klinische Wochenschrift,* November 25). The folk neuroses comprise simple nervousness, neurasthenia, hysteria, and hypochondria. The condition must be approached both in the individual and in the community. It is unsatisfactory to deal with the individual case and efforts should be directed to wholesale hygiene by the promotion of sports and games, athletics, out-of-door life, school hygiene, etc. One strong-nerved member of the Society, in commenting on this paper, was so old fashioned as to deny the existence of a general tendency to functional nervous diseases of this class and made bold to imply that the subjects of these "folk neuroses" were either masturbators or malingerers. He was very properly and pointedly rebuked by several of his fellow members.

## News of the Week.

**Eye Diseases in the Schools.**—Urging that the responsibility for the physical examination of all school children in New York be placed upon the Department of Education, instead of being divided as at present between that department and the Department of Health, Dr. W. M. Richards of this city recently reported the results of his examination of forty deficient children in the public schools. From his examination and from a study of the numbers of children who fail to advance regularly he concludes that there are 78,000 children in the public schools of New York with defective vision, and that 80 per cent. of these could be greatly helped by proper care of the eyes. He recommends that the entire care of the school children, mental, moral, and physical be vested in the Department of Education and that all backward children be examined by carefully trained physicians and defects of structure or habit corrected.

**For Quieter Streets.**—The police of Berlin, Germany, have recently issued regulations intended to make the streets of the city quieter and cleaner. The regulations, which will be put in force on April 13, provide that the windows and doors of houses, shops, etc., in which music is being played shall be kept closed: that no whistling, singing, shouting, or loud talking on the streets shall be allowed; that teamsters shall not drive in a manner calculated to produce ear-splitting noises; that no paper, fruit skins, etc., shall be thrown into the streets; that the dragging of women's skirts or anything else capable of producing dust shall be forbidden; and that persons carrying umbrellas or canes shall not carry or swing them in any manner likely to imperil the safety of another person. One wonders how far such ordinances could be enforced by the police of New York.

**"Health Bookkeeping."**—The Health Committee of the Association of Life Insurance Presidents has recently made a report urging a campaign for the purpose of securing better vital statistics and registration in those States below the standard set by the United States Government. The registration of vital statistics is called "health bookkeeping," and it is believed that this method is essential in improving health conditions and prolonging life, and

that publicity is the most effective agent that can be employed in any reform, far more so than mere mandatory legislation. The association will cooperate with the United States Census Bureau, which is advocating a standard form of registration throughout the States.

**For Medical Research.**—The Faculty of Medicine of the University of Toronto, Canada, has received an endowment fund for medical research, the income of which will probably amount to $25,000 a year.

**Street Accidents.**—November was a dangerous month in New York City streets, according to the reports of the Public Service Commisson, which show that there were 5,783 accidents of all sorts connected with the street cars during the month, while the number last year was only 5,291. Of these, 19 were classed as serious, thirty-two persons were killed, seven received fractured skulls, thirty-eight had their legs broken, and the legs of two were cut off.

**Another Tuberculosis Hospital.**—The Herkimer County, New York, Board of Supervisors on December 20 voted to establish a county hospital for the treatment and care of persons suffering from tuberculosis. A site near Fulton Chain will be secured and improved as soon as possible. This is the twenty-eighth county in the State to take steps to provide hospital care for tuberculosis patients.

**Cholera Epidemic.**—Reports have been received in London of an alarming epidemic of cholera in Mecca, where 10,000 pilgrims have gathered. It is said that from December 23 to 27 there were 1,714 deaths from the disease.

**Scarlet Fever Prevalent.**—A small epidemic of scarlet fever in and about Westbury, L. I., has caused the health officer to order the closing of all the schools, including the Sunday schools, for at least two weeks. Sixteen cases were reported on December 28.

**Eugenic Reforms.**—The sterilization of persons convicted of certain crimes or judged unfit to have offspring and the creation of a State Board of Eugenics by which marriages shall be controlled and licenses to marry issued, are advocated by the Utah State Board of Insanity in a recent report to the Governor of the State.

**British Doctors Yielding.**—The British Government having made it clear that it was not disposed to offer any further concessions to the physicians in regard to the Insurance Act, a break in the ranks of the doctors is reported to have occurred and many of them are agreeing to accept the terms offered by the Chancellor of the Exchequer. Eight members of the Council of the British Medical Association are said to have resigned because of disapproval of the tactics of the Association.

**Anti-Opium Manifesto.**—Following the receipt of a note from the British Government protesting against the attitude of the provinces as regards the trade in opium, the Chinese Government has issued a manifesto reiterating its desire to suppress the evil.

**Centenarian Dead.**—Having worked daily as a servant and scrubwoman up to the age of one hundred, Ellen Horgan of New York died recently in her one hundred and fifth year.

**City Death Rate.**—During the week ending December 21 there were in New York City a total of 1,481 deaths, giving a death rate of 14.98, as compared with 1,310 deaths and a rate of 13.71 in the same week of 1911. The increase was confined entirely to mortality among adults.

**Railroads and Smallpox.**—Because of the prevalence of smallpox along the course of the New York, Ontario & Western Railroad, the New York State Commissioner of Health has urged the vaccination of all railroad employees, to whom he believes the spread of the disease may be largely traced. The officials of the railroad in question have instructed their employees to comply with the Commissioner's suggestion.

**Physicians' League of Brooklyn.**—At a recent meeting of this society the following officers were elected for the ensuing year: *President,* Dr. Thomas Dixon; *Vice-President,* Dr. Martin L. Bodkin; *Recording Secretary,* Dr. Charles Dumey; *Treasurer,* Dr. Melvin Sheldon; *Corresponding Secretary,* Dr. David Davidson.

**Gifts to Charities.**—The German Hospital and Dispensary of New York receives a bequest of $2,000 by the will of the late Mr. Louis Schaefer of this city.

The German Hospital also receives a bequest of $3,000 by the will of the late Mr. Peter Doelger, who also left $6,000 to the Little Sisters of the Poor for St. Francis Hospital, and $1,000 to Mount Sinai Hospital.

St. Mary's Hospital, Brooklyn, has received from Mr. Robert Furey of that city a gift of $100,000 to be used in paying off the mortgage on the building, and from Mr. James Shevlin a gift of $50,000 for the erection of a nurses' home.

**Obituary Notes.**—Dr. Edward Leroy Oatman of New York and Brooklyn, a graduate of the Bellevue Hospital Medical College, New York, in 1879, a member of the American Medical Association, the New York State and Kings County Medical Societies, the New York Academy of Medicine, surgeon to the Manhattan Eye, Ear, and Throat Hospital and to the Brooklyn Eye and Ear Hospital, and consulting surgeon to the Nyack Hospital and to St. Mary's Hospital of Waterbury, Conn., died at his home in Brooklyn on December 26, aged 59 years.

Dr. John A. Axline of Noblesville, Ind., a graduate of the Medical College of Ohio, Cincinnati, in 1873, and a member of the American Medical Association, and the Indiana State and Hamilton County Medical Societies, died at his home on December 9, aged 65 years.

Dr. Elizabeth S. Mitchell of Montreal, Quebec, a graduate of Queen's University Medical Faculty, Kingston, Ontario, in 1888, Licentiate of the Royal College of Surgeons and of the Royal College of Physicians, Edinburgh, Licentiate of the Royal Faculty of Physicians and Surgeons of Glasgow, and Licentiate of the Apothecaries' Society of London, 1888, died in Nashua, N. H., after a short illness, on November 30.

The Rev. Albert C. Bunn, M.D., a graduate of the Medical Department of the University of Buffalo in 1867, the first medical missionary to the interior of China, serving from 1874 to 1879 at Wuchang, where he established St. Peter's Hospital and the Elizabeth Bunn Memorial Hospital, and more recently a priest in the Episcopal Church, died at Asheville, N. C., on December 24, aged 67 years.

Dr. Christopher C. Miller of Detroit, Mich., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1868, one of the founders of the Detroit Homeopathic College and for some years its president, a member of the Michigan State Homeopathic Medical Society and of the American

Institute of Homeopathy, and ex-president of the board of directors of Grace Hospital, died at his home on December 17, aged 66 years.

Dr. John D. Pfister of Creve Cœur, Mo., a graduate of the Missouri Medical College, St. Louis, in 1888, and a member of the Missouri State and St. Louis County Medical Societies, died at his home on December 11, as the result of injuries received in an accident, at the age of 49 years.

Dr. Herbert Augustine Longan of Kansas City, Mo., a graduate of the Louisville (Ky.) Medical College in 1880, police surgeon of Kansas City from 1897 to 1907, and formerly connected with the Kansas City Medical College, died in Houston, Texas, after a long illness, on December 18, aged 61 years.

Dr. William Standing of St. Louis, Mo., a graduate of the Missouri Medical College, St. Louis, in 1871, and formerly a member of the faculty of the St. Louis College of Physicians and Surgeons, died at his home from pneumonia, after a short illness, on December 15, aged 66 years.

Dr. Everitt James Bergen of Washington, N. J., a graduate of the New York University Medical College in 1877, died at his home of heart disease on December 24, aged 66 years.

Dr. John Thomas Sidener of Columbus, Ohio, a graduate of the Starling Medical College, Cincinnati, in 1882, died at his home on December 16, aged 56 years.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

VOTING ON THE INSURANCE CRISIS—DISSENTIENTS MOVING—CHANCELLOR MEETS HOSPITAL CHAIRMEN—SCOTTISH QUALIFYING BODIES' STATEMENT—ANESTHESIA IN AMERICA—INTRAOCULAR PRESSURE—ANOTHER HOSPITAL FOR LONDON—OBITUARY.

London, December 20, 1912.

All the week voting has been going on as to accepting or rejecting service under the Insurance Act. Discussion has also continued and unhappily sharp differences of opinion have been developed. The figures will be reported to the special representative meeting of the British Medical Association to-morrow. This body will have to come to a decision which may be of the utmost importance to the association and indeed to the whole profession. Probably the meeting will be prolonged and perhaps may be adjourned until Monday. Up to this evening the following figures have been ascertained and though a few more may have come in by to-morrow the result is not likely to be greatly affected. The majority for rejection is a large one, 9,374 members and 1,935 non-members of the British Medical Association as against 1,968 members and 454 non-members. Thus out of the total number of members, which is about 17,000, the votes recorded are 11,342; where are the others? Further, out of the total number of qualified practitioners in the United Kingdom, about 29,500, only 13,731 have voted. These figures, however, display a greater degree of union in the profession than has ever been known. It should be remembered, however, that although less than half the qualified men have taken the trouble to vote the number must be great of those who have been unavoidably prevented and still greater of those whom the act does not concern as they do not engage in contract practice. Then it is not to be forgotten that 27,000 out of the 29,500 signed a pledge not to make individual agreements unapproved by the profession or the local medical committees. Nevertheless the slight concessions made, which on strict examination seem to have little reality, have caused hesitation among many, and a few have broken away, as I informed you, and set up another society to advocate submission and persuade others that the pledge is not binding. Of course the Socialists are delighted as they want to see a full time State service and will back up Mr. Lloyd George in his attempt to reduce the profession to the position of a gigantic medical club under the control of the proletariat and secure their support at the next election. If, as he declares, such socialistic schemes would be beneficial to the whole community he should begin on the legal profession—to which he was brought up and about which he may be supposed to know something, though he is wholly ignorant of the condition of the medical profession.

Today the statements of those desirous of taking service reach me. They protest against the "tyranny" they pretend is being exercised and declare "no bullying or threats are hard enough" to be used against them. They speak of "gross intimidation" but in a p.s. ask me for details of any intimidation to which I may be subjected. On the other hand they express "deep gratitude" to Dr. Lauriston Shaw, who seems to be their leader, although he is one of the council of the British Medical Association and chairman of its ethical committee. In May he was "amazed at the profession's moderation." This month he presided at the meeting of the dissentients. They have written to the Chancellor to ask if those who go on the panels will be protected against boycott or intimidation. Mr. Lloyd George has promptly replied in the affirmative though he significantly remarks "I can hardly believe that any such methods could be employed" in the case, but if they should be the government will do all in their power.

Many other points have been raised in the discussions among them how far the pledge is binding. Every man is the guardian of his own honor. Some are contending that the conditions have changed but others deny this.

On Tuesday the Chancellor of the Exchequer had an interview with the chairmen of the larger London hospitals. The meeting was understood to be private and merely for an exchange of views as to the effect of the Insurance Act on voluntary hospitals. An official statement was, however, issued to the press in which it is said the Chancellor explained that the main work of hospitals would not be affected as the act only affords the treatment given by general practitioners. He said the hospital question had not been overlooked in framing the act and it had been thought better to avoid any steps that would imperil the voluntary nature of the great hospitals. Some points were submitted to him as to the financial position of the hospitals and he promised to consider them. The report seems to point to the inference that the meeting took place on the understanding—at any rate on the Chancellor's side—that the profession would administer the act. Further, it may be supposed that the lines on which hospitals could continue their work were discussed. The in-patients' department may not be affected if the finances are not injured, but there is a probability of restriction of the num-

ber of out-patients which have long been regarded as reaching an abuse. Another view commonly expressed is that Mr. George only wanted to persuade the hospital chairmen to lend their influence with the profession in favor of the scheme.

The three qualifying bodies of Scotland (the R. C. P. and R. C. S. Edin. and Royal Faculty of Glasgow) have unitedly issued a criticism of the concessions made by the Chancellor. They declare nothing but an amending act can place the provisions on a satisfactory basis and that if members are prepared to accept service on the terms offered, the "Royal Colleges and Royal Faculty, while not attempting to dissuade them, cannot be parties to an agreement which is derogatory to the status of the profession." In their view the act "will perpetuate some of the worst features of club practice." They are assured that many practitioners agree with their view and they "wish it to be understood that the profession in adhering to that view may count on their sympathy and support."

We have had a discussion on the administration of anesthetics in America which may interest you. It was opened in the Section of the Royal Society of Medicine devoted to the subject by Mrs. Berry who described the method at the Mayo Clinic at Rochester, Minn., as observed in a recent visit. This will be familiar to your readers, so I may pass on to the discussion which followed the paper, premising merely that it was highly eulogistic and even stated that many hospitals prefer nurses specially trained at Rochester to their house surgeons, who usually only occupy the post for a short time. Photos of the open ether administration were shown by Mr. Paterson. Dr. Blumfeld, presiding, said the light anesthesia mentioned in the paper would not satisfy surgeons here, and he did not think its production called for so much skill as the author stated. Mr. Bellamy Gardner thought if ether increased the hemorrhage it should not be employed in operations for cleft palate or adenoids. He said relaxation of the abdominal muscles ought not to be produced and was never necessary if proper restrictions were used. Dr. A. L. Flemming thought the opinion that deep anesthesia prevented shock was responsible for many accidents. It was well this opinion was dying out. Mr. George Gask disputed the excellence of American practice and said the Mayo clinic was not a fair example, for it stood far above every other place in the United States as a surgical center. He had visited other places in America and considered the anesthesia below the London hospital standard. He thought, too, the surgeons interfered with the anesthetists far more in the States than in London. Open ether was given—and given well—at the Mayo clinic for everything. He did not know whether the climate accounted for the freedom from ether bronchitis in America. One thing to be remembered was that many patients traveled hundreds of miles to Rochester, so they did not get there the horrible fulminating cases seen in London hospitals. Dr. Silk said the type of patient seen at the Mayo clinic was scarcely that of the usual hospital patient. Dr. D. Powell said we might learn a lot about open ether from Americans, as they might from us about other anesthetics, and he had no doubt they would be glad to have a class of such expert anesthetists as we have. Mr. Carter Braine spoke of the risk of employing unqualified persons as anesthetists. Mr. Paterson said we learned more from Americans than they from us. Open ether was not so well given here as on the other side. He had become converted to their method and now rarely gave chloroform. Mr. Pridaux sent for inspection a face piece he had designed for use for patients who had lost many teeth.

The Ophthalmological Section has been considering the physiology of Intraocular Pressure, introduced by Dr. Leonard Hill. He and Drs. Flack and Thomson Henderson had worked together and the subject had been before the Royal Society. The flow in the retinal vessels was known to cease when the pressure reached that of the general arterial blood. On puncturing a cat's cornea and then gently pressing its abdomen Drs. Hill and Flack found the iris on that side the seat of hemorrhage, which came from the capillaries. Their explanation was that the normal aqueous pressure exactly balanced that of the capillaries. Intraocular tension had been said to be due to elasticity of the lens, but it had none, for when removed it was a soft pudding-like body. In the act of accommodation the muscle contracted, but continued of the same volume, moving inward as shown by Thomson Henderson, allowing the fluid to pass from the front of the lens into the spaces of the ciliary body or of the cribriform ligament and into the suprachoroidal space. Some remarks were made by members expressing difference of view, but the discussion was adjourned.

We are to have another hospital in London, though many people think it is not required. The plea for it is that in South London there is room for it. The special feature is that it shall be exclusively officered by medical women. An anonymous donor has sent £25,000 to the promoters to purchase a site and build.

Dr. C. Theodore Williams, M.V.O., F.R.C.P., consulting physician to St. George's Hospital and to the Brompton Hospital for Consumptives, died on the 15th inst. in his seventy-fourth year. He was an Oxford man and honorary fellow of Pembroke College. He gave the Lettsomian lectures in 1877 on "Climate in Consumption," and in 1887 published a volume on "Pulmonary Consumption." He contributed largely on similar subjects to the Medico-Chirurgical Transactions and Quain's Dictionary, as well as to the societies, his work extending almost to the present time. In 1902 he was a vice-president of the Congress on Tuberculosis and opened the discussion on climatology. He was one of the founders of the Davos Sanatorium, and on King Edward's committee appointed to study the subject of sanatoria.

## NINTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

MANILA, November 6, 1912.

THE third session of the Philippine Islands Medical Association began with a surgical clinic, from 7.30 to 10.30 a. m., at the Philippine General Hospital, by Doctors Gilman and Schiffbauer. The first paper read was "The Surgical Treatment of Acute Gonorrheal Orchitis and Epididymitis," by Dr. B. K. Burdette.

The second paper, entitled "The Outbreak of Plague in Manila during 1912" was read by Dr. Victor G. Heiser. In this he gave a brief statement of fact with regard to the principal occur-

rences in connection with the present outbreak of plague in the Philippine Islands, and called attention to the fact that after an absence of six years in human beings and five years among rats, plague again made its appearance in the Philippine Islands on June 19, 1912. During the interim in which plague was absent from the Philippines, the disease was frequently encountered on arriving vessels, but was invariably stamped out at quarantine. Last spring a most insidious form of the disease was found upon a number of vessels. The first case occurred in the person of the Chinese cook on the S.S. *Zafiro,* which arrived April 5, and after the vessel had been in port for 24 hours. The victim was seen on deck at 10 p. m. the night previous, but at 6 o'clock the next morning (April 6) he was found dead. The autopsy showed this to be a case of pneumonic plague. The second case occurred on April 7 on the S.S. *Loongsang.* On investigation the captain of the ship stated that on the afternoon of the previous day, while a Chinese member of the crew was hauling on a rope, he fell over in a faint, was placed in a chair and died in a few hours. The autopsy showed that he died of pneumonic plague. The third case was encountered at the Mariveles Quarantine Station in the person of a Chinaman who, at the time of his arrival, presented no other symptoms except elevation of temperature. During the week which followed the only symptom that he showed was a continued fever, and during all this interim he constantly insisted that he was not ill, and demanded that he be discharged from the hospital. On the afternoon of the eighth day slight enlargements were noted in the axilla and cervical region, and on the morning of the ninth day he died of plague, the diagnosis being bacteriologically confirmed. The first case of human plague in Manila occurred on June 19 in the person of a Filipino watchman in the Chinese district, who lived on Calle Antonio Rivera. The history of the case showed that he had been a permanent resident of Manila for years; had not associated with persons who had been in Hongkong or other plague-infected places, and lived far from the waterfront, and in general, his history was negative. No deductions could be drawn as to the manner in which he contracted the infection. The second case occurred in a Filipino woman who lived on Calle Azcarraga, far removed from the first case, and clinically presented no buboes, and it was only after most persistent search at autopsy that small glandular enlargements were found in the femoral region. Smears made from these as well as the spleen showed plague-like bacilli, and inoculation experiments resulted positively for plague. A rat-catching campaign was immediately started, and rats were caught at the rate of 3000 per month, but it was not until August 31 that an infected rat was found. The sanitary measures employed were the isolation of the sick at the San Lazaro Hospital; the sprinkling of infected premises with kerosene, and later, disinfecting with some form of emulsified coal-tar product; rat-proofing of houses and premises, and insistence on the use of metal garbage cans, and in general, the sanitary improvement of the districts in which cases occurred. He showed a map of the cases, and the intimate relationship between human and rat plague was graphically shown; in other words, where there had been disease among human beings there was invariably found plague among rats. The most probable factors concerned in the introduction of plague into the Philippines were rats that actually arrived in cargo. It was not likely, he thought, that the plague rats came ashore by the gangways, ropes, or cargo-chutes, because the rats along the waterfront were still negative for plague, and the wharves were practically free from rats at all times. On account of the fact that cargo, passengers, rats, vermin, fleas, etc., could arrive from badly plague-infected centers within the period of five days showed that it was possible for the disease to be imported well within the incubation period. It was possible that it might have been introduced by rats with china-ware, glass-ware, etc., which is packed in straw or hay and which is imported from Japan.

The next paper was entitled "Bacteriological Observations Made During the Outbreak of Plague in Manila in 1912," by Dr. Otto Schoebl. In this the author gave the technique for detecting plague, both microscopically and biologically, in man and rat. This corresponded closely to that which was published recently in the Public Health reports. In two instances plague bacilli had been recovered from skin lesions, one of which was apparently a flea-bite. Plague bacilli had been recovered a number of times from blood, and almost invariably in the fluid which is aspirated from plague glands during life.

The next paper was entitled "The Outbreak of Plague in Iloilo in 1912," by Dr. Carroll Fox. In this the author drew attention to the fact that in this outbreak the first case occurred on July 5, and the last on September 17, a total of nine cases having occurred. In spite of an active rat-catching campaign which had been carried on since the first human cases occurred, no infected rats had been found. The author suggested the possibility of plague having been introduced into Iloilo from Manila, or perhaps from Hongkong or other infected place, by means of bed-bugs. He was not prepared, however, to make out a scientific case in this regard.

In the discussion which followed upon the three plague papers which were read, Dr. Gomez desired to know whether it was not probable that human cases had been overlooked between the time that the case occurred at Quarantine, in April, and the time that the first case was recognized in Manila, in June. Dr. Butler desired to have more specific information as to whether there was any evidence that a bedbug having recently bitten a person suffering from plague could not inoculate a non-infected individual with its proboscis. Dr. Ashburn desired to know whether the petroleum was sprinkled around premises with the idea of its being a germicide or simply an insecticide; also, whether the cargo which arrived on the infected steamers *Zafiro* and *Loongsang* had been traced to its destination, with the view of determining possible infection from it being responsible for the first human cases. He requested information as to whether definite proof was available that the deaths among rats in the warehouses of the Manila Railroad Company were due to plague, and also wanted to know whether there was any evidence whether there were other factors beyond flea or bedbug transmission which might be responsible for the outbreak of the disease.

Dr. Gibson called attention to the fact that it had been the frequent experience of the New York Board of Health that guinea pigs and other laboratory animals were bitten by bedbugs, from which he wanted to know whether there were any data available that bedbugs might bite infected rats and

thus convey the infection to human beings. Dr. Jackson called attention to the desirability of freeing the whole city from rats. He pointed out the difficulties which lay in the way, and that it was an ideal the accomplishment of which should be worked for. He emphasized the remarks made in the paper of Dr. Heiser, that the most successful method of catching rats in Manila was found to be the bait of rice which had been boiled with arsenous acid in the proportions of 5 to 1.

Dr. Yeamans called attention to the old formula of plaster of Paris and flour, which, he stated, had been successfully used in San Francisco. He also suggested that rats might be successfully caught by having a barrel half full of water, and with a tilting lid, and having inside a rock which just projected above the water. The rat stepped on the tilting lid, was dropped into the water, climbed up on the stone and lustily called for help, which brought many other rats to the trap, who likewise fell into the water and eventually were drowned.

In summing up the discussion, Dr. Heiser stated that the food cargoes which arrived from plague-infected ports were generally distributed by some hundreds of carriers within an hour or two after the cargo was placed on the dock in Manila, and it was obviously impossible to trace individual packages of cargo; that in the cases of the cargo from the *Loongsang* and *Zafiro,* it was inspected, but no evidences of rat infestation were noted, and it was, therefore, promptly released. Dead rats which were found around the Manila Railroad Company's station were, unfortunately, not sent to the laboratory, with the exception of one rat which was found upon the day upon which the Bureau of Health was notified of the mortality among rats. This was reported as very suspicious for plague, but up to this time the complete biological report was not available; the indications were, however, that it would result positively. In sprinkling kerosene about premises of infected houses, the idea was to use the same as an insecticide, or pulicide, and not as a disinfectant. By this means an infected building or premises could be quickly made safe for the entrance of laborers, and after this, by the use of an emulsion of a coal-tar product, actual disinfection could be carried out. In addition to other factors being concerned in the transmission of plague, he replied that the map of the present outbreak seemed to furnish almost conclusive proof that the disease is intimately associated with rat-plague. Furthermore, the facts that the plague was confined to the north side of the river, that people crossed the bridges freely, and that the rats did not cross the bridges, would seem to offer additional proof that the rats were the principal factor concerned in the transmission of the disease. He stated, however, that in the first case found there were abscesses of the tonsils, and the principal buboes found were in the cervical region, and called attention to the fact that McCoy had recently reported from Hawaii that the cases of plague which had occurred during the past few years in Hawaii, in isolated places, almost always showed the largest glandular involvement in the cervical region. As to other factors concerned, he invited attention to the recent report by a Russian observer, that bedbugs that had bitten plague-infected individuals were crushed in the bedsheet which was thrown aside, and the blood thereon, examined six months later, was found to contain virile plague bacilli, showing, of course, that there might be other factors concerned in its transmission, but on account of the strong evidence that the outbreak which occurred in the warehouses of the Manila Railroad Company, in which thirteen cases occurred in two days, and which was immediately brought to a close by simply exterminating rats and sprinkling the premises with kerosene, was intimately associated with rats, it was thought that these were the factors most concerned in the outbreak in Manila.

In reply to Dr. Jackson, he cited the example of Tokio, in which some millions of yen were spent over a period of three years in an attempt to free that city from rats, and at the end of that period the rats were, apparently, as numerous as when the eradicating campaign began. While it was a grand ideal to attempt to destroy all the rats of a city, yet this could scarcely be done as a Government measure, because the amount of funds that would be necessary would be prohibitive, and the only hope for eventually eradicating all rats from the city was an engineering problem which consisted in building the rats out of existence, that is, to make all premises practically rat-proof. For the purpose of combating plague, he believed that the best results could be obtained by centering all forces available upon sections in which infected rats had been found, with the hope of stamping out the disease among them. This method had been successfully used in Manila in 1906, and resulted in the complete eradication of plague after all other measures which had been used over the period of the seven previous years had failed.

At the afternoon session, which took place at 2 o'clock, the first paper read was entitled "Intra-orbital Tumors and Their Operative Consideration," by Dr. Reinhard Rembe. The author showed a large series of photographs and explained his technique of removing the outer wall of the orbit in order to make the orbital tumor accessible.

The next paper was entitled "Notes on Some Recent Surgical Cases at the Naval Hospital, Cañacao," by Dr. N. J. Blackwood. In this the author gave a report on a case of typhoid perforation which had been successfully operated upon, and a number of appendicitis and gall-stone cases.

The next paper was entitled "A Review of the Literature on Cultivation of Fresh Tissues in Various Media," by Dr. R. M. Lhamon. In this the author gave a review of the recent literature and showed specimens of active tissue which were grown in Harrison's medium.

The next paper was entitled "Diagnosis of Appendicitis," by Dr. P. K. Gilman. The author especially pointed out the fact that appendicitis was a disease of many variable symptoms, and the removal of the appendix, even in those cases which showed slight symptoms, often resulted in great improvement in the patient's condition. He related a number of cases in which, for instance, chronic constipation had been present, and, after the removal of the appendix, it disappeared completely. In others there had been nervousness and alternate attacks of diarrhea and constipation, all of which symptoms were relieved after the appendix was removed.

The next paper, "Treatment of Acute Appendicitis," was by Dr. Hans Schiffbauer. In this the author gave a brief description of the treatment which is used at the Philippine General Hospital for these cases.

The last paper was entitled "A Preliminary Report of the First Five Cases of Cesarean Section in the Treatment of Placenta Previa Performed

in the Philippine Islands," by Dr. Fernando Calderon. The author stated that the operation was first done in the Philippines at the old Civil Hospital in 1904, and the last case was the one which had been operated upon last week by him. The results, in all cases, were thoroughly satisfactory, and the mortality compared favorably with that obtained by other operators throughout the world.

## THE ANCON HOSPITAL.

To the Editor of the Medical Record:

Sir:—In an editorial article in the November 30 number of the Medical Record on "Relapsing Fever at Panama," you state that: "This outbreak illustrates forcibly the need of a hospital in the Canal Zone so situated and conducted that it could utilize the wealth of new clinical material which will be found there for study and observation." The Isthmian Canal Commission has had in operation for more than eight years such a hospital, which now has over 1,500 beds and treats over 20,000 cases a year, and in connection with this hospital there is a large and well-equipped laboratory where research work is being done. A brief examination of the many excellent papers which have been contributed by the staff of the hospital for current publications, as well as many others which are published in the proceedings of the Canal Zone Medical Association, will show that the wealth of clinical material is being fully utilized for study and observation. In this connection I may state that the fever referred to by Dr. Perry in his report is not a relapsing fever due to spirochetes.

Chas. F. Morse, Superintendent.

# Progress of Medical Science.

### Boston Medical and Surgical Journal.

*December* 19, 1912.

1. Scholarship in Medicine. By F. C. Shattuck.
2. Chronic Alveolar Osteomyelitis (*Pyorrhea Alveolaris*): Its Causes and Treatment with Vaccines. L. S. Medalia.
3. The Insanity of the Feeble-Minded. W. N. Bullard.
4. Alimentary Aberrations: The Röntgen Rays as a Factor in Their Diagnosis. P. F. Brown.
5. The Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to the Method of Forlanini. G. M. Balboni.

**2. Chronic Alveolar Osteomyelitis.**—L. S. Medalia divides the treatment of the condition into three parts, as follows: Vaccine therapy, systemic treatment, and local treatment. The combination of stock with autogenous vaccines was found to be more efficacious than either alone. The dose varied from 50 to 100 million of pneumococcus vaccine and from 50 to 300 million of *Staphylococcus aureus* vaccine, except where the latter was used at the same time for a staphylococcus skin infection (acne, furunculosis) when its dose was increased. The dose of the streptococcus vaccine varied from 15 to 75 million. The interval varied from 5 days in the beginning to 8 and 14 days or longer later, according to the amelioration of the local condition. Systemic treatment was principally attention to diet, the development of a water-drinking habit (2 quarts daily), proper personal hygiene and attention to proper elimination. The local treatment was left entirely in the hands of the dentist, who removed calculi and necrotic bone when present, kept the teeth free from tartar, established free drainage of pockets and instructed the patient in the home care of the teeth. The dentist found it necessary to delay local treatment in many cases in which the teeth were too loose and gums too tender for instrumentation. Such patients were followed up by vaccine treatment first until the teeth were rendered tighter and the gums less inflamed and less tender. Mild antiseptics were also advised, mostly for the purpose of calling attention to the cleaning of the teeth and tartar deposits.

**4. X-Ray Diagnosis of Gastrointestinal Conditions.**—P. Brown states that this method is but one factor making for diagnostic success in any given case. The practitioner of the future is in danger, through just such helpful agents as these, of becoming a clinical scientist instead of a scientific clinician. His primary mission is still entered upon at the bedside and at the bedside he has little else to aid him than had his predecessors of the earlier days—his five wits. Let him, therefore, use them, and then he will be able to stretch forth his hand toward the laboratory, not beseechingly, as one who is helpless, but with the authority born of knowledge, as becomes a master.

### New York Medical Journal.

*December* 21, 1912.

1. The Clinical Measurement of Defects in the Central Visual Field. P. Fridenberg.
2. A Unique Case of Artificially Induced Sterility. W. J. Robinson.
3. What Eugenics Does Not Mean. M. Solomon.
4. A New Operation for Decompression. E. R. McGuire.
5. Psychoses Occurring in Twins. P. Smith.
6. The Monthly Incidence of Certain Diseases. H. A. Brown.
7. The Radical Mastoid Operation. R. L. Loughran.
8. Autotherapy. C. H. Duncan.
9. A New Tourniquet for Intravenous Work. P. B. Thatcher and E. J. Hackney.
10. The Problems of Obstetrical Practice. W. W. Chipman.
11. Carcinoma of the Uterus. T. S. Cullen.

**1. Defects in the Central Visual Field.**—P. Fridenberg calls attention to the fact that there is at present no reliable, simple, and accurate apparatus for mapping out the central visual field (campimetry) or determining exactly the position and dimensions of central defects (scotometry). Most of the campimeters are merely dark screens or large blackboards placed at a distance from the patient of from three to seven meters. On these backgrounds or plane projections the fields, or defects in them, are plotted by various devices, such as inserting pins or markers. The procedure is laborious, slow, and cumbersome. The author has devised instead the following apparatus. It consists of a stationary black background corresponding to an area about 10 deg. to 15 deg. square, divided into degrees at the usual perimeter distance, *i.e.* 10 to 11 inches, which can be readily attached to the arc of the perimeter and moved along until the marker at its central zero point corresponds as closely as possible to the projection of the macula or of the blind spot, 15 deg. to the temporal side, as the case may be. To insure absolute fixation without fatigue or discomfort, one may have recourse to binocular stereoscopic fixation, a principle applied with success by Haitz. In this way the eye under examination is kept steady by its fellow; not only the central marker but the whole stereoscopic combination figure forms a sort of fixation frame, so that even in the presence of a central scotoma there is steady fixation. The patient is not conscious of the physiological exclusion of one eye from the visual act and function test. Abducting spheroprisms of about four diopters plus, corresponding to the test distance, serving as a stereoscope, may be attached to the head piece of the perimeter, a small central projection or partition serving to separate the fields of the two eyes. The test objects, not more than one to two millimeters square, must be held in the hand so as to be moved with the requisite rapidity and evenness, and with minute excursions. Rapid change of color should be possible, and the illumination should be constant. While these requirements can be met more or less with the usual color carriers, it seems that a single color test with concealed, artificial light source, adjustable diaphragm for accurately regulating the size of the visible test object, and rotating disk for rapidly bringing one color or another into view without change of position, would be a great improvement. Such a color carrier

would have the appearance of a diminutive electric ophthalmoscope (obviously without lenses); the disk being only about 25 mm. or 1 in. in diameter, and the miniature lamp of the smallest dimensions throwing light only through the small central aperture to be occupied by the colored glass or celluloid of the test objects. Instantaneous and intermittent exposure could be effected by suitable arrangement connected with the lamp contact, or by means of a small spring sliding shutter moving up and down in front of the diaphragm, as in the Fridenberg central color test. The necessary current could be supplied from a single pocket cell, or a cell in the handle of the color carrier.

3. **Eugenics.**—M. Solomon believes that the object of eugenics is not only to provide for a child a clean heredity but also to give it the best possible bringing up. For this reason he does not approve of separating euthenics from eugenics, as some are inclined to do, on the ground that euthenics stands for good environment and eugenics for good heredity. Although Karl Pearson has tried to read heredity, and heredity alone, into the definition of eugenics as laid down by Galton, the latter's definition of eugenics states that it is "the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally." He does not prevent environment from inclusion under the term eugenics. It is the science of being well born and well bred. Good heredity and good environment are opposite in their effects, but strengthen each other, and each is essential for the proper development of an individual. Either without the other is impotent.

4. **A New Decompression Operation.**—E. R. McGuire, after noting the imperfections of the ordinary decompression operations, states that the whole problem of decompression can be solved by an operation which makes the skull increase in size according to endocranial tension. Viewed from this standpoint, the usual operations are scarcely sufficient. At first the small circular opening was made; later a bone flap, and still later the subtemporal operation of Cushing. None of these makes the skull larger, but depends for its success on the development of a hernia. Hudson's operation consists in making a flap on one side posteriorly, sufficiently large to allow the hemisphere to be displaced backward. This makes the skull larger, and, by retaining the flap of bone with twisted wire sutures, it allows the skull to enlarge with relief of endocranial tension. The technique of the operation performed by the author differs from that of Hudson in that the bone flap includes both sides of the skull posteriorly, and in cases in which pressure seems to be below the tentorium, the dura is separated below the insertion of the tentorium posteriorly and opened below that point.

6. **The Monthly Incidence of Disease.**—H. A. Brown states that in the first six months of the year there are found excesses in the mortality from the exanthematous diseases and diseases of the respiratory tract, with suicide and violent deaths increasing in number during the spring and early summer. During the summer and fall there is an increase in the number of deaths from malaria, diseases of the digestive tract, and congenital debility, with a rapid increase again in November and December in the number dying from diseases of the respiratory tract.

10. **Problems of Obstetrical Practice.**—By W. W. Chipman. (See MEDICAL RECORD, November 23, 1912, page 962).

11. **Carcinoma of the Uterus.**—By T. S. Cullen. (See MEDICAL RECORD, November 23, 1912, page 962.)

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## Journal of the American Medical Association.

*December 21, 1912.*

1. Pulmonary Tuberculosis as an Obstetric Complication. C. S. Bacon.
2. Intradural Root Anastomosis for the Relief of Paralysis of the Bladder and the Application of the Same Method in Other Paralytic Affections. C. H. Frazier and C. K. Mills.
3. Predementia Præcox. W. R. Dunton, Jr.
4. Cyanosis in Dementia Præcox. W. B. Cornell.
5. Medical Education in South America. J. Frank.
6. A Series of Infants Fed on a High Percentage of Albumin Milk. F. C. Neff.
7. Relation of the Infant Welfare Movement to Pediatrics. T. B. Cooley.
8. The Properties, Uses and Indications of the Various Carbohydrates Used in Infant Feeding. H. D. Chapin.
9. The Practical Import of Recent Work on Hysteria. T. A. Williams.
10. The Diagnosis of Tuberculosis of the Kidney in Very Early and Very Advanced Cases. T. Rovsing.
11. The Use of Tuberculin in the Treatment of Urogenital Tuberculosis. G. S. Whiteside.
12. Decapsulation of the Kidney. D. S. Fairchild.
13. Recent Advances in Our Knowledge Concerning the Causes of Glycosuria. T. B. Futcher.
14. The Surgical Treatment of Chronic Seminal Vesiculitis by Vasostomy (Belfield Operation). R. H. Herbst.
15. Paranoid Type of Insanity with Jacksonian Convulsions; Syphilitic Cerebral Pachymeningitis; the Microscopic Findings. N. S. Yawger.
16. Glycosuria Among the Insane. C. Emerson.
17. Two Cases of Acute Primary Cholecystitis Presenting Unusual Features. N. W. Jones.
18. Unilateral Optic Atrophy and Contralateral Hemiplegia Consequent on Occlusion of the Cerebral Vessels. W. B. Cadwalader.
19. Certain Physical Signs in Scoliosis of Lesser Degree. E. A. Gray.
20. Plea for Surgical Intervention in All Umbilical Hernias. J. W. Kennedy.
21. A Report of Some New Chemical Analyses of Urinary Calculi. M. Kahn and J. Rosenbloom.
22. Coccidioidal Granuloma. Report of the Nineteenth Case in California. F. H. Bowles.
23. Acute Reflex Disorders Caused by the Cinematograph. G. M. Gould.
24. Irritation from Iodin and Mercury on the Skin. S. R. Karpeles.
25. Chancre Developing Four Days After Salvarsan Injection. M. Rosenthal.
26. Prostatectomy Knife. E. H. Siter.

4. **Cyanosis in Dementia Præcox.**—W. B. Cornell notes that a cutaneous cyanosis is found in a large majority of cases of dementia præcox, most frequently and intensely in the catatonic form, next in order in the hebephrenic form and then in the paranoid form. It is part of a generalized vasomotor disturbance consisting in a phlebostasis of unknown origin. Cyanosis is variable within large limits even in the same patient. Cyanosis offers a valuable diagnostic sign in differentiating dementia præcox from manic-depressive insanity, imbecility, hysteria, constitutional inferiority and occasionally the organic psychoses.

6. **High Percentage Albumin Milk in Infant Feeding.**—By F. C. Neff. (See MEDICAL RECORD, Vol. 81, page 1121.)

7. **Infant Welfare Movement.**—By T. B. Cooley. (See MEDICAL RECORD, Vol. 81, page 1161.)

8. **The Various Carbohydrates in Infant Feeding.**—By H. D. Chapin. (See MEDICAL RECORD, Vol. 81, page 1160.)

13. **The Causes of Glycosuria.**—T. B. Futcher states that it must now be accepted as positively proved that not only the pancreas but also the adrenals (chromaffin system), thyroid, parathyroids, and pituitary have a very important influence on carbohydrate metabolism. Although lesions of the pancreas have been found in a considerable percentage of cases of diabetes, it is now clear that morbid changes in that organ will not explain all cases, even when alterations in the islands of Langerhans are also taken into account. The essential and primary disturbance may be in one or another of the ductless glands. There is observed a marked correlation of the internal secretions of the ductless glands. Thus the internal secretions of the adrenals (chromaffin system) and pancreas mutually retard the action of each other. The most recent theory concerning carbohydrate metabolism is that first advanced by Zuelzer and now supported by many physiologists. According to this view, one of the important functions of the adrenals is to "mobilize" or set free the carbohydrates in the liver and possibly in other storehouses also. Under normal conditions, however, this influence is counteracted or exactly balanced by the hormone contained in the internal secretion of the pancreas, and there occurs a constant normal flow of sugar from

the liver. When, however, the chromaffin system is for any reason overstimulated, as it may be through the sympathetic nervous system, there is an overproduction of the "accelerator" hormone of the adrenals; the "retarding" hormone of the internal secretion of the pancreas is more than counterbalanced, the glycogen in the liver is rapidly "mobilized" or set free and a hyperglycemia and glycosuria result. A similar result occurs in the cases of so-called pancreatic diabetes. Here the adrenal hormone may be normal in amount, but owing to the pancreatic disturbance the pancreatic hormone is absent or diminished and again the adrenal hormone is enabled to mobilize the glycogen of the liver. A somewhat analogous explanation may subsequently be found to explain the glycosurias in pituitary and thyroid diseases. The theory that hyperglycemia results from deficient consumption or oxidation of glucose in the tissues has fewer adherents than formerly. It may still be shown, however, that Cohnheim's theory is in part correct. At present the trend of opinion is in favor of the view that the hyperglycemia and glycosuria are dependent on overproduction of sugar in the liver.

**14. Vasostomy in Chronic Seminal Vesiculitis.**—R. H. Herbst has found that symptoms referred to the bladder and prostate are frequently relieved by vasostomy. In certain cases vasostomy has relieved symptoms ascribed to an enlarged prostate, just as did castration years ago. Vasostomy is especially indicated in cases in which one has to deal with either a partial or a complete occlusion of the ejaculatory ducts. This operation, Herbst says, gives a fairly high percentage of cures in a class of cases which must either be relegated to the incurable heap or be subjected to a far more dangerous and difficult surgical procedure.

## The Lancet.

*December* 14, 1912.

1. The Pharmacotherapy of Pneumococcus Infections. Sir Almroth E. Wright in conjunction with W. P. Morgan, L. Colebrook, and R. W. Dodgson.
2. Aural Vertigo (Non-Suppurative): A Clinical and Therapeutical Study. R. Lake.
3. Further Observations on the Pneumothorax Treatment of Phthisis. C. Lillingston.
4. A Case of Complete Eradication of Extensive Recurrent Cancer Affecting Both Breasts and Axillæ; Death 15 Years Later from Heart Disease and Dropsy at the Age of 82 Years. R. C. Lucas.
5. Mucocele of the Anterior Ethmoidal Cells. E. C. Alles.
6. A Case of Acute Nasal Catarrh Due to a Gram-negative Bacillus Resembling the "Distemper" Group of Organisms. A. H. G. Mackintosh.
7. A Method of Rapidly Exterminating Pediculi Capitis. A. Whitfield.

**1. Pharmacotherapy of Pneumonia.**—Sir Almroth E. Wright, W. P. Morgan, L. Colebrook, and R. W. Dodgson report the results of their experiments with Morgenroth's drug, namely, ethylhydrocupreinhydrochlorate. These experiments bring out very clearly that, while the ordinary antiseptics are polytropic and expend their energy wastefully upon the blood fluids, we have in ethylhydrocupreinhydrochlorate a chemical agent which exerts its effect practically undiminished in serum. The experiments bring out that dilutions of 1 part of lysol in 500 parts of serum, dilutions of 1 part of creosote in 2,500 to 12,500 parts of serum, and dilutions of 1 part of guaiacol in 2,500 parts of serum fail to kill the pneumococcus; while dilutions of 1 part of lysol in 62,500 parts of water, dilutions of 1 part of creosote in 300,000 of water, and dilutions of 1 part of guaiacol in 1,500,000 of water, all kill the pneumococcus. They bring out further that dilutions of 1 part of ethylhydrocupreinhydrochlorate in 400,000 parts of serum kill the pneumococcus, and that dilutions of 1 in 800,000 inhibit the growth; and that the antiseptic values of the serum dilutions of the drug do not differ appreciably from the values obtained for watery solutions. Finally, they show that ethylhydrocupreinhydrochlorate exerts its bactericidal effect specifically upon the pneumococcus.

**2. Aural Vertigo.**—R. Lake states that chronic progressive middle-ear deafness and arteriosclerosis are the most frequent causes of aural vertigo, and fortunately one finds that a large amount of benefit can be derived from the use of drugs in these cases, though by no means all of them are capable of this relief. Operative interference is justified, and where it is used it should be uniformly successful. The author places small reliance on the rotary and caloric reactions. He also omits the so-called group in which increased labyrinthine pressure is said to exist. He is convinced that one is able to make one's diagnoses and one's prognoses in the class of case under consideration equally well without the employment of the above tests. With regard to increased intralabyrinthine pressure, although he has operated on at least twenty cases of labyrinthine vertigo where there had been no perforation into the labyrinth—fourteen of them where there had been no previous suppuration, and the rest where there had—he has only twice seen any fluid on opening the labyrinth. In these two cases there was a considerable amount of fluid; one of them also had an extremely large external semicircular canal, apparently four or five times greater than normal. But even then he is not prepared to say that these cases contained fluid under pressure. But it is rather difficult, indeed, to understand, from a purely mechanical point of view, how fluid can be retained under pressure in such a nonvascular bony cavity as the labyrinth.

**3. The Pneumothorax Treatment of Phthisis.**—C. Lillingston notes that in such a chronic and capricious disease as phthisis an estimation of the value of any form of treatment is worthless unless the number of patients treated is considerable, and the improvement effected has stood the test of time. His experience, therefore, with eighteen patients treated for periods ranging from six months to three and one-half years, is insufficient *per se* to build pretentious claims on, and he briefly touches on the following points. The disease was in the third stage and active, and the prognosis was very bad in every case. Yet the disease is either arrested or is undergoing arrest in thirteen. Five patients are either dead or dying; but the author believes that the treatment has prolonged their lives. More valuable are L. Spengler's results, for they have stood the test of a longer probation period. He has excluded all recent cases, confining himself to those in which a pneumothorax had been induced nine months to four years earlier. As evidence of arrest of disease he adopted the following conditions: Absence of pyrexia, cough, and expectoration; if the last be present, it must not contain tubercle bacilli. Fifteen patients fulfilled these conditions, and were also capable of a full day's work. In twelve of these the prognosis before the operation was almost hopeless, and in the remaining three it was very bad. Spengler considers that these results are a satisfactory answer to the objection that though a pneumothorax may cause temporary improvement, it does not often enough produce permanent results to warrant the risk of operation.

**5. Mucocele of Anterior Ethmoidal Cells.**—E. C. Alles states that mucocele of the ethmoidal cells alone, without any of the other sinuses being affected at the same time, is rare. Again, acute or subacute purulent sinusitis of the ethmoid is more frequent than are chronic degenerative inflammations. As to the causes of a mucocele there are two: it may be either caused by a chronic catarrhal inflammation of the mucous membrane lining the sinus, the ostium of which has become previously occluded; or it may be due to an occlusion of one of the ducts of the glands of the lining mucous membrane, and consequent dilatation of it. The contents of a mucocele consist of epithelial cells, blood corpuscles, and fluid containing mucin.

## British Medical Journal.

*December* 14, 1912.

1. Cardiolysis. Sir Robert M. Simon.
2. An Intracellular Parasite Developing Into Spirochetes. Found by the Jelly Method of *in Vitro* Staining in Syphilitic Lesions and in the Circulating Blood During the Secondary Stages of the Disease. E. H. Ross.
3. The Parasites Recently Found in Syphilis. E. Jennings.
4. On Certain Bodies Found in Syphilitic Lesions Demonstrated by the Jelly Method. S. R. Moolgavkar.
5. The "Infective Granule" as the Initial Phase in the Life-History of a Hemogregarine. H. Henry.
6. On the Influence of Meteorological Conditions on the Development of Trypanosoma Rhodesiense in Glossina Morsitans. A. Kinghorn and W. Yorke.
7. Salvarsan in Pernicious Anemia. H. Hobhouse.
8. The Cytology of the Blood in Passive Immunity. J. S. C. Douglas.

1. **Cardiolysis.**—Sir Robert M. Simon notes that in 1902 Brauer suggested that, in cases in which it was suspected that the free action of the heart was hampered by adhesions of the pericardium to parts outside it, it would benefit the patient to remove some of the bony and cartilaginous framework of the thorax. He supposed that the precordial part of the chest wall would thereby become more flexible and oppose less resistance to cardiac expansion. It is probable, however, that the relief to the heart thus given may lie less in the softening of the wall against which it beats than in the removal of tight and tough adhesions to the fixed points like the ribs, and that relief may be expected from the removal of these adhesions.

2. **An Intracellular Parasite Developing into Spirochetes.**—By E. H. Ross. (See MEDICAL RECORD, December 28, 1912, page 1171.)

4. **The Parasites of Syphilis.**—By E. Jennings. (See MEDICAL RECORD, December 28, 1912, page 1171.)

5. **Certain Bodies Found in Syphilitic Lesions.**—By S. R. Moolgaokar. (See MEDICAL RECORD, December 28, 1912, page 1171.)

6. **Meteorological Conditions and Trypanosomes.**—A. Kinghorn and W. Yorke conclude that the developmental cycle of *Trypanosoma rhodesiense* in *Glossina morsitans* is to a marked degree influenced by the temperature to which the flies are subjected. High temperatures (75-85 deg. F.) favor the development of the parasite, while low temperatures (60-70 deg. F.) are unfavorable. The first portion of the developmental cycle can proceed at the lower temperatures, but for its completion the higher temperatures are essential. The parasites may persist in the fly at an incomplete stage of their development for at least sixty days under unfavorable climatic conditions. These observations afford an adequate explanation of the extremely long latent periods of trypanosomes in *Glossina* which have occasionally been observed by various workers. The relative humidity of the atmosphere has apparently no influence on the development of the trypanosome in *Glossina morsitans*.

7. **Salvarsan in Pernicious Anemia.**—E. Hobhouse reports the case of a woman who had been very anemic for more than a year and exceedingly ill in the previous summer, but who had improved under large doses of arsenic, and been fairly well during the winter. Her blood picture in October, 1911, showed no signs of pernicious anemia. On May 23 she was very ill with daily fever up to about 101 deg. F., was almost unable to sit up or take nourishment, and had loud hemic murmurs over the cardiac area; her color was the characteristic lemon yellow. A blood smear showed typical pernicious anemia. On May 31 salvarsan 0.3 gram was injected intramuscularly. Within three days benefit was apparent, though local pain was severe for about a week. In four days the murmurs had almost disappeared, and the patient was much stronger. Blood examination on June 4 showed a distinct improvement. On June 14 the improvement had continued, and the same dose was again injected; this was followed by a sharp reaction; the temperature rose to 101 deg. F. The patient looked exceedingly ill; the pallor and hemic murmurs returned, and she developed a large patch of dry pleurisy over the right back. This condition lasted a few days, when the fever slowly subsided and uninterrupted recovery set in.

## Berliner klinische Wochenschrift.

*December 2 and 9*, 1912.

**The Falling Birthrate.**—Wolf states that for the past year the diminution of the German birthrate has been a theme of earnest discussion. The same status in France was long ago attributed to the two child system, which in turn is being replaced by the one child system. The result is that deaths surely outnumber births. It is therefore evident that a three child system should rectify the present alarming condition in that country. The alternative comprises the entrance into the country of alien blood. The relationship between falling birthrate and tendency to urban life is unmistakable, for it is in cities that the two and one child systems take their origin. In the midst of this state of affairs we find optimists who say that the decrease in births will run parallel to the decrease in deaths which is coming about as a result of improved education and sanitation. The urban tendency will also provoke a reaction towards rural life. Much may be done by averting the high summer nursling mortality of cities, etc. But the condition is so serious that it merits the most active interest on the part of all patriots. The author cites a recent work on the subject which he has had published in which he seeks a solution of the problem in a rationalization of the sexual life. He shows that many factors are hostile to an increased birthrate, while but few favor it. Statistics show that compulsory education is a sure provocation of race suicide. The illiterates of Russia and Roumania and the Balkan States contribute most heavily to the population. In many instances the influence of religion is similarly apparent. Roman Catholicism, although it has lost this power in France, is less compatible with race suicide than Protestantism in many localities outside of France; while the Protestants have more children than the atheists. Under the last term the author appears to group the socialists. The claim that prosperity means fewer children is, according to the author, a transposition of cause and effect. Fewer children bring about prosperity. An alarming tendency has been noted of late to race suicide in the rural districts of Prussia. The law will seem to be assured that countries with heavy and rising birthrates must come to repeople in time those with falling birthrate. In closing the author states that the Jewish birthrate is also falling off in countries where the general birthrate declines.

**Röntgen Rays in Gynecology.**—Cohn sums up an article as follows: The treatment of hemorrhages from the uterus with the rays is attended in many cases with good results and is to be thought of in all cases save those which depend on malignancy. The treatment is safe and may do away with much operative intervention. The untoward results of Röntgen castration are milder than those of operative castration; they never comprise psychoses and invalidism. The action of the rays upon hemorrhages is attributable to their influence upon the ovaries, which naturally bring about a determination of blood to the uterine mucosa. The myomatous uterus constitutes no exception. The rays are especially indicated in climacteric hemorrhages. That they have any direct action on uterine myomata has not been proven.

**Hypophysis Extract in Eclampsia.**—Krakauer tested the oxytocic action of this substance in a case of eclampsia in a young multipara of excellent muscular development. She had never been ill and the convulsions appeared without any warning. When first seen she was unconscious. It was only learned that she was not known to be pregnant over seven months and had a pendulous abdomen. Taken to the hospital, she received narcotics and chloro-

form, the spasmophilic state being extreme, along with wet packs. There were no signs of labor, and no fetal heart sounds were audible. Attempts were made to induce labor by rupturing the membranes and passing a soft catheter into the uterus. Dilatation was extremely slow and after 12 hours there had been but few pains and the os would only admit the finger tip. Hypophysis extract was now injected. The woman being still unconscious, the action of the pains was not very sensible, but in two hours the child was expelled dead. When consciousness was regained the woman, who had not expected her confinement for two or three months, could not realize what had happened. The child was mature, and it was impossible to fix the time of its death.

**Herpes Zoster and Varicella.**—Heim refers to von Bokay's series of cases in which varicella appeared to manifest itself as a zosteroid eruption. This series numbering nine cases extended over a period of twenty-one years. In one episode a patient with zoster appeared to have introduced varicella into a hospital, an adult developing the disease. Such cases may, of course, represent coincidences. The author, however, has seen a similar episode. A woman developed a typical thoracic zoster. Ten days later one of her children fell ill with chicken pox, and six days later another child who had not been exposed to the mother until four days later also developed the disease. These two incubation periods seem too brief for varicella and it is certain that the second child could not have contracted the disease from the first. The shortest interval under ordinary circumstances is placed at fourteen days, but freakish cases have reduced this to eight, so that the ten-day period for the first child and the twelve-day period for the second present no absolute difficulty if we decide that in both instances the virus proceeded from the mother's zoster. The mother had never had varicella. The zoster in these cases may show irregularity of distribution, and also come out in successive crops. It has been noted that zoster epidemics have occurred in communities simultaneously with chicken pox.

**Influence of Hormones on the Opsonic Index.**—Strubell has studied the staphylococcus index with especial reference to various drugs including some of the hormones (thyreoidin, pancreatin, adrenalin, etc.). This behavior may also be studied after the extirpation of some one of the ductless glands. He gave thyreoidin to rabbits and dogs and often noted a marked lowering of the index; but when the drug was given to normal human subjects in small doses the index improved. An injection of adrenalin in animals lowers the index. The same result followed extirpation of the adrenals. Pituitrin and parathyreoid in both lowered the index but several of the author's assistants who took pancreatin by the mouth showed a very considerable increase of the opsonic index. In the clinic we see in diabetes as a result of the failure of certain hormone action an exquisite lowering of the opsonic defence to the staphylococcus. This is not due to the increase of sugar in the blood. Others appear to have noted the action of pancreas substance in increasing the index. Our previous knowledge of drugs from this viewpoint is limited to the facts that iodine and bromine lower while arsenic increases the index.

**Gallbladder Peritonitis without Perforation.**—Wolff relates three cases of this sequence of which there appear to be two varieties according as the escaped bile is relatively normal or purulent. The gall bladder is distended and its contents seep through the more or less altered wall. A stone (or several) usually causes the obstruction which makes possible the conditions. On account of the great infrequency of these cases, one may be cited in detail: Three years after typhoid fever a patient was received at the clinic with symptoms of acute peritonitis. Diagnosis having been perforative appendicitis laparotomy was performed, whereupon over a liter of what appeared to be bile escaped. There was a moderate degree of parietal and visceral peritonitis. The appendix, although healthy, was extirpated and search was then made for a perforation in the biliary passages. The gall bladder was distended, the walls appeared normal, no stones were to be found within and the serous coat was not implicated in the peritonitis. Although no perforation could be found in the bile passages a drain was placed beside them. The wound healed, however, without any escape of bile and without other incident. The second case was similar to the first. In the third case the patient died of postoperative paralysis of the intestine. Distention of the gall bladder was shown to have been due to calculi. A most careful research failed to show perforation anywhere including the stomach and intestine.

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## Münchener medizinische Wochenschrift.

*December* 3, 1912.

**Total Gangrene of the Breast in Puerperal Sepsis.**—Bamberger cites figures to show the infrequency of gangrene in the puerperium as a part of the picture of sepsis. Of 80 cases collated recently, representing all upon record, 58 were seated in the lower extremities. There was one case of gangrene of the breast (nipple), sacrum, external genitals, and heels. In another of typical puerperal scarlatina that was circumscribed gangrene of the breast. Finally a case of puerperal mastitis which had become chronic, terminated in gangrene. In the author's case, seen in consultation, there was severe sepsis, which was called puerperal only because it appeared after delivery. There were no antecedents pointing to puerperal infection. The symptoms were limited to high temperature and left mastitis. On account of the great swelling and pain an incision was made but no pus escaped. When the consultant arrived the patient in addition to high temperature showed dyspnea. Heart appeared to be intact however. Nothing abnormal about the genitals save slight tenderness over left parametrium. The entire breast was blue-black, without fluctuation. The infant had not been placed on the breast as even so early in the puerperium the patient had been feverish. The breast was at once amputated although with not much hope of saving life. The gangrene was arrested and the sepsis proceeded to a fatal termination. No autopsy is mentioned. The assumption had naturally been that embolism developed in the mammary arteries in connection with occult sepsis from absorption through open uterine sinuses of some toxic-infectious material. Labor had been easy, spontaneous.

**Dysbasia Angiosclerotica.**—Pick has treated a number of cases of intermittent limp associated with cold feet. In all there were thirteen patients whom he was able to control for at least four weeks. Many observations of this affection are defective because the patients were seen but once or twice. The cases were typical, occurring in men past middle life with the usual causal factors of nicotinism, syphilis, gout, lead, cold, etc., and more or less collateral evidence of arteriosclerosis. Treatment consisted in the exhibition of iodine vapor, which does not irritate the stomach or cause iodism. The benefit from this resource appears to be prompt. The circulation of the legs is unburdened by respiration under lowered pressure. During this treatment the ankle pulse reappeared. There was as a whole much amelioration of symptoms, but to speak of permanent benefit in such a chronic affection would be premature. One almost certain result of such treatment is to prevent angiosclerotic gangrene.

**Self-cure of Appendicitis.**—Deppe in the course of laparotomy for various pelvic disorders has placed on record six cases of self-healed appendicitis. His operations

were undertaken for uteroovarian conditions, in which the appendix is often found diseased and is hence removed. In some of his six patients there was no history pointing to appendicitis. In two hardly any appendix remained (so-called self-amputation); in two others it was adherent to the abdominal or pelvic wall but no longer itself inflamed, having become sealed up by the peritoneal inflammation around it. The remaining two cases are peculiar in that absolutely no trace of an appendix could be found. There were scars in the cecum at the point of insertion. The only explanation is that a gangrenous appendix had sloughed and had slowly been absorbed in the peritoneal cavity. The author holds that pregnancy-contributes somewhat to the self-healing of appendicitis.

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### Deutsche medizinische Wochenschrift.

*November 28, and December 3, 1912.*

**Treatment of Psoriasis.**—Jungmann refers to the necessity for dietetic supervision but this seems to differ much with the physician's bias. It may be that any diet which will modify the metabolism possesses some element of benefit. A meat eater might improve on a vegetarian diet, an obese patient on a reduction cure, a gouty subject on an antilithic regimen, etc. In the same manner a complete Carlsbad or Kissingen cure may act by modifying the metabolism. Physicotherapy as a rule is not especially well tolerated and some forms as the *x*-ray are often injurious. Arsenic, the most useful drug, demands careful study to get good results. There is danger of intoxication and also of abstinence symptoms after prolonged use. Next in order come iodides and thyroidin, which may be given in combination with arsenic. The number of local remedies known to be able to modify favorably the lesions is now very large. Some of the best are able to cause constitutional symptoms when used too long or too copiously, and also if not watched may cause severe local reactions. From this viewpoint tar is the least injurious and is also cheap, having no drawback save the odor. Another dependable remedy and one always useful when not too many lesions are present is white precipitate. The stronger, more irritating, and disfiguring substances like chrysarobin and pyrogallol should be used in selected cases—in circumscribed discoid forms where it is desirable to secure relatively prompt temporary results. The *x*-ray has about the same range, in that it may exert power temporarily over certain lesions but cannot be used universally month in and out. The various other forms of radiation as the Finsen light, uviol lamp, quarz lamp, etc., have power over the lesions, but are not adapted to general use.

**How Long Does Typhoid Fever Remain Infectious?** Schumacher states that he does not refer under this heading to the carrier problem, else the answer might be "throughout the carrier's life." The cases he considers give off bacilli for a longer or shorter period after which they become sterile. During the active period some measures must be taken to protect the public by suitable disinfection, so that an arbitrary interval is usually adopted. The author has followed up cases presumably sterile after the final official examination and has in certain cases seen bacilli reappear in the urine and persist therein for a number of weeks. He would keep typhoid convalescents segregated and controlled for at least six weeks after deverfescence.

**Bone Formation in a Cicatrix.**—Kumaris relates a case of this type. A vigorous young man after a fall upon the right knee had a series of abscesses in the thigh—upper, outer aspect. When first seen by the author one extensive scar remained as evidence of the process itself and of several operations performed from time to time. The painful, sensitive character of the scar suggested a coming recrudescence of the process. The tissues were therefore laid open and bone was found in the center of the cicatricial tissue. This fragment, 4 cm. long and of finger thickness, was not a sequestrum. There appeared to be no evidence of misplaced periosteum or of possible migration of a bit of live bone during operation. A histological study seemed to show that a true metaplasia of bone had occurred in normal scar tissue.

**Plague Pneumonia in Brazil.**—Rau states that twelve years ago the bubonic plague was unknown in the city of Santa Maria, in Southern Brazil. First introduced from India by way of Rio Janeiro, it has for four years past become epidemic. Two cases first occurred in one house, one of which ended fatally. No new cases were reported for some weeks, when other sporadic instances occurred in other quarters of the town, and became numerous but without epidemic features. In most of the affected houses rats also died of the disease in large numbers. All the human cases showed typical bubonic plague, with mortality of fifty per cent. Almost over night the situation now altered, and at the height of the winter season. In an unsanitary bakery a boy fell ill of severe pneumonia, dying in three days of pulmonary edema. A few days later the two women who had cared for the boy fell ill and died of the same malady. Numerous near relatives of the women then sickened and died. A priest was also a victim. The type of disease was so severe that one death occurred within 24 hours. There were in all eighteen victims, with mortality of 100 per cent. The symptoms were of severest pneumonia, causing death in from two to five days of edema of the lungs. No patient showed any buboes save one who was seen to have swollen cervical lymphnodes. Yersin's plague serum had no influence over the disease. The cadavers decomposed rapidly. In the house which sheltered the first victims two hundred dead rats were found. The transmission appeared to be effected through the saliva and sputum. In limiting the spread of the disease strict quarantine and formalin disinfection were employed. Exposed persons were isolated for ten days. Prophylactic injections of Yersin serum were used in certain cases and a temporary plague hospital was established. The public was ordered to destroy rats and mice and use insect powder. The evidence showed that there is no room for a dualistic hypothesis, as the pneumonic form was derived directly from the bubonic form.

**Anaphrodisiacs.**—Frank considers this subject in connection with a new synthetic which contains bromine and borneol. The number of drugs having anaphrodisiac tendencies is very large and they have been arranged in five groups, viz., 1. Adynamics. Under this head are groupted all so-called antispasmodics and anodynes which lessen the excitability of the nervous system. Here belong bromides, camphor, heroin, morphine, atropine, hyoscyamine, physostigmine, cannabis indica, conium, lupulin, and numerous others which possess slight activity. 2. Hypnotics. All the members of this group, notably veronal, sulphonal, etc. 3. Antipyretics and sedatives. Here belong many coal tar derivatives as well as salicylic acid. 4, 5. Here belong, in theory at least, all substances which alter blood pressures and chest secretion. Bürgi's principle of potentizing one drug with a small quantity of another, a synergist, may be employed in prescribing anaphrodisiacs. Von Noorden, testing Bürgi's theories, found that a small quantity of codeine would activate veronal, as would also phenacetin. Naturally this principle should be of great help in building up synthetics, and one of the newest veronal modifications is a synthetic composed chiefly of this substance or at least its urethane group with small quantities of the active groups of codeine and phenacetin. In like manner an anaphrodisiac may be formed by combining bromine with borneol. A desirable preparation of this sort is especially indicated to control sexual excitement with perverse sexual inclinations.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### LIFE INSURANCE COMPANIES.

Strictly speaking, insurance of all kinds is mutual as the claims are payable out of the premiums paid by the insured. This has been true since the earliest and simplest forms and is illustrated in benefits paid by the middle-age guilds and still earlier in the methods practised by the traders of ancient Rome. Level premium life insurance was introduced by the "Society for the Equitable Assurance of Lives," also a purely mutual affair now known as the "Old Equitable" of London. This company was established in 1762 and encountered much distrust of the newly devised method of level premium insurance, men preferring the older and known associations, even though their settlements were far from satisfactory and their careers doubtful. The "Old Equitable" went on, nevertheless, and led the way towards charging adequate premiums and maintaining sufficient reserves, and as a result of this course survives to this day.

Insurance companies, according to the general acceptance of the term, however, are classified as mutual, stock, mixed, industrial, and assessment.

Mutual.—A mutual life insurance company is one in which there is no capital stock, all of the gains and savings belonging and going to the policyholders. The policyholders also elect the trustees and in this way control the management of the company. Companies formed on this plan are able to insure their policyholders at net cost and it is, perhaps, for this reason that they are so favored and successful and that they carry very considerably over half the insurance in force.

Stock.—A stock company is one having capital stock. The shareholders elect the trustees and control the company. Moreover, all the profits inure to the benefit of the shareholders. By comparing the mutual and purely stock companies it is seen that the ultimate cost of insurance ought to be less in the mutual than in the stock companies, for it is possible on the mutual plan only to provide the policyholder with protection at net cost.

Mixed.—While the so-called mixed companies have a combination of the features of both stock and mutual companies, they are really mutual in essential particulars. They have a capital stock owned by the shareholders who elect the trustees and so control the management. The shareholders are only entitled to a small percentage of the profits and the balance goes to the benefit of the policyholders. This is a common and often successful form of life insurance company.

Industrial.—This form of insurance was established in England in 1854 by the issuance of industrial policies by the "Prudential Assurance Company of London," in addition to the writing of ordinary insurance. In 1875 the "Prudential Insurance Company of America" was started for the purpose of writing industrial and ordinary insurance. The essential difference between industrial and ordinary insurance is in the method of premium payments, the premiums in the former being payable weekly and collected by agents at the houses of the insured, whereas in the latter the premiums are payable quarterly, semi-annually, or annually at the offices of the companies. Naturally, the premiums for industrial insurance are high on the same principle that coal costs more when bought by the bucket. The company itself may be mutual, stock, or mixed.

Assessment or Fraternal.—An assessment company is one in which there is an association of individuals, each of whom agrees to pay an assessment on the death of a member, or at regular intervals in order to keep a mortuary fund up to a certain sum. Thousands of associations on the assessment plan, as applied to life insurance, were organized in Great Britain in the eighteenth century, a large proportion of which succumbed. The origin of fraternal beneficiary societies in America dates back to 1868 when John Upchurch, a mechanic, conceived the idea of founding the "Ancient Order of United Workmen." Many of these societies have been the means of affording insurance to men who were unable to met the expense of policies in the regular level premium companies. On the other hand, a large number of them have collapsed and these misfortunes have brought hardship to the families of members of old standing. It is not difficult to discover the reason for the failure of some of these associations.

In the early days of these fraternal or assessment societies when most of the members are young, the mortality among the policyholders is naturally very light. Consequently only a small part of their premiums are required to pay the death claims of the few policyholders of recent or older standing. As time goes on, however, each group of policyholders has to supply the means of paying the claims of their predecessors and must look for the payment of their own claims to the contributions of their successors. In other words, there are no adequate reserves, so the life of the society depends on the infusion of "new blood," and, therefore, possesses no element of stability, especially so as many of the younger and healthy members withdraw and seek insurance elsewhere rather than pay for the excessive premiums due to the gradually increasing death rate among the older members. A number of the societies are undergoing a process of readjustment and are now operated by charging the current cost of insurance at the various ages and at the same time attempting to provide for an emergency fund to take care of any deficiencies that may have been created in the past and to relieve the cost at the older ages.

The chief difference between assessment companies and those previously described is that any one of the latter, properly managed, is conducted on methods which provide reserves so adequate that it can terminate its career, as far as new business is concerned, at any time and still have sufficient funds to carry out all of its outstanding contracts.

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**Some Experiences in Medical Selection for Life Insurance.**—Dr. S. T. McDermith of Denver has recorded some of his experiences in medical selection for life insurance, which he gathered during the past fifteen years in the capacity of medical director of a fraternal insurance order. The gist of this paper is to point out and emphasize how much more skilled in the difficult art of weeding out unsatisfactory applications, the medical examiner of the present is than the examiner was at the time that Dr. McDermith commenced his duties as the medical director of a life insurance organization.—*Denver Medical Times.*

# Book Reviews.

Ein Weiterer Beitrag zur Glaukom-Frage. By Dr. W. Wagner (Odessa), Berlin. Price 1.50 M. Berlin: Verlag von S. Karger, 1912.

The author describes glaucoma as he himself experienced it. The glaucoma occurring in his left eye, was apparently complicated by a retrobulbar neuritis 30 years after the first attack and the eye became blind. An acute attack of glaucoma occurred in the right eye 31 years after glaucoma began in the left eye. The author goes on to discuss the theories of glaucoma and the operative treatment. The brochure, which comprises 47 pages of text, forms an interesting contribution to the literature on glaucoma.

Practice of Medicine. A Manual for Students and Practitioners. By Hughes Dayton, M.D., Associate Attending Physician, New York Hospital; formerly Instructor in Physical Diagnosis, Cornell University Medical School, New York. Second Edition, revised and enlarged. Price $1 net. New York and Philadelphia: Lea & Febiger.

This is probably the smallest "Practice of Medicine" in the market. This branch of the medical curriculum does not lend itself to "compend" treatment as well as some other subjects do. The volume may be of service as a guide to the medical student in his perusal of larger and standard works; but the very scanty consideration of the treatment of disease renders it of little use to the practitioner.

On the Oxidations and Cleavages of Glucose. Yeast Glucose, a New Glucolytic Ferment. By Victor Birckner, University of California Publications in Physiology. Vol. 4, No. 16. Berkeley: University of California Press, 1912. Price 75 cents.

In this very careful study the author gives first a systematic review of recent advances in the knowledge of glucose oxidations and cleavages, and then describes the isolation of a new ferment from beer yeast which has peculiar and distinctive properties.

Der Kohlehydratstoffwechsel und die innere Sekretion. Für Forscher und Praktiker. Von Dr. Paul Höckendorf, Spezialarzt für Stoffwechselkrankheiten, Berlin-Charlottenburg. Price, marks 2.40. Berlin: August Hirschwald, 1912.

The author discusses the conditions under which glycogen is stored in the liver and the mechanism which controls the periodic liberation of certain amounts of this substance, as well as the formation of sugar from fat and proteid. These considerations lead to an interesting presentation of the probable derangements underlying the condition of diabetes.

The Chemic Problem in Nutrition. (Magnesium Infiltration). A Sketch of the Causative Factors in Disorders of Nutrition as Related to Diseases of the Nervous System. By John Aulde, M.D. Formerly Assistant Physician, Out-Patient Department, Jefferson Medical College Hospital; Demonstrator of Physical Diagnosis and Clinical Medicine, Medicochirurgical College, etc. Illustrated with four plates. Price $3.00. Philadelphia: John Aulde, M.D., 1912.

While the author modestly terms the present contribution "a sketch" it is in reality a closely printed volume of over four hundred pages, and covers the etiology and treatment of most of the diseases known to medical men, as well as some other conditions, such as "laziness," not usually considered in books devoted to the ills of the flesh. The problems both of causation and therapy, are however, much simplified by the author's view that in most cases it is an abnormal reaction of the body fluids and tissues with consequent derangement of the chemical balance of its inorganic constituents that is at fault, and that the conditions necessary for health can readily be restored by a few therapeutic measures which are described in detail. The introductory chapters contain elaborate chemical and physiological discussions which are used as a basis for the conclusion that a reversal of the body's reaction from alkaline to acid leads to a disturbance of the normal relationship between the calcium and magnesium content of the tissues. As a result the elimination of calcium is unduly favored, while magnesium accumulates, and a highly injurious state of "magnesium infiltration" supervenes, carrying in its train the potentiality for the development of almost any disorder. A chapter on "The Food Problem" with dietary tables shows how easily quite unsuspected amounts of magnesium may be ingested, with ensuing derangements of digestion, of assimilation, and of the nervous system. The treatment of appendicitis, for example, accordingly is summarized as follows: "1. Neutralize acid excess by means of alkaline-saline medication; 2. Counteract the tendency to clotting in the lymph channels and glands by the employment of an alterative, calcium sulphide; 3. Avoid Epsom salts (magnesium sulphate), and promote magnesium dissociation by the employment of its known antidote, calcium salts; 4. The presence of bacterial flora in excess in the intestine should be controlled by remedies which act through the medium of the nervous system, in the form of colloids, or by symbiosis." Practically the same treatment is recommended for pleurisy, pneumonia, pericarditis, peritonitis, meningitis, arthritis, earache, headache, neuralgia, tonsillitis, neuritis, goiter, mastitis, skin diseases, etc. The book is also provided with a very extensive index.

Kohlenhydratkuren bei Diabetes. Von Dr. Georg Rosenfeld in Breslau. Sommlung zwangloser Abhandlungen aus dem gebiete der Verdauungs und Stoffwechsel-Krankheiten, herausgegeben von Dr. A. Albu in Berlin. IV Band, Heft 3. Price, marks 1.70. Halle A. S.: Carl Marhold, 1912.

Rosenfeld discusses all the carbohydrates that can be made use of in the treatment of diabetes, giving for each "cure" a résumé of its method of application and an opinion in regard to its value. The greatest amount of space is devoted to the potato cure, which he deems of doubtful benefit, and to the oatmeal cure which he considers highly serviceable in properly selected cases.

Autointoxication and Disintoxication. An Account of a New Fasting Treatment in Diabetes and Other Chronic Diseases. By Dr. G. Guelpa (Paris). Translated by F. S. Arnold, B.A., M.B., B.Ch. (Oxon.). With an introduction by the translator and a chapter on the use of the method in the treatment of morphine addiction by Oscar Jennings, M.D. (Paris). Price $1.25. New York: Rebman Company.

Dr. Guelpa founds his system of "disintoxication" on two elements of treatment of universally recognized value, viz., abstinence from food and purgation. This he carries out with great thoroughness, and claims that in this way remarkably beneficial results are obtained in a wide variety of conditions, notably diabetes, rheumatism, albuminuria, and gout. The régime consists in taking each day for two, three, or four days an entire bottle of well-known laxative water, abstaining from all food during this time, and drinking as freely as desired of water, weak tea without milk, toast and water, fruit infusion, etc. Evidently recognizing the *a priori* nature of much of the reasoning—by means of which he seeks to explain the effects of this treatment (such for example as the statement, unsupported by evidence, that the sensation of hunger is caused by the presence in the body of more or less toxic effete matters), the author admits that its justification may best be found in the results obtained when it is applied, and to this end many case histories are cited. In all of these the effect was excellent, and Dr. Jennings closes the volume with a chapter in which the method is lauded highly in the treatment of morphinism.

A Treatise on Diseases of the Hair. By George Thomas Jackson, M.D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University; and Charles Wood McMurtry, M.D., Instructor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University. Illustrated with 109 Engravings and 10 Colored Plates. Price $3.75. Philadelphia and New York: Lea & Febiger, 1912.

This is the first authoritative work on the diseases of the hair that has appeared in the English language. It is well adapted for the use of the general practitioner and may be recommended to the latter as a volume which will greatly assist him in the treatment of a large group of cases that regularly present themselves. The authors have drawn freely from their own ample experience and from the exhaustive treatises of Sabouraud and Darier. The first division of the work discusses the anatomy, physiology, and hygiene of the hair. In the second division are described the essential diseases of the hair. The third section deals with the inflammatory diseases of the hair follicle. The parasitic diseases of the hair are described in the next section, while the last division of the work discusses those diseases of the hair secondary to diseases of the skin. The volume contains a large number of helpful illustrations, some of which are colored. There can be little doubt that this book fills a distinct gap in English medical literature.

# Society Reports.

## THE PRACTITIONERS' SOCIETY OF NEW YORK.

*250th Regular Meeting, Held November 1, 1912.*

Dr. John W. Brannan, President, in the Chair.

**Mental Tests.**—Dr. Charles L. Dana read this paper (see page 1).

Dr. Starr said he wished to express his gratitude to Dr. Dana for having gotten together these tests and put them into form in which they gave us a definite method to follow. He had used these different tests but they had not been in definite form. That was the great advantage of the Binet method which he had used in private work but found too long for clinic work. One of its advantages lay in the fact that you could demonstrate to a family that a member of the family was really below a certain rating of intelligence when the members of the family told you of the extreme mental ability of the child or older patient. He had found these tests also of a great deal of service, especially in the last five or six months, in contrasting the mental progress, as he could tell whether the child had improved or not from one examination to another. He was very glad to have these tests of Dr. Dana's and hoped that Dr. Dana would print them in definite form so that we could have them for use.

He agreed with Dr. Dana that a majority of psychasthenics showed a defective grade of high mentality and thought the psychasthenic type was a definite type. He had a word to say about the association tests of Jung, which he did not think had given him any definite knowledge about mental processes, nor had he seen any benefit from them in a therapeutic way. He thought that in the hands of certain men definite results had been obtained in gaining insight for control, but he did not believe that the results had been on account of the method but because of the personality of the physician. That was, he thought, the secret of their success. He considered psychoanalysis a new word for old methods. He believed the rest cure of Dr. Weir Mitchell was successful because it was carried out by Weir Mitchell, and the benefit was gotten from Dr. Mitchell personally. His personal influence tended to put that patient on a new mental plane different from his old and ordinary one. That was why the rest cure had done good in Dr. Mitchell's hands, but had not been as successful in the hands of others. He said he had no faith in the interpretations of dreams.

Dr. Horace Frink said that it was unnecessary for him to state that he believed in psychoanalysis, though, as Dr. Starr remarked, the personal influence of the physician was doubtless an important factor in the treatment. This, however, did not diminish the importance of the analysis itself, nor did it adequately explain the therapeutic results that were obtained. The diagnostic value of the association test was not great, yet in conditions of dementia præcox or manic depression, epilepsy or hysteria, etc., the results of an association test, considered with the other clinical findings, were occasionally of some aid in making a differential diagnosis. The chief use of the test was not in making diagnoses or determining intellectual levels, but in investigations as to the state and content of the emotional life. Thus in some cases the form of the test as a whole was significant. For instance, certain individuals reacted by defining most of the stimulus words. Such a test, occurring in a person of average intelligence, gave evidence of a feeling of inferiority—the test person was afraid of being considered stupid, he was not satisfied with the impression he was making and was therefore impelled to affect mannerisms, high sounding phrases, and a behavior not natural to him in order to raise himself in the estimation of his friends and acquaintances. A second type was characterized by emotional exaggeration. The test person gave frequent reactions such as the following:

Work—Detestable.
Hat—Enchanting.
Music—Sublime.
Noise—Maddening.

From a test of this type, showing a strong emotional accentuation of personal judgment, one inferred that the test person was compensating for an emotional void. That is, the individual's life was empty, so to speak, and failed to offer sufficient occasion for emotional discharge. To compensate for this want the person unconsciously put more feeling than was demanded into all activities which offered any opportunity for effective expression. One would expect this type of test in a married woman in the forties who had no children, little love for her husband, no particular interests, and nothing to do. An examination of the individual reactions of the test gave information as to the main emotional trends of "complexes" which dominated the test person's life and furnished the motive power of his neurosis. It was common knowledge that, in certain criminal cases, the representatives of the law sought to determine the guilt or innocence of the suspected person by suddenly confronting him with a reproduction of the scene of the crime. If he behaved with perfect calmness and appeared to feel no particular emotion the assumption of innocence was favored. If he betrayed excitement, fear, became confused, spoke incoherently, or was unable to speak at all, he might be considered guilty. If we could study the reactions of our patients by confronting them with various reproductions of reality it was obvious that much of interest might be learned. This could not be done, however, but in the association test we had a very good substitute for such a method of procedure. The words of the test corresponded to a part of some reality, and the behavior of the test person toward each word was an index of what his behavior would be toward the reality itself. If a person was under strong emotion he might have considerable difficulty in speaking, might for a short time be unable to speak at all, might speak incoherently, and, later, might have little or no recollection of what he had said. In a quite similar way the test person would react to those words of the test which connected with emotionally accentuated complexes. To such words his reaction would be delayed, or fail entirely. Or, it might be superficial or senseless, or, on going over the test a second time he might not be able to recall correctly what his response had been. By this and other signs the physician was able to determine which words of the test connected with faulty complexes. In some cases one needed only to put these "complex indicators" together to get a very definite idea of the main pathogenic trends of the patient's life. But usually it was necessary to require the patient to associate the words of the test before one could be sure to what themes the different reactions referred.

In going over the results of the test in this way it would usually be found that most of the reactions could be grouped as referring to one or another of four or five themes, such as death, religion, a loved person, etc. We would then be able to say that the person under examination had a "death complex," an "erotic complex," a "separation complex," or whatever the case might be. In this way the test showed what complexes were at work in the patient. The task then remained of discovering the content of those complexes and its relations to the symptoms and of bringing the whole into the patient's consciousness. Upon this the most difficult and lengthy part of psychoanalytic work, the therapeutic result depended. Here the test was of little assistance and one depended more upon "free association," the analysis of dreams, and similar measures. The work of Rosanoff on association was interesting but could not be looked upon as bearing upon the question of the value of the association as an analytic measure, and, in the speaker's opinion, neither supported nor disproved anything Jung had said.

Dr. Brannan asked whether the tests were practical or easily enough done for use in schools, in the work of Dr. Maxwell, etc., and if the methods had helped in curing Dr. Dana's patient with epilepsy of four years' duration which was found to be of hysterical character.

Dr. Dana, replying to Dr. Brannan, said that the purpose of these tests was just what Dr. Brannan suggested. The backward children in the schools could be sent to clinics and tested. There were places in New York where this was done. There was a strong movement to try to segregate the 2,000 or 3,000 children in the schools, who were defective. It was claimed that we should not spend our money on them and take up time from teaching healthy children, but that the teaching of retarded children should be in special institutions. The same type of cases were found in the courts and in the clinics; they grew up and became a menace and the State had to take care of them, so it seemed to him right for physicians and public-spirited people to make themselves especially familiar with the problem. The case of epilepsy referred to was only a recent one, but these cases did get well sometimes. The tests did help the diagnosis and treatment.

**Preventive Inoculations of Typhoid Fever.**—Dr. John W. Brannan read this paper (see page 10).

Dr. Meara said his experience had been limited. He had vaccinated himself and a few patients. There had been very slight reactions. The number of patients he had vaccinated had been too small to draw any conclusions from. He asked if in children there was any contraindication to inoculation.

Dr. Biggs said he considered it very unfortunate that the word vaccination had been used in this connection. There

had developed lately considerable opposition to vaccination against smallpox, and this was especially so in the West. It was unfortunate to have anything else associated with the word in the popular mind.

Dr. Park said in answer to a question that the "sensitized" vaccine had been tried on animals but had not given as marked an immunity. Most of the experiments, however, had been made with sensitized dead bacilli. There had not been enough cases of inoculation with the sensitized live bacilli done as yet to show anything conclusive. There was nothing to show, however, that the antibodies produced after injection with living gave any different results from those injected with the dead bacilli. Appreciable agglutinins did not always develop after an inoculation. This did not necessarily indicate that other antibodies had not been formed." He had just been doing some tests with diphtheria. Different patients developed after immunization different kinds of antibodies. This was true for many forms of immunity. They had found in the Health Department that smallpox immunity in exceptional cases might only last nine months, and so they vaccinated employees every year. Recently typhoid infection entered a community which had been immunized ten months ago. Three out of seventy-five immunized persons developed typhoid fever. A doctor and an orderly who had not been immunized developed the disease. An interesting case was furnished by one of the young women in the research laboratory by accident. She was transferring typhoid culture through a pipette from which the cotton had been left out and she sucked some of the bacilli into her mouth. They had tried to clean and sterilize her mouth and gave her vaccine, but she had the disease. The question came up as to immunizing her. They had tried to do so by vaccination but were unable to prevent the disease. Dr. Park said there was no reason, in his opinion, for not inoculating children.

He said he did not think there was anything in the suggestion that the periods between the inoculations should correspond to the ordinary duration of the disease. The antibodies, once developed, should last for months. It was only when antibodies obtained from an animal of another species are introduced that they were quickly eliminated. At the Health Department laboratories the organisms were killed by exposure to a temperature of 60° C. for one-half hour after sterilization. Carbolic acid was added to .25 per cent. The vaccines were standardized by the "Wright" method. Attempts had been made to treat typhoid carriers by vaccination but they refused to continue the treatment. Meader of Syracuse had carried out this treatment in three cases for long periods of time. Two had recovered. He had kept the inoculations up for about one year in these cases before they recovered. The one who had not recovered did not produce abundant antibodies.

Dr. Smith asked if attempts had been made to free typhoid carriers by inoculation.

Dr. Starr asked if the reaction to inoculation was greater in children under twelve or fourteen than it was in adults.

Dr. Brannan said that the surgeons of the English Army had found that vaccination of typhoid carriers caused only temporary disappearance of the bacilli. He said that he had had no experience with children but that he would be inclined to give them smaller doses. He believed that ultimately smaller doses would be given to adults and that they would be extended over a longer period of time. One of the speakers at the Congress on Hygiene at Washington thought that we should try to spread the inoculations over a time corresponding to the duration of the disease. He found that the word vaccination caused considerable apprehension. The nurses thought that their arms were going to be scratched and made sore as in vaccination against smallpox. When they learned that the inoculation consisted of a small hypodermic injection there was no further trouble.

He considered it very important to use only vaccine of standard strength, such as that prepared by the Board of Health. He knew of several instances in which perfectly competent bacteriologists had used vaccines prepared by themselves and the reactions were very severe. Dr. Gibson had spoken of the importance of having house staffs treated. It had been the intention to have this done in all the hospitals, but there was great reluctance among the staff about accepting it. At Gouverneur, Harlem, and Fordham all of the men had been inoculated and some had marked reactions. At Bellevue not more than half of the staff had been inoculated to date. At all of the hospitals all sorts of excuses were put forward, such as ambulance duty, vacation, etc., but as a rule they did not prevail. A physician at Hartford told him that at the Hartford Hospital the staff as a body refused inoculation.

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

*Stated Meeting, Held November* 14, 1912.

Dr. William Shannon in the Chair.

**Relation to and Influence Upon Respiration, During Childhood, of Normal and Abnormal Dental Arches.**—Dr. Arthur Zentler presented this communication. He stated that the question as to whether adenoid growths were the cause or the results of constricted dental arches, though much debated, had not been satisfactorily solved. It had been shown that proper breathing was interfered with wherever adenoids were present and that constricted dental arches were almost always an accompaniment of this condition. A normally developed set of dental arches preincluded a normally developed maxilla and mandible. Normally developed mandible and maxilla were only found where teeth were existent and were in proper occlusion and where occlusion existed there normally developed dental arches would be found, notwithstanding the proportion of the width of the arch to the size of the teeth. The size of the teeth was not infrequently not in proportion with the stature of the individual, nor with the shape or the size of the head. In proportion as the occlusion was more or less perfect the dental arches would be more or less well developed and the more nearly normally developed the dental arches were the less would the nasal septum deviate and the larger would be the nares and, in consequence, the nasal breathing would be better. The nasal septum might be straightened and the nares also made proportionately larger either by a rapid or a slow process of widening of the dental arches. In deciding which of the two factors should be selected many things should be considered. Whether the widening was the result of space produced between the two maxillary halves in opening the maxillary suture, or whether it was the result of an expansion of such portions of the palatal bone as were less resistent between other teeth was not definitely established, but it appeared that the latter was the case. It was certain that no ill effects resulted from either process and at once obvious that the nasal respiratory passages must be improved as a result of this operation. If adenoids were not removed at all or only after the sixth year constricted dental arches were almost invariably found. Wherever adenoids existed in infancy and were removed at an early age one was almost sure to find well-developed dental arches. However, it was possible to find constricted dental arches where there were no adenoids and it could not be said that because this child had no adenoids it could breathe properly. The same factors which influenced the development of the dental arches also influenced the development of the muscle controlling the upper lip. The upper lip would be found drawn up and held there, and closing the lips was not a natural process and was not done during sleep except by applying special bandages. The muscles of the cheek in such cases acted as compressors and did not allow the maxilla and mandible to develop laterally. At the same time keeping the mouth open changed the normal position of the tongue when in repose, so that instead of resting flat against the roof of the mouth and thereby contributing to the lateral development of the maxillary halves, dropped to the floor of the mouth, assuming an elongated shape and contributing to the forward moving of the lower teeth, thus augmenting the contraction of the lower arch already brought about by the muscles of the cheeks and lower lip The open mouth habit would not disappear after the removal of nasal obstructions until the anatomical deformity was corrected. The efficient application of constant force by the use of adequate apparatus, which did not hurt if properly constructed and adjusted, would spread the dental arches to their normal shape until the teeth had come into normal occlusion, the lips closed normally and the child breathed normally through the nose. Barring general conditions which might be contraindicative it was never too early to remove adenoids and for the same reason it was never too early to bring the dental arches into shape. The earlier the teeth were brought into proper occlusion the easier and more permanently would they be kept so. The need of retaining the teeth in their new position was in direct proportion with the early age during which they were moved. If the early teeth were in faulty occlusion the permanent teeth would also be in the same faulty position. An attempt to bring about proper occlusion should be undertaken at almost any reasonable age, but the result would be in proportion to the time when it was undertaken. Most of the abnormalities became worse with the

advance of age. The pediatrist was in the position to sound the warning and should do so as soon as he noticed the "habitual open mouth" in the infant. Dr. Zentler called attention to the good influence of breast feeding in aiding the natural development of the maxilla and mandible. Later in the childhood the kind of nourishment that gave ample exercise through need of thorough masticaion would add materially to the development not only of the bones supporting the teeth but also to all bones connected with them. The age of three or four years was none too early to anchor appliances on the teeth. Dr. Zentler presented casts and photographs showing the results of faulty occlusion.

**Diagnosis and Treatment of the Inflammatory Affections of the Nasal Accessory Sinuses in Children.**—Dr. Seymour Oppenheimer presented this paper. He said that sinusitis occurred much more frequently in children than was generally supposed, and that this applied not only to older children but to small children and to infants. It seemed possible that many cases of meningitis were the result of unrecognized inflammation of some of the sinuses. In early life they varied greatly in size and shape and were surrounded by much softer bone than at a later period of life. There was also a much more profuse development of the lymphatic and vascular systems and the mucosa was in the most intimate relation with the osseous tissue, so that a slight inflammation of the former must produce some pathological change in the latter. Dr. Oppenheimer had not found chronic sinusitis as frequent in the child as in the adult, but acute and subacute sinusitis were common. Many instances of post-nasal catarrh in children were but symptoms of some inflammatory changes of the adjacent sinuses. Inflammatory affections of the ethmoid cells were most important in the child, these cells and the antra being more frequently involved than the frontal and sphenoidal sinuses. In the child the middle turbinate body was essentially a portion of the ethmoid area just as in the adult, although its anterior end was thinned out, was small, and ran parallel to the perpendicular palate, so that the lower border was deflected inward. As the internal wall of the orbital fossa formed the external boundary of the ethmoid the possibility of orbital symptoms as a complication of ethmoid infection was apparent and this relationship was important because of the extreme thinness of the ethmoidal-orbital wall. Previous to the seventh or eighth year the frontal sinus was not usually developed, though it might be present as early as the fifth year. At the eighteenth year its full development was accomplished. Its anatomical and surgical relations were like those of the adult except that its relation to the cranial cavity on account of the thin posterior wall was most intimate and this should be considered in relation to inflammatory processes. The sphenoidal cavity might be noted as early as the third year and was well developed by the seventh year. Its lateral walls were largely within the cranial cavity and this should be considered in the relation to the development of obscure cases of basal meningitis, also its intimate relations laterally and superiorly with the internal carotid artery and cavernous sinus. The recognition of sinusitis in the child was more difficult than in the adult, as the symptoms were more obscure and rarely characteristic. The frequency of the infectious diseases in childhood and the concomitant inflammatory changes in the nasal mucosa explained why the sinus should be involved during this period. In the newborn sinusitis might occur as a result of the infection by the vaginal discharges from the mother or as a result of instrumental delivery and the resultant purulent inflammation which involved the soft osseous antral walls. This was true sinusitis and not a tuberculous caries. As a rule affections of the antrum occurred during second dentition and infrequently errors in the development of the teeth might act as an exciting cause of the empyema. The ethmoid labyrinth in the older child was especially liable to become involved in all the inflammatory affections of the nasal mucosa and in coryza and the contagious diseases of children these cells were affected in almost every instance and a continuation of the infection might account for suppurating ethmoiditis in later life. In the recognition of these conditions transillumination was practically valueless in children. The use of carefully made *x*-ray plates was the most valuable diagnostic medium they possessed. The presence of frequent headache should aways occasion suspicion of sinus inflammation. In acute sinusitis pain of an aching character was almost invariably present at some time during the course of the inflammation. In chronic cases it was very frequently absent unless secretions were retained under pressure. A marked symptom was the disappearance of pain with the beginning of a free nasal discharge. The presence of discharge, especially if unilateral and purulent or semi-purulent in character, was always of diagnostic value, especially if intermittent. The location of the discharge was of great diagnostic value in determining which sinus was affected and this was determined as in the adult. Aprosexia and disturbance in the general health were more or less inevitable concomitants of chronic purulent sinusitis. In the so-called strumous child, where there was purulent nasal discharge, excoriated upper lip and marginal bleparitis, purulent sinusitis of the antrum and ethmoid cells usually existed; and while serious organic changes were not present when they did occur the ethmoid cells were usually the ones involved. Serious orbital complications might ensue as a result of pathological changes in the correlated vascular sinuses. In the milder forms a symptom of diagnostic value was edema of the eye-lids. In inflammatory processes of the maxillary antrum it was not uncommon to find involvement of the osseous structures of the superior maxilla. In the majority of cases of pansinusitis the ethmoid system was usually the primary source of infection. Frontal sinus involvement did not occur so often in the child as in the adult and was recognized as in the adult. Purulent sinusitis was the most difficult of recognition as it was practically always combined with ethmoidal changes and the symptoms were not characteristic. Severe occipital headache and dizziness were suggestive of retained secretions in this sinus. The discharges were scant and usually inspissated in the nasopharynx, or along the posterior portion of the vomer and floor of the choanæ and frequently the condition could not be recognized until exploration of the interior sinus had been made. This should not be done until the presence of other sinus affections of a purulent character had been eliminated. The treatment of sinusitis in the child should always aim to destroy as little tissue as was consistent with obtaining permanent results, and the intranasal mucosa should be preserved as far as possible. Palliative treatment would cure the majority of cases of acute sinus inflammation. Warm alkaline sprays and a weak solution of epinephrin solution should be used to reduce the congested mucosa. In the severe cases rest in bed, laxatives, or other measures that the individual case might demand should be instituted. Hot vapor inhalations and the use of negative pressure to drain the sinuses had a distinct sphere of usefulness. The general health should be attended to if satisfactory results were to be secured from treatment of the local condition. In operative interference it should be emphasized that as little as possible of the turbinal tissue be removed. When possible drainage should be obtained through the natural openings, and to effect this it was proper to remove enough osseous tissue at such points as might be required. It should be emphasized that any enlargement of the turbinated bone was a serious obstacle to the cure of inflammatory changes in any sinus until this was relieved. Free drainage in this connection also meant free nasal respiration and must be taken into consideration on the surgical treatment of these cases. It was essential that when pus was found it should be evacuated and granulations and necrosed tissue be removed. In conclusion Dr. Oppenheimer said that it had been his experience that in young children radical operative procedures for the relief of purulent sinusitis were rarely indicated and were not as productive of satisfactory results as the more conservative intranasal procedures, and while the same might be said of older children, yet, as they approached the adult type, the same indications for treatment and the same operative procedures applied as in the adult.

Dr. John McCoy said that accessory sinus disease in children was more common than was supposed, occurring frequently, but not diagnosed. Adenoids were largely responsible for these conditions as they were not only a focus of infection, but produced swelling of the tissues of the nose and indirectly were responsible for deviations of the septum; these conditions in turn caused deficient drainage of the accessory sinuses. The adenoids also interfered with drainage. Dr. McCoy, when he operated upon a child for adenoids, did not assure the parents that the child would breathe through his mouth after the operation, but, on the other hand, he told them that the child would probably have to have some of the turbinate tissue removed and also the palatal arch corrected by a dentist. Of the acute cases of sinusitis, 95 per cent. could be cured by rest in bed, attention to diet, laxatives, and, locally, adrenalin spray. In chronic cases the main question was one of drainage, and any obstruction to drainage from the frontal ethmoid or sphenoid region must be removed. Occasionally an external radical operation had to be resorted to. In conclusion Dr. McCoy reported two

cases of sinusitis that resulted in brain abscess, one was cured, and the other died.

Dr. Percy Fridenberg said that this subject was of great practical interest to the ophthalmic surgeon, who was not infrequently confronted with cases presenting ocular and orbital conditions which might be due to suppuration in one or more of the accessory cavities. It was important for diagnostic purposes to be able to exclude such involvement of the sinuses. The possibilities for ocular and orbital involvement were accentuated in infants and small children by the large size of the eye-socket as compared with the rest of the face, the intimate spacial relation with the neighboring sinuses, and the extreme richness and complexity of the vascular communications. Fortunately there were factors of safety in the sinuses of children, namely, their smallness and comparatively free drainage direct into an unobstructive nasal passage, and the fact that there had not been sufficient time for chronic inflammation with resultant changes in the mucosa, causing obstructive growths or bone disease. The rôle of adenoids was not to be denied. The mere mechanical obstruction caused in turn turbinate swelling, venous engorgement in the pharynx, spheno-maxillary, and ptergoid regions sufficient to bring about a decided disturbance of the orbital circulation and to produce exophthalmus or edema of the lids. The pain of accessory sinus disease might be simulated by syphilitic periostitis or osteomyelitis of the frontal, superior maxillary, or nasal bones. This specific disease as well as tuberculosis should always be borne in mind. Gonococcus infection in the new born might travel up through the lachrymal sac and conjunctiva and infect the orbit; in all cases of blennorrhea in the new born treatment of the nasal involvement was of prime importance. Where there was evident pus collection in or about the globe it was not wise to make incisions through the lids; little if anything could be gained by stabbing at random. The prime requisite in operative work was free drainage and that generally meant the removal of the ethmoid labyrinth and breaking through widely into the nasal cavities. If that were done they would not have relapses, protracted course of healing, or intracranial complications. In very young children they should strive to preserve the orbital margin on account of its importance for growth and development of the eye socket which had such an important bearing on facial symmetry. In the treatment of incipient, milder, or catarrhal cases of sinus involvement, Dr. McCoy had obtained excellent results with dry superheated air, charged with vapor of iodine, menthol, coryfin, chloral, and other medicaments. He used a fine eustachian or frontal sinus catheter and made a local application. Quinine and antipyrine internally as well as locally were of great value in shrinking up swollen membranes. The rational early treatment would prevent complications and make extensive surgical procedures infrequent if not unnecessary. The greatest aid to early treatment was early diagnosis and this depended on careful and frequent examinations. Routine inspection of the nares in children should be as familiar and usual a step as the examination of the ears. If this were the case they would not be told that these affections were rare.

Dr. Ernest Danziger believed that the high palate and the deviation of the nasal septum were caused by nasal obstruction, not only in the form of hypertrophic Luschka's tonsil, but by a general hypertrophy of the lymphoid tissue of the pharynx, and that associated with the latter condition there was a hypertrophy of the mucous membrane of the lower turbinals. Acute accessory sinus disease had a tendency to recover spontaneously, and it was only in the severe forms that a diagnosis was made. There were two causes which operated to make an acute sinus disease become chronic, namely, interference with drainage, and a constitutional predisposition, such as a luetic or tuberculous tendency. In the latter cases, general hygienic, dietetic or specific treatment was as important as the institution of local measures.

Dr. Edward A. Bogue said that but little had been said regarding the age at which operation should be performed for adenoids. Adenoids if carefully looked for were often found during the first year of life and the result was that the lungs, and consequently the thorax, were imperfectly developed. A large proportion of mouth breathers were more prone to have children's diseases than those who breathed normally. It was within the province of the pediatrist to watch for adenoids. If they were not removed until the tenth year or later the mouth would not close, and further treatment was necessitated.

Dr. Godfrey R. Pisek said that he believed that most of the children suffering from sinusitis came to the pediatrist first, and that in going over the dispensary reports one would find that this diagnosis was rarely made. The diagnosis might be easily made in some cases; others were obscure and were mistaken for typhoid fever or incipient meningitis. In these cases one should make the diagnosis by exclusion, watching with great care for any discharge that came posteriorly from one nasal orifice, and they should take note of any pain that began in the frontal sinus. Dr. Pisek thought that they should not harp too much on adenoids as the cause of defective dental arches because there were other factors in the etiology, such as the nutritional, the environment, and certain vicious habits as the sucking of false nipples, pacifiers, etc. It was important that the deciduous teeth be properly cared for; if they were decayed it was right that they should be filled.

Dr. Charles Gilmore Kerley said that he had met with these cases of accessory sinus disease but rarely, seeing perhaps only two or three such cases in a year. He felt confident that the deformities in the dental arches occurred during the first eighteen months of life, and that adenoids were present in the great majority of these children. He agreed that thumb sucking and kindred habits tended to produce or establish a deformity in the vault of the pharynx. Dr. Kerley emphasized the point that deformity of the dental arches had a bearing on morbidity and that poorly nourished children were more liable to develop faulty dental arches. The presence of adenoids added to the continuance of the condition and assisted in establishing the deformity in the dental arches.

Dr. Henry Koplik thought that both the papers were excellent and were a help to both the pediatrist and the specialist. These deformities were found in infants, *in utero*, and this congenital element was very often overlooked. There were other etiological factors which should be taken into consideration, such as rickets and other diseased conditions of the bones. There was a question in his mind as to whether mouth breathing had anything to do with the formation of dental arch deformities. Abnormal conditions such as adenoids were rare at birth and only developed later on. He did not believe that the mechanical element played as great a rôle as was ascribed to it. There was no doubt but that many of the cases of sinus disease were overlooked or only discovered accidentally; this conclusion was borne in upon him because no attempt had been made to formulate the symptoms by means of which the condition could be discovered. The physician and the surgeon should co-operate in the care and diagnosis of these cases.

Dr. Francis J. Quinlan did not think that the last word had been uttered on this subject. He was inclined to think that the lymphatic tissues played a very important part in the etiology of this condition. Deviations of the nasal septum could be brought about by these lymphoid masses. He was not convinced that he had seen many of these cases of sinusitis.

Dr. Frank E. Miller discussed in detail the relation of arches, normal and abnormal, and of accessory sinuses in relation to respiration and voice values. He showed that a comparison of the vowel sounds as uttered by children with normal dental arches and nasal conditions with those uttered by children with defects would demonstrate conclusively the deleterious effects of deformities on voice values. He called attention to the effect of tracheotomy on the nasal development from loss of voice vibrations upon them, especially the three turbinated bones; septum, dome, hardpalate, teeth, epiglottis, and thyroid cartilage were of special value in the production of the seven limited overtones on the fundamental chordal tone in the reinforcing of vocal resonance. Dr. Miller cited the case of a child with monotone voice that was due to tonsillectomy, where the surgeon cut off the entire posterior pillar; gradually the child recovered a fair speaking voice, but preferred to speak on one pitch. Injuries to the palato-pharyngeal and palato-glossi muscles were most serious as they impaired palate and tongue action in song and speech construction, as well as overtone. In adenoid removals if the posterior pharyngeal wall was injured and dragged off it could be replaced and made to grow back, but should the superior constrictor muscle be injured, the phonetic value of the upper register of the voice would be altered.

Dr. Miller introduced Dr. Holmes Merton who, at his suggestion, had made the charts which were exhibited and which showed the accurate location and geography of every vowel and consonant; every acoustic resonator for seven overtones of the voice; the anastomosis of nerves supplying phonetic efforts, muscles, nerves, etc., for nose, tongue, mouth and throat; the entire vocal system based on units of voice construction, and the autonomy of the unit of distribution of force in voice construction or analogous action and construction of the palato-pharyngei from the superior constrictors of the uvula, and to that of the vocal cords themselves.

Dr. Linnaeus E. LeFetra said that he had never made a diagnosis of nasal accessory sinusitis in children, and he was glad to have heard the paper calling attention to the condition. Undoubtedly many cases of persistent "colds" in the head were due to inflammation of some of the sinuses. Most of these cases, he believed, got well under conservative treatment. Adenoids should be operated upon early of they produced any symptoms; he had removed them from infants as young as one week. The high arched palate often appeared in babies but a few weeks old, and in such cases there must be a congenital or hereditary factor, since there was not time for the adenoids to produce such a condition.

Dr. William W. Carter said that any extensive injury to the posterior pillars certainly injured the voice, and it was his opinion that in many of these operations there occurred an injury to the posterior pillars. He believed that when the tonsil was properly enucleated that the pillars were not injured and that the voice was not impaired, but, on the other hand, was frequently improved by such an operation.

Dr. Pisek called attention to the work of Dr. Jellenek of Prague, who advocated carrying out an examination of the voices of school children, and if he found that the singing voice was abnormal he carefully looked for the cause.

Dr. Sidney V. Haas believed that high and abnormal dental arches were not in themselves the result of adenoids in most cases. Special stress should be laid on the statement that high dental arches might be entirely normal and were so when the "bite" was perfect.

Dr. Thomas S. Southworth emphasized the importance of looking for these cases of accessory sinus disease; if these cases were not borne in mind, as well as many other conditions like otitis media and pyelitis, for instance, they would not be discovered. As a rule these cases of accessory sinus disease were pointed out to them by the rhinologist; he made the diagnosis of acute or subacute inflammation of these sinuses. Dr. Southworth reported the case of a boy who had had for some years a persistent anemia, and the anemia would not yield to any of the methods of treatment employed. It was evident that there was present a type of toxemia which resulted from the changes that were going on in the accessory sinuses and the child was now about to be operated on. In the subacute cases it was also probable that these patients were "germ carriers" and caused repeated outbreaks of infectious colds in their families.

Dr. Walter Lester Carr said that these vicious circles referred to could not be helped. There was no doubt but that they recognized more cases of sinus disease than formerly, and this was because they were now looking for them.

Dr. Herman Schwarz said it should be remembered that they could have nasal deformities without the presence of adenoids. There were a number of cases operated upon which were not improved. They were examining the noses of the children at Mount Sinai Hospital, and would make a report on the subject later.

Dr. Eli Long emphasized the importance of making a routine examination of the children who presented themselves for accessory sinus disease.

Dr. Zentler said he did not intend to confer the impression that adenoids must be present in all cases of narrowed dental arches. He did not know exactly what caused them. He believed that breast feeding would help to develop the dental arches. If adenoids were present in infants they should be removed in order to obviate any disturbance of the dental arches. He had frequently emphasized the importance of the care of the teeth in children. Dr. Pisek's point was a good one; if the decidual teeth were decayed or were not in proper occlusion, one did not do his duty unless he advised filling them and correcting the defective arches.

Dr. Oppenheimer referred to the splendid work that was being done by the orthodontist. He believed that there were factors other than adenoids present which were responsible for the narrowing of the dental arches. In certain cases of nasal obstruction the correction of this defect had no influence whatsoever on the dental arches. In many of these cases the employment of nasal and nasopharyngeal surgery was unnecessary and inadvisable. He had been surprised to note how a deflection of a nasal septum of considerable degree was overcome by the lateral spreading and widening of the maxillary arch. As to the controversial subject of a rapid or slow spreading of the dental arches he could not speak with authority. The frequency of nasal accessory sinus disease in children depended entirely on the alertness of the observer. One should expect to find inflammation of the accessory sinuses quite frequently, as the mucous membrane lining these cavities was continuous with that lining the nasal passage and the eustachian tube, and it was not rational to expect that the inflammation would be strictly limited to the nasal interior. He believed that careful examination of the nasal chambers in children would reveal many subacute and latent infections.

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## CLINICS, DEPARTMENT OF PUBLIC CHARITIES

Calendar, January, 1913.

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| **MONDAYS** | | | |
| *City Hospital* | Surgery | Dr. Dawbarn | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. McPhee | 2:00 P.M. |
| *Cumberland Street Hospital* (Brooklyn) | Surgery | Dr. Pallister | 2:30 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |
| | Rhinology and Laryngology | Dr. Stewart | 4:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Gynecology | Dr. McNaughton | 9:00 A.M. |
| **TUESDAYS** | | | |
| *City Hospital* | Surgery | Dr. Collins | 10:30 A.M. |
| | Ophthalmology | Dr. Gilfallau | 2:00 P.M. |
| | Dermatology | Dr. Bronson | 2:30 P.M. |
| *N. Y. City Children's Hospitals & Schools*, Randall's Island | Orthopedics | Dr. Ogilvy | 10:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Gynecology | Dr. Burnham | 1:00 P.M. |
| | Ophthalmology and Otology | Dr. Warner | 3:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M. |
| *Kings County Hospital*, (Brooklyn) | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| | Genito-urinary Surgery | Drs. Morton and Fraser | 2:00 P.M. |
| *Coney Island Hospital* | Surgery | Drs. Fisk and Bogart | 10:30 A.M. |
| | Medicine | Drs. Hall and Nash | 3:30 P.M. |
| **WEDNESDAYS** | | | |
| *City Hospital* | Surgery | Dr. Dawbarn | 9:00 A.M. |
| | Genito-urinary Surgery | Dr. Fuller | 2:00 P.M. |
| | Obstetrics | Dr. Dorman | 2:30 P.M. |
| *Metropolitan Hospital* | Surgery | Dr. Harrington and Ostrom | 2:30 P.M. |
| Jan. 8 | Dermatology | Dr. Dearborn | 2:30 P.M. |
| Jan. 8 | Rhinology and Laryngology | Dr. Foster | 2:30 P.M. |
| Jan. 15 | Dermatology | Dr. Dearborn | 2:30 P.M. |
| Jan 15 | Genito-urinary Surgery | Dr. Carlton | 2:30 P.M. |
| Jan. 22 | Medicine | Dr. Rankin | 2:30 P.M. |
| Jan. 22 | Medicine | Dr. Hathaway | 2:30 P.M. |
| Jan. 22 | Rhinology | Dr. Foster | 2:30 P.M. |
| Jan. 22 | Neurology | Dr. Howard | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Maloney | 11:00 A.M. |
| *Kings County Hospital* (Brooklyn) | Dermatology | Dr. Winfield | 1:00 P.M. |
| | Orthopedics | Dr. Truslow | 9:00 A.M. |
| | Orthopedics | Dr. Napier | 2:00 P.M. |
| *Coney Island Hospital* | Pediatrics | Drs. Beck, McQuillian, Pendelton and Van Wart | 3:30 P.M. |
| **THURSDAYS** | | | |
| *City Hospital* | Medicine | Dr. Evans | 9:00 A.M. |
| | Medicine | Dr. Brooks | 2:30 P.M. |
| | Gynecology | Dr. Stearns | 2:00 P.M. |
| *Cumberland Street Hospital* (Brooklyn) | Gynecology | Dr. Burnham | 1:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M. |
| | Rhinology and Laryngology | Dr. Stewart | 4:00 P.M. |
| *Kings County Hospital*, (Brooklyn) | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Obstetrics | Dr. Judd | 10:00 A.M. |
| | Otology | Dr. Alderton | 1:00 P.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| | Pediatrics | Dr. Parrish | 4:00 P.M. |
| *Coney Island Hospital* | Gynecology | Drs. McEvitt and Mills, Mayne and Rankin | 10:30 A.M. |
| | Laryngology and Rhinology | Dr. Tucker | 1:30 P.M. |
| | Surgery | Drs. Murphy and Lack | 3:00 P.M. |
| **FRIDAYS** | | | |
| *City Hospital* | Laryngology and Rhinology | Dr. Dougherty | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Abrahamson | 9:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Surgery | | |
| | Ophthalmology and Otology | Dr. Pallister | 2:30 P.M. |
| | | Dr. Warren | 3:00 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |
| *Kings County Hospital* (Brooklyn) | Gynecology | Dr. McNaughton | 9:00 A.M. |
| **SATURDAYS** | | | |
| *City Hospital* | Pathology: Demonstrations and Lantern Exhibitions | Dr. Larkin | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Jeleffe | 2:00 P.M. |
| *Kings County Hospital*, (Brooklyn) | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| | Medicine | Dr. Stivers | 3:30 P.M. |

All registered Physicians are cordially invited to attend these Clinics. Admission cards, valid until October 1, 1913, may be obtained on personal application at The New York Academy of Medicine, 17 West 43d St., Manhattan, and at The Medical Society of the County of Kings, 1313 Bedford Ave., Brooklyn.

# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF GEORGIA.

*May, 1912.*

### ANATOMY.

1. Name bones of the head. What are the Wormian bones?
2. Name articulations of occipital and of parietal bones. Name bones articulating with humerus.
3. Name divisions of vertebral column, giving number of bones in each division. What are distinguishing characteristics of cervical vertebræ?
4. Describe briefly the pleura. What is contained in the middle mediastinum. Name the openings in the pharynx.
5. Locate and briefly describe the gall-bladder. Give anatomical relations of appendix vermiformis.
6. Name abdominal viscera wholly covered with peritoneum; those partly covered.
7. Give relations of womb, ovaries, and Fallopian tubes.
8. Name the nerves of the special senses. Give origin of eighth and ninth pairs. In which part of spinal cord are motor and sensory nerve fibers located, respectively?
9. Give origin and insertion of biceps muscle. Locate pectoralis major and minor muscles. Give origin and insertion respectively.
10. Name component parts of the spermatic cord. Name divisions of male urethra. Where are ureters located?

### PHYSIOLOGY.

1. What is the normal temperature of the body? Give two physiological reasons for increased temperature.
2. Give in detail the functions of the liver and gall-bladder.
3. Name the physical properties of normal urine.
4. Locate the spleen and thyroid gland and give the function of each.
5. What is aphasia? Give the different forms and causes of each.
6. What is the difference in the development of the motor and sensory nerves?
7. What is respiration? Name four things that happen to the blood in the lungs.
8. Describe the red and white blood corpuscles and the work of each.
9. Describe mouth, gastric, and intestinal digestion.
10. Why and how should physicians cooperate with all that promotes community health?

### MATERIA MEDICA AND THERAPEUTICS.

1. Give treatment of syphilis.
2. Define galactagogue, sialagogue, hydragogue, cholagogue, and an anthelmintic. (*a*) Name a drug as an example of each.
3. What are the physiological effects of digitalis and how does it differ from strophanthus? (*a*) In what diseases would you administer digitalis?
4. (*a*) Define Materia Medica. (*b*) Therapeutics.
5. Write a prescription for a collyrium and for a suppository. (*a*) Give the treatment of scabies.
6. Give treatment of (*a*) opium poisoning, (*b*) carbolic acid poisoning (*c*) bichloride of mercury poisoning.
7. Name five official preparations of iron; five of mercury.
8. Name three vasomotor stimulants; three vasomotor depressants.
9. Give the treatment of an acute case of dysentery.
10. Mention three drugs that are administered internally to arrest hemorrhage. (*a*) Name three to promote menstruation.

### PATHOLOGY.

1. Differentiate pyemia and septicemia.
3. Definition of inflammation.
4. Name the four orders of phenomena characterizing an inflammation.
5. Why will an incised wound heal more readily than a contused one?
6. Why is a punctured wound more liable to produce tetanus than an incised one?
7. Difference between aërobic and anaërobic bacteria.

### PRACTICE.

1. (*a*) How would you make a diagnosis of typhoid fever? (*b*) What drug would you use to differentiate typhoid from malarial fever? (*c*) What typhoid prophylactic measures would you employ in typhoid fever? (*d*) How would you treat intestinal hemorrhage of typhoid fever?
2. (*a*) Make differential diagnosis between bronchopneumonia and croupous pneumonia. (*b*) Differentiate unresolved pneumonia and pyemia.
3. (*a*) Differentiate between mitral insufficiency and aortic insufficiency. (*b*) What do you understand by broken compensation of the heart, and give treatment for same.
4. Make diagnosis of acute uremia and give treatment.
5. Give differential diagnosis of catarrhal and obstructive jaundice and treatment of each.
6. Differentiate tonsillitis and diphtheria and give treatment of each.
7. (*a*) Give the symptoms, diagnosis, and treatment of uncinariasis. (*b*) Is it limited to children only?
8. What is the opsonic index?
9. (*a*) Burns are divided into how many degrees? (*b*) Give treatment for burns. (*c*) What complications to be looked for in burns?
10. Differentiate concussion, apoplexy, drunkenness, and uremic coma.

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## ANSWERS.

### ANATOMY.

1. *Bones of the head:* Occipital, two parietal, two temporal, ethmoid, sphenoid, frontal, two lacrymal, two malar, two nasal, two palate, two superior maxillary, inferior maxillary, vomer, and two inferior turbinated.

The *Wormian bones* are irregular, isolated, supernumerary bones, situated between some of the cranial bones; they are generally found in the lambdoid suture and in the fontanelles, and vary greatly in size and number.

2. *Articulations of occipital bone:* Two parietal, two temporal, sphenoid, and atlas.

*Articulations of parietal bone:* Occipital, frontal, temporal, sphenoid, and opposite parietal.

*Articulations of humerus:* Scapula, ulna, and radius.

3. The vertebral column is divided into: Cervical division, with seven bones; dorsal, or thoracic, with twelve bones; lumbar, with five bones; sacral, with five bones, and coccygeal, with four bones.

The *cervical vertebrae* are distinguished by possessing a foramen in the transverse process. Further, they are smaller than those in the other regions; they have no facets for the ribs; the spinous processes are generally short and bifid; the spinal foramen is large and triangular; the superior articular process is directed upward and backward, and the inferior articular process is directed downward and forward.

4. "The *pleuræ* are two serous sacs enclosing and investing the lungs. Each pleura consists of a visceral and parietal layer. The *visceral* portion covers the lungs, and the *parietal* layer lines the inner surface of the chest walls, the upper surface of the diaphragm, and the sides of the pericardium. The visceral and parietal layers of the corresponding pleura become continuous in front and behind the root of the lung; and below the root a fold, the *ligamentum latum pulmonis*, extends downward along the inner surface of the lung to the diaphragm. The mediastina are formed by the visceral layers of each side approaching one another toward the median line." (*Aids to Anatomy.*)

The *middle mediastinum contains:* The pericardium, the heart, ascending aorta, part of superior vena cava and vena azygos major, bifurcation of trachea and the two bronchi, pulmonary artery, pulmonary veins, phrenic nerves, and lymphatic glands.

*Openings in the pharynx:* Two Eustachian tubes, two posterior nares, mouth, larynx, and esophagus.

5. The *gall-bladder* is a conical bag placed in a fossa on the under surface of the right lobe of the liver. Its upper surface is attached to the liver, and its fundus and posterior surfaces are invested by peritoneum reflected from the adjacent surface of the liver. The body is in relation in front with the liver, and behind with the first part of duodenum, the pylorus, and the hepatic flexure of colon. The fundus is in contact with the parietes opposite the ninth right costal cartilage.

*Relations of vermiform appendix.* Owing to the variable position of the appendix, these are not definite. As a rule, the appendix is given off from the lower, posterior surface of the cecum, and points upward and to the left, but it may hang down into the pelvic cavity, or take almost any other position with reference to the lower end of the cecum. The point at which the appendix joins the cecum is generally indicated on the anterior abdominal wall by *McBurney's point.* (A line is drawn from the anterior superior spine of the ilium to the umbilicus, and a point

is marked off on this line at a distance of two and a half inches from the spine of the ilium.)

6. (*a*) *Wholly covered with peritoneum:* Stomach, first part of duodenum, jejunum, ileum, cecum, transverse colon, sigmoid flexure, first part of rectum, liver.

(*b*) *Partially covered with peritoneum:* Second and third part of duodenum, ascending and descending colon, middle part of rectum, bladder.

(*c*) *Without peritoneal investment:* Pancreas and kidneys.

7. The *uterus* is in front of the rectum, behind the bladder; it has the broad ligament on each side; above and a little behind are coils of small intestine; and below is the vagina. The *Fallopian tubes* are situated in the upper margin of the broad ligament; in front and behind are the broad ligament; at the inner end is the uterus, and at the outer end the ovary. The *ovaries* are situated in the posterior layer of the broad ligament, below the Fallopian tube. Their position is very variable. In front is the broad ligament; behind, coils of small intestine; above, the Fallopian tube; on the outer side is the wall of the pelvis; on the inner side, the broad ligament.

8. The *nerves of special sense* are: First, or olfactory; second, or optic; eighth, or auditory; ninth, or glossopharyngeal (in part). *Origin of eighth nerve:* Between the pons and restiform body, from the auditory nuclei and striæ acusticæ in the floor of the fourth ventricle. *Origin of ninth nerve:* From the upper part of the medulla in the groove between the olive and the restiform body, and from the floor of the fourth ventricle.

*Motor fibres* are located in the direct pyramidal tract, the crossed pyramidal tract. *Sensory fibres* are located in the direct cerebellar tract, the anterolateral ascending tract, Burdach column, and Goll's column.

9. Biceps. *Origin:* Glenoid cavity and coracoid process of scapula. *Insertion:* Tuberosity of radius.

The *Pectoralis major* is situated at the upper and forepart of the chest, in front of the axilla. The *Pectoralis minor* is situated at the upper and front part of the thorax, beneath the Pectoralis major.

Pectoralis major. *Origin:* Anterior surface of inner half of clavicle, anterior surface of sternum, from the cartilages of the second to sixth ribs, and from the aponeurosis of the external oblique of the abdomen. *Insertion:* Into the outer bicipital ridge of the humerus.

Pectoralis minor. *Origin:* From third and fourth and fifth ribs, just external to the cartilages, and from aponeurosis over intercostal muscles. *Insertion:* Into coracoid process of scapula.

10. The *spermatic cord* consists of the vas deferens with artery to the vas, spermatic artery, and pampiniform plexus of veins forming spermatic vein above, sympathetic nerves, the cremasteric artery, the genital branch of the genitocrural nerve, lymphatics, together with some areolar tissue; it extends from the internal abdominal ring to the testis, passing in its course along inguinal canal, from which it emerges by the external abdominal ring, and thence in front of the pubes to the scrotum. The vas deferens is placed at the back of the cord.

The *male urethra* is divided into three parts: The prostatic, the membranous, and the spongy.

The *ureters* are situated in the back part of the abdominal cavity and in the pelvis; they pass from the pelvis of the kidneys to the back part of the base of the bladder.

## PHYSIOLOGY.

1. The *normal temperature of the body* is about 98.6° F. *Two physiological reasons for increased temperature:* Exercise and ingestion of food.

2. The *functions of the liver* are: (1) The secretion of bile; (2) the formation of glycogen; (3) the formation of urea and uric acid; (4) the manufacture of heat; (5) the conversion of poisonous and harmful substances into inert material.

The *function of the gall-bladder* is to serve as a reservoir for the bile between the time of its manufacture by the liver and its being poured into the duodenum.

3. *Normal urine* is a yellowish fluid secreted by the kidneys to the amount of about 1,200-1,500 c.c. daily; specific gravity, about 1,015 to 1,025; acid reaction (due to acid sodium phosphate); it has a characteristic odor and a salty taste. Its normal constituents are: Water, urea, uric acid, urates, hippuric acid, kreatin, kreatinin, xanthin, hypoxanthin; sulphates, chlorides, and phosphates of sodium and potassium; phosphates of magnesium and calcium; nitrogen, and carbon dioxide.

4. The *spleen* is situated below the diaphragm, between the diaphragm and the fundus of the stomach; it is chiefly in the posterior part of the left hypochondriac region, but it extends also into the epigastric region.

The *thyroid* is situated at the front and sides of the neck and extends up on each side of the larynx; the isthmus generally crosses the second and third rings of the trachea.

*The function of the spleen:* The following theories have been held: (1) It is a source of production of the white blood corpuscles; (2) it is a source of production of the red blood corpuscles during fetal life; (3) it is a place where the red blood corpuscles are destroyed; (4) uric acid is produced in the spleen; (5) an enzyme is produced in the spleen and is carried by the blood to the pancreas, where it converts the trypsinogen into trypsin.

The *function of the thyroid* is not definitely settled: (1) it has some trophic function, regulating oxidation in the body, and it is supposed to have also a special influence on the vasomotor nerves, the skin, the bones, and on the sexual functions; (2) it is supposed to antagonize toxic substances; and (3) it produces an internal secretion.

5. "*Aphasia* is a morbid condition consequent on a cortical or subcortical lesion, whereby speech, writing, or reading may become impaired, either from an inability to co-ordinate the necessary movements involved in speech, or from a defective interpretation of sounds or visual impressions. . . . Speech involves a healthy continuity between the chief motor center in the left inferior frontal lobe and the visual and acoustic centers on the one hand and between the chief motor center and the muscles employed in speech or reading aloud on the other. The centers assigned to speech and writing are motor and sensory, distributed thus: (1) a motor (*glosso-kinesthetic*) speech center, in the third left frontal (Broca's convolution); (2) a motor (*cheiro-kinesthetic*) center for writing, in the posterior part of the second left frontal convolution; (3) sensory centers; (a) *auditory word center,* in the posterior part of the first temporal convolution; (b) the *visual word center,* in the angular gyrus. The motor centers connect with each other and the sensory centers by commissural fibers. The similar but subordinate centers in the right hemisphere have a limited capacity for taking over the functions of the left centers when these are destroyed. (1) Lesions of the glosso-kinesthetic center cause *motor aphasia*—the patient is unable to express himself in words, although there is no paralysis of articulation. (2) Lesions of the cheiro-kinesthetic center cause *agraphia*—the patient cannot express himself in writing. (3) Lesions of the visual word center in the angular gyrus cause *word blindness or alexia*—i. e. the patient can see print but cannot read it. (4) Lesions of the auditory word center in the temporosphenoidal lobe cause *word deafness*—the patient hears but does not understand words.

6. *Motor nerve fibers* are developed in the gray matter beneath the aqueduct of Sylvius, beneath the floor of the fourth ventricle and in the anterior horns of the gray matter of the spinal cord.

*Sensory nerve fibers* are developed outside of the central nervous system, and later on become connected with it. The cells develop two processes, one of which passes toward the spinal cord, and the other toward the periphery.

7. *Respiration* is the process by which an interchange of gases takes place in the lungs; so that oxygen is introduced and carried to the tissues, and carbon dioxide is expelled. In the lungs the blood becomes red in color, it gains oxygen, it loses carbon dioxide, and it is cooled.

8. The *red corpuscles* are biconcave discs, about 1/3200 of an inch in diameter; they are non-nucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They contain hemoglobin.

The *white corpuscles* are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named.

The *red blood cells* carry oxygen from the lungs to the tissues. The *white blood cells:* (1) Serve as a protection to the body from the incursions of pathogenic microorganisms; (2) take some nart in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper proteid content of the blood plasma.

9. Digestion. (1) *In the mouth* the food is crushed, mixed with saliva, and reduced to a pulp; a certain amount of starch converted into maltose and rendered slightly alkaline. Fats and proteids are unaltered. (2) *In the stomach,* the contents are rendered acid, conversion of starch into sugar ceases, connective tissue of fats is dissolved and fats are set free. Proteids are dissolved and

peptone formed. The albuminous foods are dissolved for the most part, and a grumous mixture of peptones, liquid fats, and starches is formed, which is termed chyme, and is gradually passed through the pylorus into the intestine. (3) In the *small intestine* the chyme is mixed with the bile and the pancreatic juice; the reactions become alkaline. Proteids are split up into proteoses and peptones; starches are converted into maltose; fats are emulsified and saponified; and the products of digestion are now ready for absorption.

10. The physician should consider it his duty and privilege to aid the Board of Health in disseminating knowledge and preventing disease. He should also avail himself of every opportunity to teach his patient and others the principles of hygiene.

MATERIA MEDICA AND THERAPEUTICS.

1. *Treatment of syphilis:* The management of the local sore consists in local cleanliness mainly. If the diagnosis is absolutely certain, mercury may be commenced at once, and may avert even secondary symptoms; but it is often advisable to wait till these appear before commencing specific treatment. Treatment consists in the early stages in the administration of one or other of the preparations of mercury. This can be given for long periods without producing salivation or diarrhea. Treatment must not be stopped when symptoms have disappeared, but must be continued for two or three years. Where symptoms are more urgent and a rapid effect is desired inunction of blue ointment ʒj daily or hypodermic injection of corrosive sublimate gr. ⅛ every second day may be practised, or calomel suspended in sterile oil may be injected into the gluteal muscles once a week. The condition of the mouth must be looked to and smoking should be forbidden if there are lesions in the mouth. In the tertiary stages iodide of potassium to a great extent takes the place of mercury, but the two are often advantageously combined. Doses of from 5 to 20 grains thrice daily usually suffice, but in cerebral syphilis the drug must be rapidly pushed to even large doses. In every case, besides treating the specific disease, the general health must be sedulously cared for. Salvarsan is now often used; it may be given subcutaneously, intravenously, or intramuscularly. It should be used with caution. (From Wheeler's *Handbook of Medicine.*)

2. *A galactagogue* is an agent which increases the secretion and flow of milk; example, pilocarpine. A *sialagogue* is an agent which increases the flow of saliva, as pyrethrum. A *hydragogue* is a cathartic which removes a large quantity of water from the vessels and tissues, as elaterium. A *cholagogue* is a purgative which stimulates the discharge of bile, with free purgation, as rhubarb. An *anthelmintic* is an agent which destroys or expels intestinal worms, as quassia.

3. DIGITALIS. *Physiological action:* It is a gastrointestinal irritant, it slows the rate of the heart, prolongs diastole, increases the force of the heart, it contracts the blood-vessels, and causes a rise in blood pressure, it also acts as a diuretic.

*Therapeutic use:* Digitalis is indicated in diseases of the heart: (1) when the heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is contraindicated in diseases of the heart: (1) in aortic lesions when uncombined with mitral lesions; (2) when the heart action is strong, and arterial tension high. Digitalis is also a diuretic; and it is also used in some forms of nephritis, exophthalmic goiter, pneumonia, chronic bronchitis, etc.

*Digitalis differs from strophanthus* in that it (digitalis) acts more slowly, has a more lasting effect, is more certain, and is cumulative in its action.

4. *Materia medica* is that branch of pharmacology which treats of the various substances used as medicines.

*Therapeutics* treats of the science and art of healing.

5. *A collyrium:*

℞. Zinci sulphatis.
Ferri sulphatis.
Cupri sulphatis.
Alumnis aa gr. j.
Aquæ destillatæ ʒj. M.
Fiat collyrium.
Sig.: Use on conjunctiva of eyelid, with a brush; and then wash it off with clean water.

*A suppository:*

℞. Extracti opii gr. vj.
Fluidextracti belladonnæ gr. ss.
Extracti hyoscyami gr. ij.
Olei therbromatis q.s. M.
Fiant suppositoria No. vj.
Sig.: Insert one into the rectum morning and night.

*Treatment of scabies* "consists in a protracted bath with soap and hot water, followed by the application of sulphur ointment (ʒi to ʒi) or other parasiticide every night for one week. In the meantime the bed-linen and underclothing should be sterilized by heat. At the end of a week another bath should be taken and some sedative ointment or lotion should be prescribed. Sulphur may be substituted by beta-naphthol, balsam of Peru, styrax, tar, staphisagria, etc." (*Pocket Cyclopedia.*)

6. *Treatment of opium poisoning:* "Wash out the stomach with a dilute solution of potassium permanganate, leaving about 500 c.c. in the stomach, and maintain the respiration. In the first or second stage the 'ambulatory treatment' should be adopted to prevent, if possible, the establishment of the third stage. If this stage develop, the main reliance is to be placed in maintaining the respiration by artificial methods, until the poison has been eliminated. Strong coffee, or caffein, by the mouth or rectum, are of benefit. The same cannot be said of atropin. The urine should be drawn by the catheter."

*Treatment of carbolic acid poisoning:* Wash out the stomach with pure alcohol, then with water; or give a soluble sulphate such as sodium sulphate.

*Treatment of bichloride of mercury poisoning:* Give milk or white of egg in moderate quantity, and follow with an emetic.

7. *Five official preparations of iron:* Reduced iron, ferrous sulphate, ferric chloride, soluble ferric phosphate, and iron citrate.

*Five official preparations of mercury:* Hydrargyrum cum creta, massa hydrargyri, hydrargyri chloridum mite, hydrargyri chloridum corrosivum, and liquor arseni et hydrargyri iodidi.

8. *Three vasomotor stimulants:* Ergot, belladonna, and strychnine. *Three vasomotor depressants:* Amyl nitrite, aconite, and alcohol.

9. *The treatment of acute catarrhal dysentery* "consists of rest in bed and liquid diet. Rochelle salts (ʒ½) or Epsom salts (ʒ½) should be given to cleanse the bowels thoroughly. Castor oil (ʒi) with laudanum (gtt. 20) may be used. Pain is relieved by opium, alone or combined with bismuth, subnitrate, cocain, or belladonna. Hope's camphor mixture (ʒ2) may be administered every 3 hours. The colon may be irrigated every 2 hours with lukewarm water or starch-water containing laudanum (3½). (*Pocket Cyclopedia.*)

10. *Three drugs administered internally to arrest hemorrhage:* Ergot, hamamelis, digitalis. *Three to promote menstruation:* Manganese dioxide, aloes, and cantharides.

PATHOLOGY.

1. In *septicemia* there are microorganisms present and multiplying in the blood. In *pyemia,* in addition to the above, particles of blood-clot carry microorganisms to parts distant from the original source, and there set up metastatic abscesses.

2. *Inflammation* is the name given to the series of changes which occur in a part as the result of injury, provided such injury is not sufficient to at once destroy the structure and vitality of the tissue.

3. (1) Changes in the blood-vessels; (2) changes in the circulation; (3) departure of plasma, and corpuscles from the blood-vessels; and (4) changes in the perivascular tissues.

4. In the incised wound there is only a thin film of tissue which is devitalized, the edges are clean cut and are readily put in apposition. In a contused wound the tissues are bruised and devitalized, and so healing processes are delayed.

5. The tetanus bacillus is anaerobic, and hence can live and thrive in a punctured wound, where there is little or no oxygen. An incised wound, on the other hand, offers no such favorable condition.

6. *Aerobic bacteria* will only live and grow in the presence of oxygen; *anaerobic bacteria* will only live and grow if oxygen is absent.

PRACTICE.

1. (*a*) *A diagnosis of typhoid fever* may be based on: The peculiar temperature curve, the rose eruption, the enlarged spleen, a positive diazo-reaction, and a positive Widal test. (*b*) Quinine. (*c*) *Prophylaxis:* Flies should be kept out of the house as far as possible, by means of screens or otherwise; all discharges from the sick person must be disinfected; all utensils, dishes, etc., used by the patient must be thoroughly cleansed, and boiled every day; soiled linen must be soaked in a disinfectant solution before being washed; after each attendance on a patient, physicians, nurses, and others should wash their hands in a disinfectant; thorough sterilization of all bedding, etc., must be performed after the disease is over. (*d*) *Intes-*

*tinal hemorrhage* is tested by: Opium, lead acetate or calcium lactate; morphine or ergotin hypodermically; ice-bag over the cecum. The foot of the bed should be elevated, and the diet should consist of peptonized or malted milk.

2.

| CROUPOUS PNEUMONIA. | BRONCHOPNEUMONIA. |
|---|---|
| Generally a primary disease. | Generally secondary (to bronchitis or an infectious disease). |
| Age has little influence. | Generally found in very young or very old. |
| Sudden onset. | Gradual onset. |
| Fever is high and regular. | Fever is not so high, and is irregular. |
| Ends by crisis between sixth and tenth day. | Ends by lysis, at no particular date. |
| Generally only one lung affected. | Generally both lungs affected. |
| The physical signs are distinct, and there is a large area of consolidation. | Physical signs indistinct, and the evidences of consolidation are indefinite. |
| Sputum is rusty. | Sputum is rather streaked with blood. |

In *pyemia* there will be a prolonged chill or several successive chills, profuse sweats with decided fall of temperature, oscillating temperature, embolic or metastatic abscesses, vomiting, and emaciation. These are not present in pneumonia.

3. In *mitral insufficiency* there is a blowing murmur, heard best near the apex, systolic, transmitted to left axilla and under left scapula; it modifies or replaces the first sound. In *aortic insufficiency* the murmur is soft and blowing, is heard best over the aortic area, is diastolic, is transmitted down the sternum, and modifies or replaces the second sound. The left ventricle is hypertrophied and the pulse is of a characteristic ("water-hammer") type.

*Compensation:* "The alteration in the systemic blood supply caused by the valvular defects of chronic endocardial inflammation are such that if continued the integrity of the body is threatened. To overcome the impaired functions of the valves and to maintain the general circulation the heart increases in size and strength (*compensatory hypertrophy*). The period in which this occurs is called the *period of compensation;* its duration is indefinite. It may be recognized by the physical signs of valvular disease without any symptoms of disturbed circulation. Anything which disturbs the equilibrium as it now exists, such as acute diseases and excessive work, leads to *ruptured compensation,* a condition attended by cyanosis, dyspnea, edema, gastric, hepatic, and renal disturbances, and often death." (*Hughes' Practice of Medicine.*)

*Treatment of broken compensation:* "Where compensation has failed, cardiac tonics are required, and of these digitalis stands first. It acts beneficially by slowing the action of the heart and prolonging its diastole, thus increasing the natural rest. It also increases the force of the cardiac beat. In addition it has a diuretic action and thus tends to relieve dropsy. . . . Sudden breakdowns of compensation call for complete rest and stimulation of the heart by ammonia or ammonium carbonate. Where the right heart is over-distended, strychnine hypodermically, along with a mercurial purge, and, if necessary, removal of blood by leeches over the liver or by bleeding from the arm, are required." (Wheeler and Jack's *Handbook.*)

4. UREMIA. The *symptoms* are especially referable to the nervous system, and include such premonitory signs as headache, vertigo, nausea, indistinct vision, drowsiness, constipation, scanty urine, which may contain albumin, etc. The uremic seizure may manifest itself by marked gastro-intestinal disturbances, convulsions, or coma with more or less rise of temperature, nocturnal dyspnea, Cheyne-Stokes breathing, vomiting, diarrhea, dry skin, scanty albuminous urine with casts, etc. *Treatment* should be directed toward elimination of the poisons. Croton oil (one drop) and olive oil (℥1) should be administered at once, and later elaterium (gr. ⅛), calomel (gr. 2), and compound jalap powder (gr. 20) should be prescribed. A hot bath (110° F.) or a hot vapor bath should be given to produce free diuresis. Chloral (31), nitrite of amyl, or chloroform may be needed to control the convulsions. The diet should be liquid, and the condition of the pulse will govern the use of sedatives or stimulants. (*Pocket Cyclopedia.*)

5. *Simple catarrhal jaundice* is caused by some undetermined infectious agent, extension of catarrh of the duodenum up the common bile-duct, and certain diseases, as pneumonia, typhoid fever, etc. The symptoms are nausea, vomiting, dull frontal headache, mental hebetude, jaundice, constipation, high-colored, scanty urine, slow and full pulse, and slight fever. The condition terminates favorably in 1 to 3 weeks. The treatment consists in rest in bed, liquid diet, and the administration of fractional doses of calomel (gr. ¼ every hour for 6 or 7 hours) followed by a saline purge if necessary. Later, constipation may be avoided by the use of the salines and mineral waters. Lavage, rectal irrigation, and blisters over the right hypochondrium may be employed. (*Pocket Cyclopedia.*)

*Obstructive jaundice* is caused by impaction of foreign bodies, pressure of tumors, inflammation of the ducts, or parasites. Symptoms are yellow skin and conjunctivæ, pruritus, sweating, discolored perspiration and saliva, boils, herpes, slow pulse, pale and gray colored feces, headache, vertigo, mental dulness and irritability. The jaundice is only a symptom, and treatment must be directed to the underlying cause.

6. In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white cheesy spots or plugs which consist of broken-down epithelium, and are easily brushed away; Klebs-Loeffler bacilli are never found.

In *diphtheria* the onset is more gradual; the temperature rises to about 101° to 103° F.; the tonsils are not much enlarged; there is an exudate of a thick grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon reforms, and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Loeffler bacilli may be found.

*Treatment of tonsillitis:* Calomel, and saline laxative; salicylates or aconite for the fever; potassium chlorate as a gargle; antiseptic spray or mouth wash.

*Treatment of diphtheria:* Administer antitoxin at once, in dose of from 2,000 to 8,000 units; isolate the patient; antiseptic solutions or Loeffler's solution may be used to swab out the throat and nose; tonics and supporting treatment are also indicated.

7. UNCINARIASIS. *Symptoms:* Anemia; pale and yellowish skin; lack of growth and development, both mental and physical; relaxed tissues; protruding abdomen; dropsy. *Diagnosis* is made by making a microscopical examination of the feces and finding therein the eggs of the hook worm. *Treatment:* Children should wear shoes; proper toilet facilities should be provided; a dose of calomel is given, on an empty stomach; this is followed by a dose of Epsom salt; after the bowels have been thoroughly emptied thymol in capsules is administered, dosage varying according to the age of the patient, children from 5 to 10 years of age taking 15 to 30 grains, and adults from 60 to 100 grains. On the day that the thymol is taken the patient is practically starved, except for a cup of coffee. The disease is not limited to children only, though they are by far the most frequent victims; exceptionally, adults may take the disease.

8. The *opsonic index* is the relative amount of opsonins in a serum, as compared with the normal standard. It is obtained by dividing the average number of bacteria taken up by a leucocyte under the influence of a given serum, by the average number taken up by a leucocyte under the influence of standard normal serum.

9. *Degrees of burns.*—Dupuytren's classification: *First degree,* reddening of the skin. *Second degree,* blistering. *Third degree,* destruction of the epidermis, Malpighian layer, and papillæ of the derma. The sensitive nerve terminals are exposed; consequently this is the most painful degree. The sweat and sebaceous glands and hair follicles are not destroyed, and from these epithelium spreads in healing, so that repair is rapid, and the scar is not a contracting one. *Fourth degree:* the whole thickness of skin and part of the subcutaneous tissues are destroyed. *Fifth degree:* the muscles are injured. *Sixth degree:* the whole limb is charred.

*Treatment.*—General: If carbonic-oxide-poisoning is present, artificial respiration and administration of oxygen. For shock, opium and stimulants. Local: For burns of the first degree, powder with boracic acid. Puncture blisters, and cover the part with an antiseptic dressing.

Burns of deeper degrees than the second must be made aseptic with 1 in 1,000 bichloride of mercury. Antiseptic gauze dressings should then be used. Picric acid (20 grains to 1 ounce of water) is used as a dressing. The continuous bath may be used. If the burn be of any size it should be skin-grafted, as the scars of burns contract very much. (*Aids to Surgery.*)

*Complications of burns:* Asphyxia, shock, syncope, ulceration of the duodenum, exhaustion, and toxemia.

10. See SURGERY, question 10.

## Therapeutic Hints.

**Inhalations in Chronic Bronchitis.**—M. Hirtz, in his "Therapeutics of Respiratory Diseases," recommends the following as a useful remedy in cases of chronic bronchitis:

℞ Beechwood Creosote, 25 grams.
Tincture of Benzoin, 20 grams.
Eucalyptol, 10 grams.
Thymol, 20 grams.
Gomenol, 20 grams.
Alcohol, 200 grams.

Two tablespoonfuls of this mixture are to be added to one quart of water which is kept boiling from time to time.—*La Presse Médicale.*

**The Prescribing of Cannabis Indica.**—Plique recommends as an effective sedative a combination of the fatty extract of cannabis indica with lupulin and the extract of humulus as follows:

℞ Fatty Extract of Cannabis Indica, 0.05 gram.
Lupulin.
Extract of Humulus, of each, 0.50 gram.

To be divided into ten pills.

The following potion is recommended by Berthier:

℞ Alcoholic Extract of Cannabis Indica, 0.20 grams.
Weak Infusion of Coffee, 60.00 grams.
Sugar, q.s.

The coffee is of value in diminishing the torpor. The fatty extract is more active, toxic, and certain in its effects than the alcoholic extract.—*Bulletin Générale de Thérapeutique.*

**Treatment of Gonorrhea.**—J. E. R. McDonagh states that the following prescription is occasionally of value in the treatment of gonorrhea:

℞ Copaibæ, ♏xv.
Pulv. Cubebæ, grs. xxx.
Potass. Iodid. (increasing doses), grs. x.
Spir. Ether. Nitrosi, ♏xv.
Mucilag. Acaciæ, ʒj.
Infus. Taraxaci vel Buchu, ad ʒj.

When this mixture is given there should be ordered injections twice daily of a 1 in 4-8 solution of hydrogen dioxide. The latter liberates the iodine derived from the potassium iodide. The iodine has a powerful destructive influence on the gonococcus. —*The Practitioner.*

**Local Applications in Pruritus.**—Darier has found the following lotion to be highly effective:

℞ Lanolin, 10 grams.
Vaseline, 20 grams.
Cherry Laurel Water,
Rose Water,
Orange Flower Water, āā, 10 grams.

Guéneau de Mussy combines potassium bromide with camphor as follows:

℞ Potassium Bromide, 2 grams.
Camphor, 0.20 gram.
Simple Cerate, 20 grams.

Bulkley finds that the local application of chloral is particularly of value in cases of insomnia due to pruritus. His formula is as follows:

℞ Camphor,
Chloral Hydrate, of each, 4 grams.
Unguentum Aquæ Rosæ, 30 grams.

Hebra's prescription is the following:

℞ Washed Sulphur, 18 grams.
Precipitated Chalk, 12 grams.
Sesame Oil, 18 grams.
Green Soap,
Lard, of each, 50 grams.

—*Le Bulletin Médical.*

## Miscellany.

**The Growth of a Legend.**—"X" relates that he "has recently been watching, with much interest, the circulation through the weekly papers, of a story anent the artist Whistler and Sir Morell Mackenzie, which, curiously enough, starting in Paris, has now reached the American medical Journals and seems embarked on a long and active career. Briefly, it is this:—Whistler's pet poodle being very ill, Sir Morell Mackenzie was sent for in hot haste. Indignant at having been summoned to see a dog, he, nevertheless, pocketed his dignity, and prescribed, *secundum artem.* Whistler, having thanked the 'eminent surgeon' profusely, begged to know the fee. Sir Morell, turning away, said pleasantly, 'Oh! My house wants painting. Will you see to it?' Now Sir Morell Mackenzie was, without doubt, an accomplished laryngologist; but why Whistler—whose brother, by-the-bye, was almost equally celebrated in the same department of medicine—should have desired the services of a laryngoloist for his poodle, heaven only knows. Mr. Ben Trovato, the eminent raconteur, seems for the moment at fault. Still, the natural history of such legends as this leads us to suppose that the story of the laryngologist and the poodle will continue to circulate, till after having served its day it 'falls on sleep,' later to be revived by the journalists of the next generation about some heroes of to-day.

"Many years ago there was related in that excellent, even if mid-Victorian periodical, *The Leisure Hour,* a similar story; but this time concerning Nélaton and Meisonnier. Some time during the early days of the Second Empire, Nélaton was urgently summoned to the painter's villa in the *banlieue de Paris.* After some time had been spent in the way of sumptuous entertainment, Nélaton, a little impatiently, begged to be introduced to the sufferer. Whereupon two gorgeous flunkeys entered the room bearing on a cushion a little dog with a broken limb, and the master fell on his knees entreating the surgeon's forgiveness and aid. Nélaton addressed himself to the case, and set the limb; he was departing, when Meisonnier desired to know, as Portia would have said, how he might gratify the gentleman, for, in his mind, he was much bound to him. The story goes that Nélaton then declared the door of his '*cabinet de consultation*' to need painting, and hoped that the artist would restore it. Meisonnier seized the occasion, we are told, of the surgeon's temporary absence from Paris, to produce, on each panel, a veritable *tour de force.*

"Now this is a more exquisite tale than the other. But the germ of both may be traced in the episode of Radcliffe and Kneller, as related by the veracious Pittis. Radcliffe and Kneller lived near each other in Bow street; their gardens were separated by a wall. Radcliffe, for the better entertainment of his friends, begged the privilege of entrance to Kneller's plaisaunce, through a door which he desired to make in the wall. The painter, with accustomed grace, gave his assent, but, the privilege being abused by the doctor's servants, had thereafter courteously to hint that if the grievance recurred, the door must be bricked up. Whereupon the choleric doctor sent a message to say that Sir Godfrey might do what he liked to the door, so long as he did not paint it. 'Did my very good friend, Dr. Radcliffe, say so?' cried Sir Godfrey. 'Go back to him and after presenting my service to him, tell him that I can take anything from him but his physic!'"—*The Universal Medical Record.*

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## Original Articles.

### JAN PALFYN.

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NEW YORK CITY.

THE records of Courtrai, Belgium, show that the subject of our narrative, the son of Egide Palfyn and Marguerite de Rore, was born on the 28th of November, 1650. This city, in recognition of his services to mankind and science, has named a street in his honor and erected a statue to his memory.

The father of Jan Palfyn was a surgeon-barber, a profession which at that time was still in its infancy. It was neither lucrative nor considered honorable and its practitioners were banished to the lowest order of society.

As Palfyn grew older he participated more and more in his father's knowledge of the profession of surgeon-barber; and incomplete as were these first notions of medicine which he obtained, they nevertheless were of advantage in that they stimulated him to deeper studies.

FIG. 1.—Jan Palfyn, 1650-1730.

Perhaps Palfyn detected that the deceptive, uncertain and fumbling character of the art, which his father practised, occasioned grave fear and anxiety on his father's part, for the patients who consulted him; or perhaps Palfyn was precocious and by inquisitive and naïve but sensible and perplexing questions, drew from his father belated reflections on the lack of foundation possessed by him, regarding the art which he practised.

Palfyn recognized the fact that in order to avoid the fear and anxiety experienced by his father, he must obtain a greater knowledge of anatomy. All his energy was directed to this end and his inclination towards and enthusiasm for anatomy remained ever the same as it was when he first started in quest of this subject. In proof of this we find in the preface of one of his books the following: *"I have always loved the science of anatomy beyond measure: I have applied myself to it with an insatiable passion; having in view the aim to be able to practise surgery with the greatest security."*

At the age of sixteen he had acquired all his father could teach him, and had read all the books which were at his disposal. These books served little purpose other than to improve his knowledge of Flemish which the scientific world then refused to use.

To his chagrin the only treatises on anatomy were written in Latin, a language foreign to him and a knowledge of which he could not easily obtain. He found himself face to face with almost insurmountable obstacles, without resources, counsel or help.

During the next four years having acquired at great hardship a knowledge of Latin and having interested certain benefactors to open the way to him for study, he conceived the project of translating into a popular language the ideas of those Latin authors which he valued so highly that others in the same position as he formerly was might avail themselves of them.

He pushed the scientific impatience up to the point of a will—as Vesalius did—to scrutinize the secrets of nature. His earnestness led him to rob the cemeteries.

Palfyn lived at a time when the development of science encountered—but fortunately in vain—the greatest obstacles, religious fanaticism, immutability of dogmas, the social constitution, the prerogatives of jealous castes and finally the repudiation of a modern native language as a scientific one. Harkening only to his passion for investigation, and feeling that he ought to affront these prejudices, which, in his eyes, could only prevent the development of the public good, for he considered all else subversive, he made up his mind that for the obtaining of anatomical and surgical knowledge he was obliged to dissect cadavers; and therefore conformed his conduct to this end. Great prejudices against dissection existed at Courtrai. It was extremely difficult for him to obtain cadavers although the plague still existed in Flanders. He was detected in a cemetery opening a tomb, was accused of sacrilege, and in order to escape the penalty of the law sought refuge in Ghent.[1]

This change obtained for him resources and conditions which favored his anatomical and surgical studies. He became the apprentice of a surgeon in Ghent who was connected with the medical school and who obtained for him the opportunity to attend lectures and the privilege to dissect. Here he became familiar not only with the names of the scientific centers of Europe, but also with those of the prominent medical men of the day and their works. As a result, after remaining three or four years in Ghent, studying and becoming familiar with the French language, which he considered indispensable for appreciating medicine, he left for Paris.

At Paris he met and worked with two of the most celebrated anatomists and surgeons of that period, Jean Devaux and Pierre Dionis.[2] Here "his knowledge became so extensive and his judgment was so exact that a large number of medical practitioners consulted him regarding the diagnosis and treatment of their patients."

From their first meeting in 1674, when he made his first trip to Paris, a durable friendship existed between Palfyn and Devaux.

Attachment to his country, and a desire to render an account of his work at Paris to those who had helped him at Ghent, induced him to return home, where he was received with particular distinction, and being convinced that he could not give up his time to an art which was still so unscientific, he aspired to the career of teacher and writer and determined not only to investigate for himself but also to collect and group the scattered scientific facts then being, and theretofore demonstrated by the various workers in different countries.

After remaining a short time at Ghent he returned to his native city, Courtrai, where protectors and friends had obtained pardon for his early offense and made residence for him possible; but he always remained under suspicion, and we shall see how eleven years later for analogous reasons he

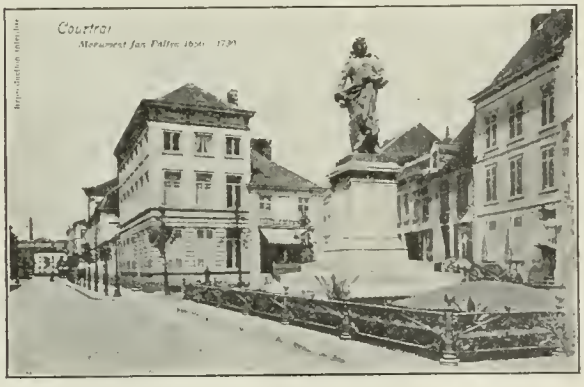


Fig. 2.—Monument to Jan Palfyn at Courtrai.

was again obliged to leave Courtrai and to establish himself at Ypres. At Courtrai, November 7, 1679, he married Marguerite Wallaert. Five children were the result of this union.

The departure of Palfyn for Ypres in 1686 or 1687 is undoubtedly connected with a quarrel between him and the Royal College of Medicine at Courtrai. The directors of this institution had in vain called Palfyn before them on four separate occasions, viz.: December 22, 1683: January 5, 1684; January 12, 1684, and again later when he was fined six florins for his "inobedience in refusing to explain satisfactorily a skeleton found in his possession."

Regarding the skeleton in question, the documents of the Royal College are not explicit.[3] We do not know whether Palfyn had again desecrated a cemetery or whether the authorities objected to his retaining human bones—perhaps otherwise obtained—at his home, where it was necessary for him to study them in the preparation of a work on osteology.

He fought with all his might the affectations raised by the narrow fanaticism of the people of his time, and he preferred to expatriate himself, rather than sacrifice his convictions, viz.: that for the good of humanity, for the rationalistic practice of surgery, it was the duty of the professional scientists to base the science on a thorough knowledge of anatomy.

He withstood for three years mortifications without number, by which he was overwhelmed, as he did not leave Courtrai for Ypres till 1686 or 1687. Here his wife died in 1691. He then spent two years in Paris, 1692-1693. His second wife, Marie de Bois, bore him a son at Ypres in 1694.

Palfyn in his writings tells of the years he spent studying at Courtrai and Ypres, how he made repeated trips into foreign countries, to learn scientific facts in order to assemble the material for his work, which was to consist of a method of teaching surgery based upon the then recently investigated knowledge of anatomy.

Some of the contemporaries of Palfyn resented the annihilation of the art of surgery, due, as Antoine Petit,[4] Regent of the Faculty of Medicine in Paris, said, in a lecture at the opening of a course in surgery November 27, 1757, "partly to the heedlessness and inconsideration of physicians who referred surgical cases to their underlings (among whom were the barbers) and to a fault of the surgical writings of the time in neglecting their natural function to pursue strange objects."

This debasement of surgery (for surgery at this time was separated from medicine, its guide and natural support), had caused much mischief. The barbers had been the means of making surgery the lowest sort of a trade. They were extremely ignorant and came from the dregs of society and practised a brazen charlatanism.

Was it astonishing that operations were performed without knowledge and necessity and that violent proceedings multiplied without reason or aim?

Palfyn was compelled not only to denounce the turpitude of the pseudo-surgeons and to bring before the public the unfortunate consequences of their culpable incapacity, but he also had to fill the places of those whom he discredited with truly learned men which he could only accomplish by teaching and making anatomical knowledge popular through his writings in the vulgar tongue.

At this time all Europe was aroused by the birth of microscopic anatomy and physiology, and if Palfyn's name cannot be placed among those of the illustrious men of this period, it should certainly follow them closely, for he was the first who, by means of a treatise on surgical anatomy, written in Flemish, supported by a judicious appreciation the ideas and discoveries of these men.

He placed himself en rapport with the greater part of those who made a study of medicine. He journeyed in England, France, Germany and Holland, and frequented the most celebrated schools of medicine, attaching himself more especially to hospitals and the great masters at Paris, Leyden, Louvain and Utrecht. He performed a giant's work in tracking the newer innovations and discoveries, and he showed an aptitude, not common, for appropriating facts which were both very new and abstract. Nothing escaped his attention, and he was recognized as one of the best informed medical personages of his time. An example in his writings serves to prove how he attached himself to the progress of medicine and how investigators were eager to communicate their recent ideas and discoveries to him.

On page 257 of his Treatise on Surgical Anatomy he says: "One cannot believe with what rapidity the blood circulates in the small vessels unless one con-

vinces himself by examining it either in the eel, frog, tortoise or lamprey. I have had the pleasure to see it admirably well in the tail of an eel by means of the microscope of the celebrated Leeuwenhoek at Delft in Holland, and since then at Paris M. Verdier, surgeon and demonstrator of anatomy, has also

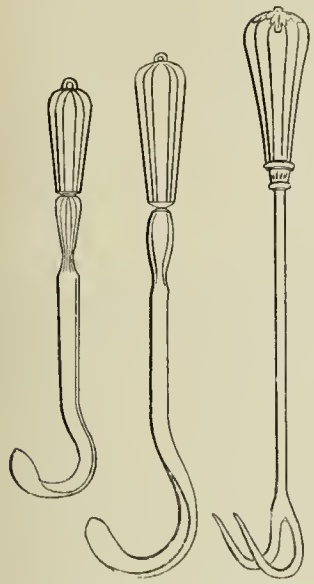

Fig. 3.—Sharp and blunt hooks. (From Ambroise Paré.)

Fig. 4.—One blade of Palfyn's forceps. (From Heister.)

shown me by means of the microscope the lymph circulating in the vessels of the mesentary of the frog."

Palfyn informs us in his writings how he spent nineteen years of his life, from 1676 to 1695, gathering together scientific data, which were scattered throughout Europe, and how he desired to coordinate these and thus make others feel the same respect for anatomy, physiology, and surgery as he did. He was then forty-six years old and had arranged all the material for his Treatise on Osteology, his Surgical Anatomy, and his Treatise on Surgery, when Ghent attracted him, and he left Ypres and established himself among his old protectors and friends at Ghent in 1695.

Here he practised surgery, passed his most prosperous years, achieved the climax of his fame, and his first book (1701) appeared. This work, as well as his other works, excepting one, was written in Flemish, but before publishing he submitted it to Devaux at Paris and Verheyen at Louvain, and on June 5, 1701, to the Medical Faculty at the University of Louvain, at that time one of the most famous in the world. He journeyed to Louvain with his manuscript and bones in order to prove that there was a communication between the cavity of the skull and the face, by means of the frontal, sphenoidal and maxillary bones. This was an important and debated question. An exact knowledge of the function of the orifices and canals of the cranium decided a delicate problem, viz., "whether humors were formed in the brain which were obliged to free themselves by natural openings." Palfyn maintained that these openings in the base of the cranium lodge vessels and nerves and that the structure of the mucous membrane of the nose was the same as other mucous membranes, where scattered glands were found, which secreted fluids to lubricate their surfaces.

Palfyn satisfied the Faculty who confirmed his proof in writing, with the academic seal attached, which latter he was permitted to use. This paper was signed by Philippe Verheyen, L. Peeters and J. Somers, under date of June 9, 1701. Palfyn's first work saw the light at Ghent in 1701 and was a volume of 418 pages.[5] The following is a translation of the title: *A New Osteology. The true and precise description of the bones from the human body, all taken from his own experience and enlightened by the newest discoveries in anatomy. By Jan Palfyn at Ghent. Published by Van Danckaert,* 1701. A second edition appeared at Leyden, 1702. It was translated into German and appeared in 1730 at Breslau, and Palfyn translated it into French, publishing it in Paris, in 1731. An edition appeared in Amsterdam, 1758.

The work was not simply a description of the bones, but a complete exposé of the then acquired knowledge of their nature, structure, and function, including their articulations and the diseases involving them. This osteology was remarkably clear and precise. He proved many of his statements by striking clinical examples. The osteology of the head is indebted to his spirit of observation and rigorous investigations. The success of the work was complete, and Palfyn was designated the "Celebrated Anatomist of Ghent" by the savants of France, Holland, England, and Germany.

Having taken frequent trips throughout Europe, in order to obtain the latest scientific knowledge, he came to Leyden to meet Boerhaave, and before meeting this great physician he became acquainted with some of his pupils, and inquired if there was any new work upon osteology. "We study with eagerness," they answered, "the Treatise on Anatomy by Palfyn; it has charmed our master so much that he has read it three times." "Well," said the modest traveler, "go and tell him Jan Palfyn waits upon him." Boerhaave had no sooner heard his name pronounced than he rose and embraced him with the cordial simplicity of the Hollanders. "It is long since I have desired to see you; your works please me greatly and I approved of all your opinions." Boerhaave, however, was unsuccessful in attaching Palfyn to the University of Leyden.

Fig. 5.—Church of Saint Jacques at Ghent.

But Palfyn's work was not in Latin, and this combined with the manner in which his Treatise on Surgical Anatomy attacked the inaptitude and incapacity of the surgeons of his time made for him many enemies.

The following, which is an almost literal translation from the Flemish of the dedication of his work on osteology, may be of interest:

"Who is there among the Christians who does not know that after the fall of Adam men were subjected to so many diseases that it is a special favor from the Everlasting Goodness out of Which everything is, through Whom everything is, and in Whom everything is, that He Who to some of the human race gives light to recognize illnesses and accidents, gives to them power the same to drive away and protect men from the same. To the Almighty Architect of Heaven and Earth, Who is the beginning and end of all things, the Supreme Physician of Soul and Body to Whom alone belong esteem, honor and glory."

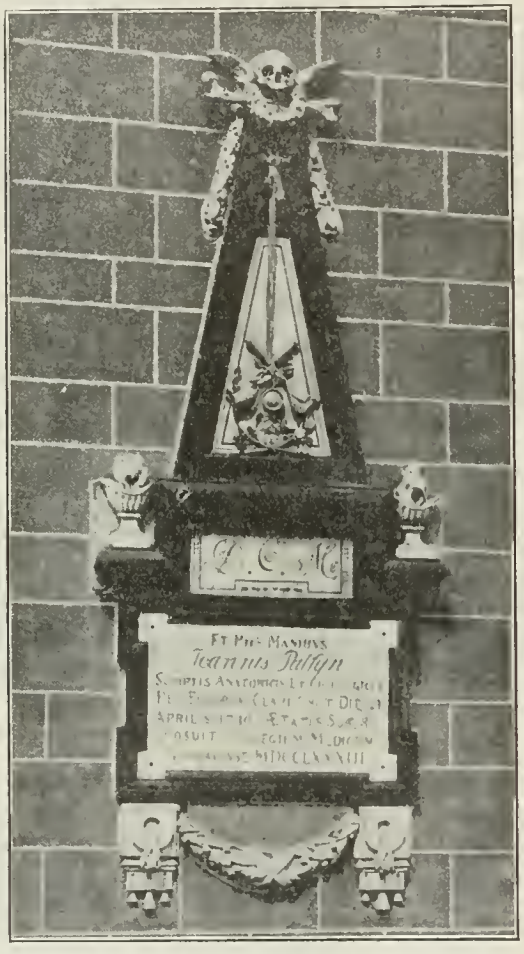

Fig. 6.—Cenotaph of Jan Palfyn in the Church of Saint Jacques at Ghent.

On account of his great reputation as an anatomist, the authorities of Ghent made him Professor of Anatomy.

de Mersseman[2] states:

"In April, 1703, twins were born united at the lower part of their bodies which created such a stir that Palfyn was selected to dissect them (instead of their own so-called pensionary anatomist) before the magistrate, the directors of the college of medicine and the principal practitioners. A month later another monster was born at Ghent, which he also dissected, in which an imperforate anus and vagina, together with a double uterus were found, and he was requested to make a report on his findings. The results of these dissections led him to publish a work dealing with the circulation of the blood in the fœtus. It was written in Flemish published at Ghent in 1703, and in Leyden 1708. The following is a translation of the title:[6]

*"An anatomical description touching on the wonderful state of the outside and inside parts of two children, which were monstrously joined to each other in the trunk of the body, born at Ghent, April 28, 1703; to which is added the strange constitution of some parts from another child, one of twins, not less wonderful than the above-mentioned case, born, in the same city May 27, 1703. Thereby are shown the unusual condition found in unborn children and the difference in the circulation of the blood in them and in older people. Never before this has this been brought to light in the Netherlands."*

As this work was so well received, and as the practices were so crude and inconsiderate in cases of maternal and fetal distociæ, the causes being but little known and the child frequently injured and the mother lacerated, he wrote upon the anatomy of the female organs of generation and that of monsters.

This work,[7] written in French and published at Leyden (1708), passed through four successive editions. In 1724 it was translated into Flemish.

The character of his writings, his general ability in his profession, and the fact that he was a distinguished anatomist and able surgeon who had exerted much influence upon the teaching and practice of surgery, caused the authorities at Ghent in 1708 to appoint him Professor of Surgery in their School of Surgery. J. de Mersseman says: "Although he was at this time nearly sixty years of age, his energy and enthusiasm had not abated and his teachings were both clear and practical. His continued correspondence with the greatest savants of the century coupled with the knowledge he had obtained by his frequent journeys throughout Europe permitted him to give his students all the surgical knowledge which was available at that period."

In the preface of the Flemish edition of his surgical anatomy printed in 1718 Palfyn indicates how he had devoted his life to medicine; scoffs at the ignorance of his time, speaks of the exigency of surgical teaching and says the aim of his life had been to have such pupils as would be worthy to represent *"the most necessary art of all,"* which had been for a very long time misunderstood. Palfyn expresses himself as follows, in the preface of this book: "Speaking of my osteology to a celebrated surgeon (*) in Paris, he advised me to write a treatise on anatomy for young surgeons, which, by instructing them in the structure of each part, would cause them to observe that which they must do and avoid, in operating, in order to maintain the organs or to re-establish them in their integrity and to preserve them from the harm that poor work would do them. Such a work was desired long since, but no one had taken the trouble to write it."

His "Surgical Anatomy of the Human Body" was first published[8] in 1710 and passed through numerous editions, being translated into French, German, and Italian, and, although Velpeau, in 1825, said it was "decorated with an empty title," he completely retracted this statement in the introduction, page 8 of the third edition of his own work on surgical anatomy,[9] Brussels (1834), where the following passage is seen: "Palfyn has the glory to have introduced into science the title *'Surgical Anatomy.'*"

Palfyn's "Surgical Anatomy" was followed by a "Treatise on Surgery" (1710), which was also written in Flemish[10] and translated into German in 1717 (Frankfort and Leipzig).

Here is the title of Palfyn's Treatise on Surgery: *"A precise dissertation of the principal works of surgery in the hard parts as well as in the soft of the human body—Brought to light by Jan Palfyn, sworn surgeon, anatomist and lecturer on surgery at Ghent. Being a work very useful to all medical men and surgeons. In two parts,* 506 pages, with illustrations. At Leyden, Christianus Vermey, 1710."

In the preface of the French edition of his Treatise on Surgery, published in 1726, when Palfyn was seventy-six years old, he says:

"I have always contemplated translating this book into French in consideration of the young surgeons of that nation, who are scattered not only in our provinces, but in Holland, Prussia, and different parts of Germany and the northern countries, the object being to make a slight restitution for the good teaching I have obtained in the schools of Paris in my youth and of which I have tried to make still better usage in my maturer years."

J. L. Petit[11] is quoted as saying of Palfyn's Treatise on Surgery that: "The truths concerning anatomy and surgery scattered in the best books, together with Palfyn's own discoveries as collected and set forth by him form a perfect whole, serving as a faithful guide in the practice of surgical operations disentangling the true from the false and sparing the trouble of reading the works of a great number of authors." In the Treatise on Surgical Operations, which deserves a high place in the history of surgery, Palfyn describing clearly, precisely and in detail the different surgical operations which were undertaken at this time, explains the procedures, necessity and applications of operations. In the introduction he gives the following precept, that in the need for and carrying out of an operation the questions in the following verse must be answered:

*Quis, quid, ubi, quibus auxiliis, cur, quomodo, quando?*

Palfyn discouraged a blind faith in the acts of others and taught the necessity of regarding acts in the light of science and reason and thus it was he justified the innovations which he had introduced in his book, *e.g.* suture of wounds of the intestines, a new explanation of the cause of hernia and strangulated hernia and the cure of the latter by operation. The author was "convinced that the edges of a wound of the intestine would not unite, but would adhere to the tissue of the skin or peritoneum." He proscribed continuous sutures for wounds of the intestines "as they irritated the parts by the multiplicity of punctures, and diminished the caliber of the canal, interfering with the circulation in the intestine and thus causing death." He discusses paracentesis, an operation for empyema, and the treatment of cancer of the breast.

According to Palfyn it was very difficult to recognize cancer in its early stage, when he said it was curable. An operation of his for cancer consisted in "cutting the skin in a cross, extirpating the 'scirrhus' from below upwards, so as not to be hindered by the bleeding." He advised cauterizing all the little tubercles immediately situated under the skin. In ulcerated cancer of the breast he amputated the entire breast; performing Bidloo's operation, which in Jourdan's[12] Histoire de la médecine, Paris, 1815, translated from the German of Kurt Sprengel, 1794-1795-1796, vol. 8, page 437, is described as follows:

"He placed a pad in the axilla of the affected side, then placed the forearm under the patient's back, grasped the breast and tied it firmly at the base with a ligature. He then plunged a stilet either transversely through or in front of the pectoralis major muscle, raised the ligature and cut the breast from above downwards with a sharp razor. The hemorrhage, which was slight, as only vessels of small caliber were divided, was arrested with lint, gypsum, and burnt calf's liver."

For the relief of strangulated hernia he advised operating and invented a bistoury for this purpose.

Fig. 7.—Monument to Jan Palfyn in the Church of Saint Jacques at Ghent, designed by Charles Van Poucke, Cura Collegii Medici Hujus Urbis Aere Munificentia—Plurium Bonarum Artium Remuneratorum Erectum Anno. 1784.

Haller,[13] in speaking of this instrument, says: "Cultrum herniarium, similem illi Ledrani."

His works met with the esteem of such men as Winslow, Geoffrey, Carron, Duverney, Mery, Petit, Morand, Devaux, Heister, Haller, Peeters, Somers, Verheyen, Ruysch, and in the introduction of his Surgical Anatomy, published in 1726, the following statement is attributed to Albinus and Boerhaave: "Before him no author had so methodically and clearly, with such meaning and intelligence, combined anatomy with surgery."

Palfyn having spent much time studying the diseases of the eye, especially cataract, was about to publish a work on the cause and treatment of cataract, when a treatise on the diseases of the eye by Jean Antoine[14] (1707) appeared, followed by Bris-

seau's[15] work on "The Nature of Cataract," Paris, 1706. Palfyn translated Antoine's work into Flemish, supplementing it by additions of his own. This work[16] ("The Surgical and Medical Treatment of Diseases of the Eye") appeared at Leyden in 1714 and embraced the entire knowledge then extant of the anatomy, physiology, pathology, and treatment of the eye.

It is generally known that the forceps, consisting of two non-separable parts, were probably used by the ancients, and the claims of Peter Chamberlen and others mentioned in this article to the invention or reinvention of the forceps are familiar to us, but the reasons why credit for the invention should be given Palfyn have not been sufficiently recognized.

The lamentable manner in which obstetrics was practised at this time did not escape Palfyn's attention as is attested by his writings. In his work on osteology he described with particular care the bones of the pelvis, making a differential study of them in the sexes and discussing the mooted question whether the pelvic bones separated during parturition, said with irony that "the midwives questioned upon this point had decided the question affirmatively."

In his "Treatise on Surgical Anatomy" the following passages, of which a literal translation is given, indicate his familiarity with obstetrical practice.

Page 208. "Surgery is of no great help in natural delivery, that is to say, when the infant is at term, as the child and mother are well arranged to each other and as the infant presents itself in a favorable situation, that is to say, that it presents the head first, or the feet first, as obstetricians are not in accord which of these two situations they consider the most favorable position. But when the delivery is contrary to nature or because the infant presents itself in positions the most bizarre or because it is necessary to deliver a woman in an unnatural manner (de force), or because it is accompanied by extraordinary casualties, when nature can do nothing by herself, the delivery which depends entirely upon art demands upon the part of the surgeon a great dexterity, as these are the operations the most intricate and difficult."

Page 219. "I have often observed in making an incision in the uterus in the Cæsarian operation that its thickness was at least the thickness of a finger in a woman seven to eight months pregnant."

Goffin[11] says of Palfyn that having seen the operation of cesarean section and the operation with the so-called sharp hook result disastrously to both the child and the mother, he gave much thought to this subject, and finally decided that if the head of the child could be seized by an instrument in the same way as by the palms of both hands, the life of the child would be saved. This simple conception of Palfyn's changed the face of obstetrics "and by many he is considered the inventor of the forceps."

On page 307 of the first part of his Treatise on Surgery Palfyn states that: "The doctor is often the cause of the death of the child by inflicting a head wound, demonstrated in a case which I witnessed not long ago, where the fœtus, apparently dead, was with the aid of an iron hook inserted in the occiput, extracted. It was alive but lived only one day. But what shall I say? There are many difficulties in medicine which cannot be overcome by the wisest physicians."

He cites another case on page 388 of the same work. "When I came back from Paris to the city of Ypres I saw a child three months old, of a French drum-major, which being born with the arm first, had its arm cut off at the elbow by the doctor, who thought the child dead, but after birth found it living."

According to Herman Tronckey[17] (City-Operator, Obstetrician, Cutter for Hernia and Stone at Amersfoort, in a Treatise on Obstetrical Practice, Amsterdam, 1728) Palfyn, on one of his visits to Boerhaave, made a drawing of a blunt hook, which he said, could reach higher in the genital tract than the hand. And Boerhaave replied: "It would be better to forge horseshoes than the 'Mains.' Recollect, my friend, that the inventor is the finder of the beggar's purse."

The instrument, so crudely drawn, subsequently became known as "les mains de fer" or "tire-tête" of Palfyn.

The following are translations of some of the passages concerning Palfyn in the work of Antoine Reiss[18] of the University of Strasburg, 1816.

"Obstetricians seem to have made the greatest progress since learning how to deliver the fœtus by the feet and the invention of instruments more convenient in extracting it by pieces in cases of absolute necessity. They early recognized how insufficient and ineffective were the means at their disposal. The wretched example of infants delivered living, but wounded and murdered by sharp instruments, led to means to deliver the fœtus by the head without wounding it. Palfyn presented to the Royal Academy of Science of Paris in 1721 an instrument with which he could, as with artificial hands, help the delivery of the head.

It seemed that nothing better could be desired. He did not wish to make his instrument known to the public before this society of savants had accepted it.

The instrument of Palfyn was first known as the tire-tête or mains de fer of Palfyn. The tire-tête of Palfyn was inconvenient in that each branch was a separate instrument, and each of the two branches was manipulated by one hand. The result was that the head of the fetus could not so forcibly or effectively be handled by the tire-tête as if the two instruments were but two branches of one instrument. But it is this defect of the tire-tête of Palfyn which proves its origin and which authorizes us to award the honor of this invention to this zealous and disinterested surgeon."

Ignace Rist,[19] quoting the historical part of a work by Mulder, a Dutch obstetrician, which was translated into German by Schlegel in 1798, says, regarding the origin of the forceps:

"If we refuse the credit of the invention of the forceps to Rueff,[21] a surgeon of Zurich, Switzerland, at least we cannot deny that he was the first obstetrician who conceived the happy idea of delivering with pincers a living child from the pelvis of the mother. His forceps are not furnished with the murderous teeth destined to crush the head of the fœtus and we can exert a pressure more or less strong with this instrument. After Rueff, the first who merits citation is unquestionably Palfyn. He directed the attention of a learned society to his invention. The spoons of his forceps adapt themselves well to the head of the fœtus and the branches are to be introduced separately."

"Jacques Rueff,[20] in his work, De Conceptu et Generatione Hominis, 1554, gives a description and

picture of a pair of flat pincers by which the head of a dead fœtus can be extracted without tearing it." (Goffin.[11]) But Broeckx[21] says that in neither France, Germany, Holland, nor Belgium was there a forceps known other than that of Palfyn before 1721.

In connection with their claims to earlier invention and especially the claim of Chamberlen referred to later, Mauriceau's experience is interesting.

Mauriceau[22] cites the case of a woman 38 years old, a primipara, in labor for eight days, the membranes ruptured the first day, without any dilatation of the cervix and the child was dead four days, he "feared to do a Cæsarian section, as it is always fatal for the mother." He said "Chamberlen attempted to deliver her and worked for three hours over her, only stopping to take breath."

The woman died and at the autopsy Mauriceau found the uterus torn and pierced in many directions by the instruments which Chamberlen used. "Chamberlen," Mauriceau says, "had come to Paris and had been there six months in the hope of making his fortune, proclaiming that he had a secret for accouchements of this character, and has offered to sell the secret to the first physician to the King for 10,000 escus."

Mauriceau adds: "The extraordinary difficulty which was encountered on this accouchement has made me invent an instrument which is easier and surer than the hooks."

It is evident that Chamberlen did not use the forceps in this case or Mauriceau would have spoken of them. Mauriceau gives a picture of his own instrument in his work (1694). It was a blunt-hook similar to that seen in the work of Paré and which he recommends for extracting the head of a fœtus remaining in the uterus.

Rist[19] cites the view of Levret as follows:

"One sees in Ambroise Paré[23] (De la Génération, liv. 18, ch. 33) a blunt-hook in the form of a spoon. Levret thinks that Palfyn obtained the idea of his tire-tête from this instrument. However, the hook of Paré can be applied to only the forehead or occiput, but the superior end of the instrument of Palfyn is less curved, larger and adapts itself to the sides of the head. Many surgeons wished to appropriate the credit for the invention, among others Gilles Le Doux, a surgeon of Ypres, but the honor of it belongs to Palfyn."

Levret,[24] 1747, states: "It is about twenty-five years ago that Palfyn, a surgeon at Ghent and Demonstrator of Anatomy in that city, came to Paris to publish his anatomy. He presented at this time to the Academy of Sciences an instrument to draw by the head infants locked in passage. He received the commendation as being the inventor of it. But Gilles Le Doux, surgeon at the city of Ypres, objects, saying that he invented it."

Levret answers an anonymous critic in the *Journal de Savants*, August, 1749, thus: "Heister accords to the forceps the name of Palfyn."

At first the forceps were not generally used, probably, because obstetrics was confined to the ignorant hands of sage-femmes (midwives) who, as Mauriceau[22] says, "were sage only in name."

The conditions making the use of the forceps unpopular when first invented are expressed by Reiss[18] as follows:

"The success obtained by the forceps could not be other than fortuitous. The injuries and inflammations of the sexual organs were at first so often the sequence of the operation that it was impossible to form a favorable idea of the utility and harmlessness of this instrument when properly applied. The axis of the pelvis was not then exactly determined; the direction that one must give the instrument when introducing and extracting it was not then exactly known; the blades did not have a curve conforming to that of the cavity of the pelvis, their introduction presented much difficulty; the fourchette especially was often maltreated when the fœtus was extracted; the mechanism of delivery, the relation of the head of the child to the pelvis, the signs indicating the position of the head were unknown: so it was that the delivery of the fœtus by means of an instrument was done at hazard and not in a proper way."

The invention of Palfyn and the new and ingenious idea to seize the head by means of an instrument which could not injure it did not meet with popular favor. However, convinced of the utility and efficacy of his invention, Palfyn had many of them constructed and presented them to the members of the Royal Academy of Sciences at Paris and to anyone else who desired to use them. Laurent Heister,[25] one of the most celebrated surgeons of his time, who had journeyed in Holland, England, and in Belgium, where he met Palfyn, received one of these instruments and speaks as follows:

"Ita mihi relatum est ab amico, qui haec ferramenta mecum communicavit, nam Palfinus ipse hac de re nihil, quod scio, litteris prodidet." This writer gives in his work a design of the instrument and names it after Palfyn.

"Hardly had he made known his instrument than many voices were raised to claim the priority, Chapman and Chamberlen in England and Le Doux in Ypres pretending to have invented the tire-tête of Palfyn," writes Broeckx.[21]

Doubtless the idea germinated in the minds of many surgeons at the same time to terminate difficult labor, but they were guided by a culpable egotism and sordid interest and guarded the secret of their invention. They took the greatest precautions and would not operate with their instruments before anyone who could profit by them. The question has been asked why did not Palfyn mention his invention in any of his works. This might be answered as follows: The invention of the forceps by Palfyn dates only from 1721, all of his writings appeared before this, excepting the French translation of his surgical anatomy, which was published in Paris in 1726. During these five years Palfyn was working with Devaux on his "Anatomy," and it is probable that their failure to mention les mains de Palfyn, in this new publication, was due to their desire to include nothing in the work which might affect its being recommended by the Royal Academy of Sciences in Paris. It might have been that the case cited by Mauriceau at which Chamberlen used his irons had prejudiced the academicians, most of whom knew of the case, against any similar instrument until its worth had been proved. The forceps had not been generally adopted and Palfyn probably believed that his wide distribution of the instruments themselves among the obstetricians of France, Germany, and Holland was the best advertisment he could give them.

Rist[19] gives the following description of the forceps of Palfyn: "The tire-tête or mains de fer of Palfyn were formed of handles terminating above in two blades of which the concavities adapted themselves to the head of the fœtus. One branch after

the other was applied on the sides of the head and the fœtus pulled thus without hurting it or the mother."

"The blades were of steel, non-fenestrated, 21 cm. long, and 5 cm. at their widest part, gradually tapering as they approached the handles, which were made of wood and almost as long as the blades." (Goffin.[11]) See Fig. 4.

The photographs, Figs. 6 and 7, were taken for the writer some years since, while in Ghent. In Fig. 6 a reproduction of the forceps invented by Palfyn is seen crossed upon his cenotaph.

Laurent Heister,[25] contemporary and friend of Palfyn's, a recognized authority and Professor of Surgery and Obstetrics at Altdorf and Helmstedt, who corresponded with scientists all over the world, writes, eighteen years after Palfyn had presented his forceps to the Academy of Sciences at Paris, as follows:

"The modern physicians and surgeons who were the most skillful in the art of obstetrics have given themselves much trouble to invent an instrument by the aid of which they can save the mother and infant. *Palfyn is the first*, so far as I can learn, who has invented for this end, as I have already stated in article X, a sort of hook with the end large and obtuse, which I have had first engraved in my XXXII Plate, Fig. 16. This author has succeeded in delivering infants whose heads had been fixed and were immobile in the passage without hurting or tearing. But experience has taught me that success with their instruments is difficult and sometimes absolutely impossible, especially when the head is forcibly locked and the instrument has not sufficient grip, so that each of the blades leaves the head when one attempts to pull. I have appreciated for a long time that the instrument of Palfyn needs to be corrected and brought to greater perfection, and with this in view. I suggested in my 'Instructions in Surgery' that the two branches be united by means of a mobile axis or be bound strongly together so that they will press upon and hold the head more firmly and be less liable to slip. I see that my idea has been adopted by many obstetricians who, by joining the two blades on an axis or bond have given the instrument the form of a forceps or pincers by which they can extract either a child alive or dead, with an impacted head. However, when one is convinced of the death of the fœtus I prefer my hooks, Figs. 16 and 17, to the 'English forceps,' as they are accustomed to call them."

After spending considerable on the printing of his works, Palfyn died, at Ghent, on April 21, 1730. He was buried in a cemetery at that time surrounding the Church of Saint Jacques at Ghent. In 1783 and 1784 respectively the College of Medicine at Ghent erected a cenotaph and monument in honor of Palfyn in the Church of Saint Jacques. On the cenotaph, which is of black marble, are represented two branches of oak, the forceps and other instruments invented by him, and below is the following inscription (see Fig. 6):

Et Piis Manibus
Joannis Palfyn
Scriptis Anatomicis Et Chirurgicis
Per Europam Clari Obiit Die 21
Aprilis 1730. Aetatis Suæ 80
Posuit Collegium Medicum
Gandevense MDCCLXXXIII.

The inscription on the monument to Palfyn, evidently suggested by that on the tomb in Leyden, of his friend Boerhaave, reads:

Immortali Palfyni Genio.

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## REPORT OF A CASE OF PELLAGRA.

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Mrs. R. P., æt. 42, separated, scrub-woman, born in United States. Grandparents were born in Vermont. Parents were born and spent their lives in Steuben County, New York. There has been found no history of tuberculosis, syphilis, or insanity in the family.

The patient was born in Steuben County, New York, January 25, 1869. She had a meager country school education and has never been out of the county. She married at the age of twenty-five, and has had two children and no miscarriages. The youngest child, a girl of eight years, is normal, but the eldest, a girl of fifteen years, is somewhat backward. After the patient was married she suffered much privation and abuse from a drunken husband, and the last three years had to support herself and children by doing scrub-work and washing. She became slovenly and careless about her personal appearance and her home, and people who have known her well say that her manner had been for some time simple and childish. Her diet has consisted to a great extent of beans, pork, oleomargarine, baking powder biscuit, and during the last winter the family of three used only one ten-pound sack of corn meal.

During the last two years the patient consulted the writer for attacks of jaundice, diarrhea, and for a pronounced lassitude and inability to do any work without much exhaustion. In April, 1912, she worked in an advertising factory for two weeks pasting sandpaper on match-scratchers, having her hands in glue much of the time. In an interview with the factory manager, it was learned that there had been no occupational diseases among the factory hands.

On June 4, 1912, the patient applied for treatment for a small pustule with a surrounding red area on the dorsum of the right hand. Local treatment was of no avail, and the redness extended first over the dorsum of the hand and later the fingers. The redness at first was light in color, gradually changing to a deeper shade, and finally to a dark mahogany color. The dermis was puffy with numerous vesicles showing beneath the epiderm, and at the end of a week the left hand began to be erythematous. The extension was from the dorsum of the hands to the dorsum of the fingers, then on June 11 a slight redness appeared on each wrist, and in three days they were encircled with a triangular point, extending a short distance upon anterior surface of forearms. The palmar surface of hands and fingers was not involved, and at no time was there any dermatitis of any other portion of the body. She next began to complain of prickling and tingling sensations in arms, legs, and the dorsal region became sensitive, and it was noticeable that she always wanted her feet uncovered on account of a constant sensation of heat. In July she did not menstruate, hemoglobin was 60 per cent., blood pressure systolic 128 (Faught); urine examination showed specific gravity 1006, reaction acid, trace of albumin, slight amount of indican, decreased phosphates; blood picture showed a moderate eosinophilia; there was exophthalmos with enlarged thyroid, pulse 96, no tremor. July 21, 1912, a bloody diarrhea of from six to thirty defecations daily set in, which continued till her death. A stomatitis developed, with inability to swallow solids, the tongue being bright red and sensitive. The depression was, at times, marked, but suicidal tendencies were never manifested. She would lie in bed by the hour, seldom speaking, although she recognized everything that went on about her, and would comment on the previous day's happenings. A left Babinski and left ankle clonus developed, which extended to the right with increased knee-jerks. She had complete anuria from June 29 to July 3 with convulsions. She had

A Case of Pellagra.

Cheyne-Stokes respiration; respirations were from three to ten per minute, and pupils did not react. The latter part of July all reflexes were abolished, large decubiti developed, the anus, perineum, and vagina were completely denuded, the dorsum of hands became dry, parchment-like, and had commenced to exfoliate when she died on July 28, 1912.

Autopsy showed a poorly nourished and emaciated adult female, weight about seventy-five pounds, enlarged thyroid; recent hypostatic congestion posterior portion both lungs, slight adhesions lower left lobe of lung; small normal heart with no areas of thickening of the cardiac valves or aorta; increase of connective tissue in liver, gall bladder having thickened walls and containing forty small stones; spleen, increase of connective tissue; stomach dilated and injected; kidneys, cortex thickened, small cysts in cortex of left; intestines injected, several large clots on omentum; uterus and ovaries atrophied; bladder walls thickened; appendix normal.

Microscopical examination of the brain was made by Dr. Charles B. Dunlap of the New York Psychiatric Institute. Gross examination of the brain, which was of good size, was essentially negative; there was slight grayness of the pia, rather unusual tenderness of the brain substance, and a somewhat swollen appearance.

Microscopical examination showed the pia mater everywhere to be rather cellular—sometimes very cellular—the cellular elements being mainly of endothelial type, but a number of lymphocytes and sometimes a few polynuclear leucocytes were also found.

Nowhere in the cortex was there any pronounced neuroglia reaction, at most a few shrunken spiders were present in the first layer. The smaller nerve cells showed dark stainability with often dark, poorly defined nuclei, the so-called "shrinkage alteration" described by Dr. August Hoch. The largest nerve cells (Betz cells) of the motor area and some of the pyramids next in size showed extensive axonal alteration of the type seen in "central neuritis," as described by Dr. Adolf Meyer. These cells also contained a good deal of pigment and fat stains showed considerable lipoid substance in most of the larger nerve cells and about the neuroglia nuclei. The satellite cells were somewhat increased around the nerve cells and along the blood vessels, but not greatly so. The vessels generally were thicker than normal and the small branches entering the cortex were not only thickened but their walls were unusually cellular, a sort of endothelial activity recalling that seen in the pia. No granulations were found in the fourth ventricle.

The cortex in general was orderly and no infiltration was seen in the sheaths of the blood vessels, merely the endothelial and satellite cell increase, as above described.

## DISEASES OF THE LABYRINTH.

### WITH SPECIAL REFERENCE TO THE METHODS OF EXAMINING THE LABYRINTH IN THE CONTINENTAL CLINICS.

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*Physiology.*—Since the year 1825 various observations have been undertaken to demonstrate a certain connection between the internal ear and movements of the body and eyes. Ewald's experiment proved that there is a connection between the endolymph in any one of the semicircular canals and definite movements of the eyes and head. He made a fistulous opening in the right horizontal canal of a pigeon, 1 mm. behind the ampulla. After sealing the canal behind the artificial opening he used a compression and rarefaction syringe. On compression of the syringe the endolymph could move only toward ampulla, the other end being sealed. On aspiration, the endolymph could move only in the opposite direction, from ampulla to narrow sealed end.

On compression a steady, slow horizontal movement of head and eyes toward the left took place, which (we will shortly see) corresponds to a *horizontal nystagmus* toward the *right*. On aspiration a steady, slow horizontal movement of head and eyes toward the right took place, which corresponds to a *horizontal nystagmus* toward the *left*. This experiment demonstrated that the definite movements of the head and eyes depended upon the direction or course the endolymph took in any given canal.

We have thus seen that Ewald, through his experiment, caused motion of the endolymph with its resulting nystagmus. But what is "nystagmus?"

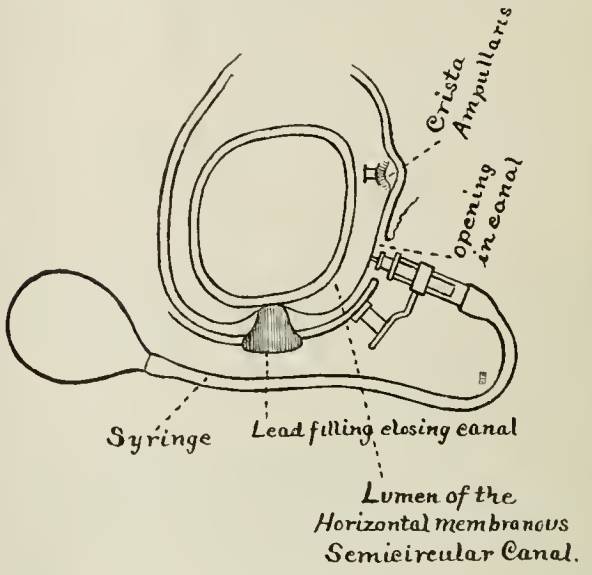


FIG. 1.

What methods (especially for human beings) can be brought into play to produce nystagmus?

*Nystagmus* (from the Greek word meaning to nod) is distinguished by rhythmical movements of the eyes of unequal velocity, and is, therefore, said to have two components, the quick in one direction and the slow in the other. The direction of the nystagmus is designated by the direction of the quick component, as this movement is most easily seen, though in reality the slow component is produced by the vestibular irritation. When the eyes are voluntarily directed toward the quick component it is characteristic of vestibular nystagmus that it increases in intensity and diminishes or ceases completely when the eyes are directed toward the slow component. The hair cells of the ampulla are pulled upon by the flow of the endolymph and this impulse is transmitted through the vestibular nerve to the medulla, and from there to the ganglion of the nerves supplying the muscles of the eye.

Methods for producing Nystagmus: (*a*) Turning Test; (*b*) Thermal: cold water irrigation, hot water irrigation; (*c*) Electrical—galvanic current.

*Vestibular Nystagmus Due to Turning.*—Under physiological conditions we assume that the endolymph in the semicircular canals is put in motion by turning a person and reflexly nystagmus takes place. In order to simplify matters we will assume a person is before us whose left labyrinth has been destroyed (disease). We are testing his right labyrinth. He is placed in a revolving chair with head and body erect. This position brings the horizontal semicircular canal into play so that it can be irritated.

Our subject is being turned to the right, in a direction from the tip of the nose toward the right ear, and we observe that during the turning he has nystagmus (primary) to the *right*. On sudden cessation of turning he has nystagmus (secondary or after nystagmus) to the *left*.

How do we explain this phenomenon? We will now assume that we are observing the right semi-

circular canal from above. When the turning commences the endolymph (and perilymph) move in the same direction in which the canal and hair cells are turning (to the right) (Fig. 2); but through inertia *slower,* so that we get a direct displacement between the endolymph particles and the

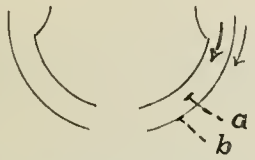


FIG. 2.—Schematic. Right and left horizontal semicircular canal seen from above. Arrow shows direction of movement of (a) endolymph; (b) canal wall.

wall. That is from the canal to the ampulla (Fig. 3).

From the experiment of Ewald we know that such a movement brings forth *nystagmus to the right.* On sudden cessation of turning, the canal remains stationary. The endolymph through its

FIG. 3.

inertia keeps on moving to the right for a short time. We again get a direct displacement between the endolymph and wall; but now in the opposite direction. That is, from the ampulla to the canal (Fig. 4).

We again come back to Ewald's experiment; a movement of the endolymph from the ampulla to the canal, gives us *nystagmus to the left.* In the

FIG. 4.

manner in which we especially irritated the horizontal semicircular canals, we can irritate the other canals. We must simply change the position of the person's head during the turning.

*How to Apply the Turning Test Practically.*—Take your regular revolving office chair. Seat your patient in the chair, the head 30 degrees forward, in order to bring the horizontal canal to a horizontal level in the plane of turning. Nystagmus is diminished through fixation of vision, therefore place a pair of opaque spectacles on the patient or have him shut his eyes or, still better, use on the patient Bartel's convex spectacles, through which you can observe his eyes all through the test; at the same time there is no fixation of vision.

As explained, the patient has nystagmus while turning (primary) and on sudden cessation of turning (secondary or after nystagmus). It is hard to observe nystagmus and turn a patient at the same time. For practical purposes we disregard the primary nystagmus and only observe the after nystagmus, from which we draw our conclusions. It is self-evident that in turning we irritate both labyrinths. It is impossible to irritate one labyrinth when the other is functionating. Ewald's experiment gives us two definite facts:

(1) A movement of endolymph from canal to ampulla in the right horizontal canal denotes nystagmus to the *right*; a movement of endolymph from ampulla to canal denotes nystagmus to the *left.* On the contrary, in the left horizontal semicircular canal, the movement from canal to ampulla causes nystagmus to the *left*, and *vice versa.*

FIG. 5.—Application of the Turning Test.

(2) The endolymph movement from canal to ampulla, in both right and left semicircular canals, causes a stronger irritation of the hair cells than the reverse.

After cessation we know that on turning to the right according to the law of physics, a movement takes place in the right horizontal canal from ampulla to canal and in the left from canal to ampulla (Fig. 6).

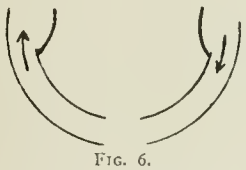

FIG. 6.

The nystagmus produced by this movement will be in the same direction. When both canals have the same irritability the irritation from the left canal will be definitely stronger (movement from canal to ampulla) than the irritation from the right. Thus we can consider the after nystagmus to the left as measuring the irritability of the left semicircular canal. The reverse, the after nystagmus to the right, measures the irritability of the right semicircular canal. When we want to measure through the turning test the irritability of the right semicircular canal, we must turn the patient to the left, in a direction from the tip of the nose toward the left ear. On the contrary, in measuring the irritability of the left semicircular canal we must turn the patient to the right, in a direction from the tip of the nose toward the right ear. In order to induce maximum irritability of the labyrinths, Bàràny found that we must make ten turnings in about twenty seconds.

Florens discovered the law that each semicircular canal produces nystagmus in its own plane. It simply depends on the position of the head. We irritate the different canals according to the relation of the canals to the plane of turning. This is brought about through the various positions in

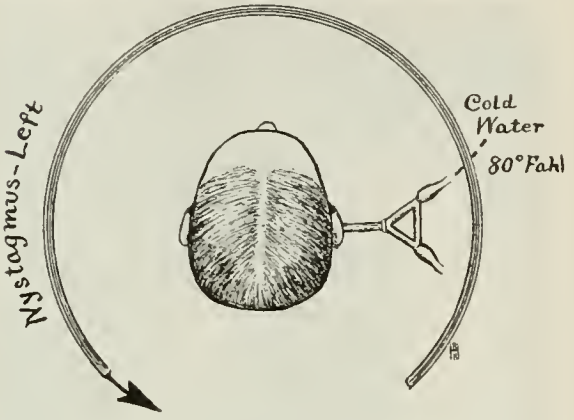


Fig. 7.

which the head is placed. The horizontal canals are best irritated when the head is 30 degrees forward. It is hardly possible to irritate one set of canals alone; usually another set is irritated at the same time, moving the head backward or forward, causing an irritation of the superior canals as well as the horizontal.

We consequently get two kinds of nystagmus, *horizontal* and *rotary*, from the superior canals.

If one is turned with head 90 degrees to the shoulder the superior vertical canal is stimulated. The resulting nystagmus is *vertical* (with relation to the head). If one is turned with head 90 degrees forward, the posterior canal is stimulated. The resulting nystagmus is rotary.

Now, to come back to our patient or subject. Practically it is always necessary to turn in both directions in order to have a ratio of comparison. We have turned him ten times to the right, head 30 degrees forward. On sudden cessation of turning we get horizontal nystagmus to the left, which is pronounced and lasts a certain length of time. That, we assume, is the measure of irritability of his left semicircular canal. We rest a few minutes to allow the reaction of the test to pass and then turn him to the left. We get after nystagmus to the right, pronounced and lasting about the same time. We consequently assume that both canals or labyrinths are equal in regard to irritation. They are normal.

We test a second subject. Turning him to the right, he has after nystagmus, pronounced and lasting. On turning him to the left, he has after nystagmus to the right; it is weak and lasts only about half the length of time. We naturally conclude that there must be some condition present which causes an interference with the normal irritability of his right horizontal semicircular canal (labyrinthine disease). This is the basis of the turning test. After some practice, one tells instinctively the difference in irritability between the two labyrinths.

In general the test is not very reliable, for we are irritating both labyrinths at the same time, and there is no way of telling the amount of influence one labyrinth has on the other.

This brings us to the caloric test, which is superior, because each labyrinth is tested separately.

*Physiological Caloric Nystagmus* (Bárány).—This is made with (*a*) cold water irrigation, or (*b*) hot water irrigation.

We place our subject in a chair, with head and body erect. This is the definite position for irritation of the right horizontal canal. Irrigate his right

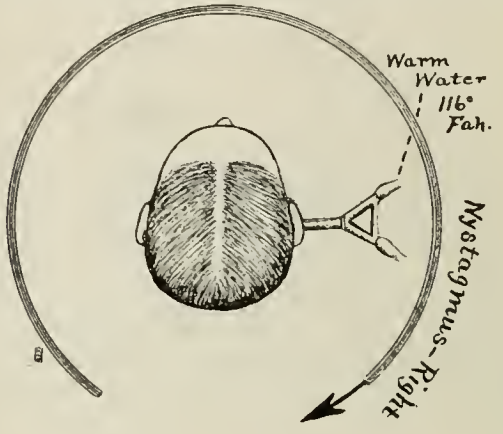


Fig. 8.

ear with cold water. We notice shortly nystagmus to the left (opposite side of irrigation).

What has occurred? The horizontal canal is so placed that when the head is erect so that the zygomatic process is horizontal, the horizontal semicircular canal is not really horizontal. It forms an angle of 30 degrees with the lower surface of the horizontal plane. Now, according to physical law,

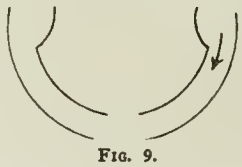

Fig. 9.

when various parts of a definite fluid do not possess a general temperature, usually a movement takes place in the fluid. This movement causes changes in position of the fluid. The heaviest fluid, which is in general the coldest, sinks below. We have the same condition in the labyrinth. When the endo- and perilymph are cooled, a movement takes place toward the lower level; in this instance from ampulla to canal (Fig. 9).

On the other hand, when heated, the movement takes place from a lower to a higher level, *i.e.* from canal to ampulla (Fig. 10). This movement

Fig. 10.

of the endolymph causes a repetition of the Ewald experiment. Accordingly, when we irrigate with cold water and a movement takes place from ampulla to canal we get nystagmus to the side opposite the irrigation.

On the contrary, irrigating with warm water causes a movement from canal to ampulla, and the resulting nystagmus is to the right or side of irrigation.

We must credit Brünings for his ingenuity in putting the application of this test on a standard practical basis. Working on the theory that the canal is a ring in which fluid (endolymph) is moving, he showed through a series of experiments

that the most favorable condition for the movement of endolymph to take place in the horizontal canal was when the canal was in a vertical position. This was designated by him as the "optimum stellung" (optimum position) (head 60 degrees backward). The contrary, where the canal was

Fig. 11.—The Optimum Position

horizontal, head 30 degrees forward, he designated as the "pessimum stellung" (pessimum position), it being unfavorable for endolymph movement. Caloric nystagmus, due to irritation of the horizontal semicircular canal, attains its maximum in the optimum position, and is almost or completely extinct in the pessimum position.

To come back to our patient. He is seated, head

Fig. 12.—The Pessimum Position.

60 degrees backward and right ear is being irrigated (with cold water). Doing the test roughly, we bend the subject's head backward and guess when it is about 60 degrees. We take a Politzer bag or a douche bag, with rubber tubing attached and pointed or olive tip at end of the tubing, and irrigate the ear until nystagmus takes place. Bárány advised 80° F. when using cold water and 116° F. when using warm water. All this was a matter of guesswork. The strongest factor in judging the irritability or non-irritability of a labyrinth was personal and practical experience through con-

Fig. 13.—The Otogoniometer.

tinued observation. There was no standard to go by. All this is done away with through the two splendid instruments invented by Brünings: The *otogoniometer* and *otocalorimeter*.

*The Otogoniometer.*—The principle of the otogonimeter is to show the direction of the horizontal semicircular canal and to place the eyes in a lateral position without causing interference with convergence and accommodation. It consists of a self-retaining metal band, which fits around the head. There is also a fixed semicircular scale (*a*) and a movable scale (*b*), to which is attached a pointer (*c*). The instrument is fastened on the patient's head so that when the pointer is horizontal it is in a direct line with the zygomatic process. The pointer is then moved 30 degrees upward according to the attached scale, so that the pointer and an imaginary line through the central axis of the horizontal canal unite. The head is then bent backward until the pointer is vertical. The horizontal canal is then in a vertical position, or after Brünings in the optimum position. There is a second movable pointer (*d*) which glides in a right and left direction on the fixed semicircular scale. It has a small mirror attached to the extreme end. The mirror is set so that the person tested sees the reflection of some object in the room. When the rod is placed on the scale marked 50 degrees the line of vision is correct. Fixation of vision takes place without accommodation and convergence. When fixation occurs with accommodation and convergence it has a disturbing influence on nystagmus.

*The Otocalorimeter.*—The otocalorimeter is an instrument that allows us in a practical way to measure the irritability of the labyrinth through the definite quantity of water used when irrigating. It consists of two glass receptacles, a large one above with thermometer attachment, for holding a quantity of water of a definite temperature; and a small one below, which serves to measure the quantity of water used until the instant nystagmus sets in.

One of the important features of the otocalorimeter is the ear piece, because it gives us regularity in introduction and excludes trauma. It consists of a double current metal olive, which is connected to both glasses with two rubber tubes. Water leaves the upper glass, goes to the ear, then flows into the measure glass below. There are 3 scales

on the measure glass. The first designates the quantity of water used, the second and third designate directly the irritability of the labyrinth under examination, measured through the quantity of water used until we get nystagmus. This irritability is compared to a normal standard which corresponds with an assumed normal labyrinth that gives nystagmus after using 70 c.c. of water, temperature 27° C. (80.6° F.). So that figures below the assumed normal standard (1 in diagram) signify exaggerated irritability; above, diminished irritability.

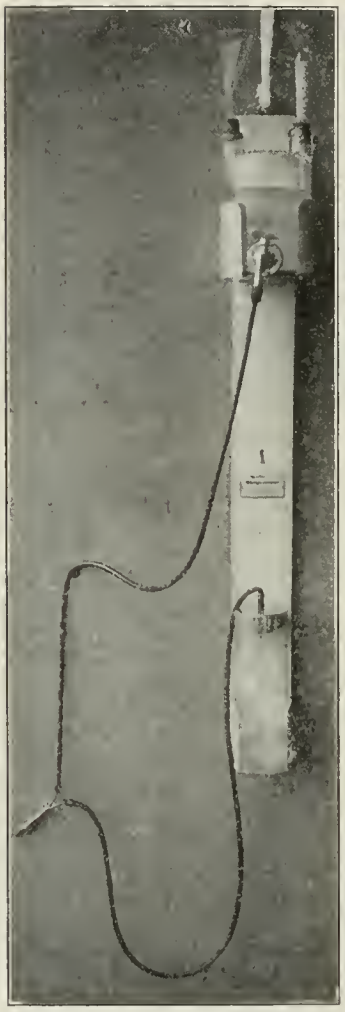

Fig. 14.—The Otocalorimeter.

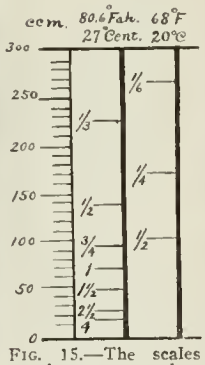


Fig. 15.—The scales on the measure glass of the otocalorimeter (enlarged).

When the irritability of the labyrinth is not greatly changed Brünings recommends the use of water 27° C. (80.6° F.) as cold irrigation. When irritability is extremely diminished he employs water of 20° C. (68° F.). In using warm water he recommends a temperature of 47° C. (116.5° F.). The object is to create a similar difference in number of degrees between the body temperature and the temperature of the irrigating fluid. The body temperature being 37° C. (98.5° F.), cold water used should be 27° C. (80.6° F.) and warm water 47° C. (116.5° F.); a difference of 10° C. (18° F.) above and below body temperature. To *recapitulate*: Take our patient, attach the otogoniometer, move the scale 30 degrees above the fixed scale, then move the head backward so that the pointer is vertical. Set the pointer with mirror attached laterally; to the opposite side when irrigating with cold water and to the same side when using warm water. See that the patient observes a distant object in the mirror. Irrigate with the selected cold or warm water until nystagmus sets in. The amount of water used gives us the measure of irritability of the tested horizontal semicircular canal.

*Galvanic Nystagmus.*—We place an electrode (current 10-24 m a) before the tragus of the right ear of a person. The other electrode he holds or it is placed elsewhere on the body. We find that if the electrode in front of the ear is the anode (+) he will get nystagmus to the left. If we replace the anode (+) by the cathode (—) we get nystagmus to the right.

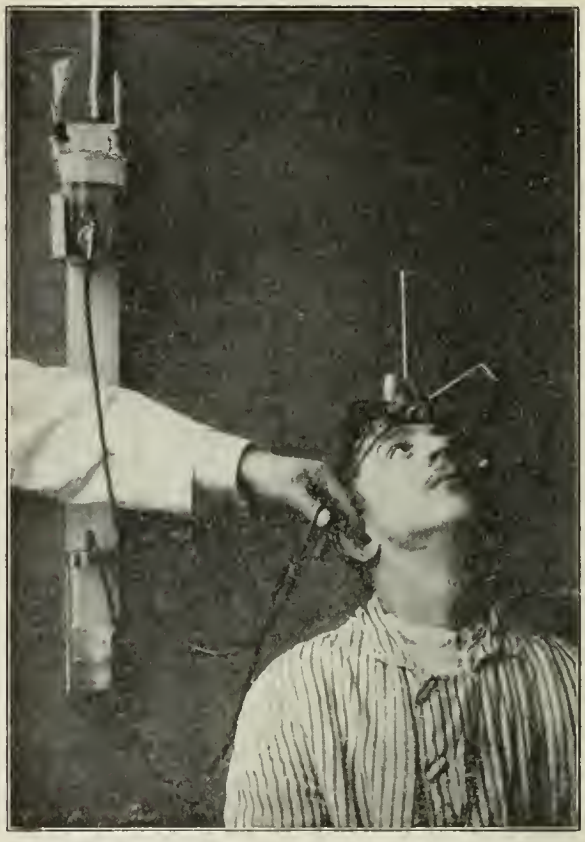

Fig. 16.—Practical Application of the Caloric Test.

Some authorities assume that the galvanic electric current directly stimulates simultaneously the terminal filaments of the vestibular nerve and the nerve itself. According to other authorities (Brünings) the galvanic electric current produces a similar movement of the endolymph (cataphoresis) to that the turning or irrigation induces.

Besides nystagmus, in which the eye muscles are involved, there are other muscles that are affected through irritation of the labyrinth with its resulting nystagmus. For example:

*The Bárány Indication Test.*—When a person has nystagmus and is told to point at a certain object, he will point either to right or left side of object, depending on his nystagmus. If he has nystagmus to the right, he will point to the left of the object, and vice versa. In a differential diagnosis between certain cerebellar and vestibular conditions, the indication test is an important factor. Another one of the principal symptoms resulting from irritation of the labyrinth is vertigo.

*Vertigo,* used synonymously with dizziness, is a sensation of movement a person experiences, whether he is really moving or not; this may be accompanied by reeling, and surrounding objects ap-

pear to be moving in some definite direction when in reality they are at rest. Vertigo in general may occur with or without any recognizable nystagmus. Labyrinthine vertigo is almost always accompanied by nystagmus.

We thus possess a means by which we can artificially produce vertigo. When this vertigo reaches a certain degree of intensity it is associated with objective symptoms. The patient is uncertain in gait and posture; he may even fall. When he falls through vertigo due to the labyrinth, the direction in which he falls always depends on the direction of the nystagmus. Thus, horizontal nystagmus to the right causes falling to the left and vice versa. Horizontal nystagmus to the left with the head turned 90° to the shoulder, causes falling to the front. Horizontal nystagmus to the left and head turned to right shoulder 90° causes falling backward.

The above facts are of vast importance when we attempt to make a differential diagnosis between labyrinthine disease and cerebellar disease. In cerebellar disease the direction that one falls is not regularly influenced by the direction of the nystagmus.

The objective symptom of vertigo, the tendency to fall, can be made more evident through the Romberg phenomenon.

*The Romberg experiment* consists in having a person stand with eyes closed and feet together. When there is no disturbance in static function the person will keep his equilibrium. When there is a disturbance he will have a tendency or fall to one side. The position in which we keep our body is due to three factors—tactile sense, optic sense, and vestibular static function.

In order to sustain equilibrium at least *two* of these three factors are necessary. Through simple closure of the eyes, one factor is eliminated. When the tactile (tabes dorsalis) or vestibular sense (labyrinthine disease) is destroyed, equilibrium is not sustained and Romberg is positive.

*Turning Sensation.*—The subjective turning sensation that the patient experiences is in relation to the direction of the nystagmus. Nystagmus from left to right gives the illusion that surroundings turn from left to right, and vice versa.

*Vascular and Gastric Disturbances.*—Occasionally we get pallor, nausea, vomiting, sea-sickness, etc., with nystagmus. These accessory symptoms are in general not very pronounced in cases of experimental nystagmus of a normal person. They may reach a high degree of intensity in some nervous conditions, especially neurasthenia and traumatic neuroses.

*The Comparative Value of the Different Labyrinthine Tests.*—The turning test is far easier to put in execution than the other tests, but it has two disadvantages. It is impossible to test each labyrinth separately and in cases of severe sickness it is really not permissible.

The galvanic test has the same disadvantages. Definitely each labyrinth can not be tested separately and occasionally, especially in nervous individuals, very disagreeable secondary effects follow.

The caloric test has one immense advantage that surpasses all its disadvantages. We are able to test each labyrinth separately. It is understood, that in measuring the excitability, as for example with Brünnings' system, we must take into account local conditions, which influence the conduction of the temperature, viz., stenosis of the external auditory meatus, polyps, inflammation of the middle ear, the condition of the drum membrane, presence of secretion, of cholesteatoma, etc. Again it is not always possible to carry out the test as advised with water, as in cases of dry perforation. In such cases, water is supplanted by paraffin or air (hot or cold) (apparatus from Lautenschläger). Notwithstanding these disadvantages, the caloric test at present is the major test.

*Pathology.*—There are a great many diseases of the labyrinth and its nervous system: (1) Intoxication (neuritis nervi vestibularis). (2) New tissue formation (tumors, etc.). (3) Conditions arising through vascular troubles (Ménière's disease). (4) Inflammations.

Of all these conditions the ones which interest us most are the inflammataions. How do they occur?

A primary spontaneous labyrinthitis, until the present, has not been positively observed. Those cases which were assumed to be such in all probability were and are the results of cured meningitis. We have to assume, with the exception of direct infection of the labyrinth, that all inflammatory conditions of the labyrinth are secondary inflammations, the sequels to other morbid processes in the system. The conveyance of the morbid agent can be effected (1) directly, (2) through vascular channels, (3) through extension by continuity. Besides a labyrinthitis the consequence of an accidental traumatic condition (fracture of the base) the *first group* is the most important of the forms of operative labyrinthitis. These may occur through direct infection; or the operative procedure may cause a latent inflammatory condition existing in the labyrinth to become acute; or finally an operation may cause an extension of a middle ear process to the labyrinth.

Under the *second group* (vascular channels) we note that morbid agents can be transported by way of arteries from distant parts of the system to the labyrinth and produce a metastatic labyrinthitis as in typhoid fever. Cases of labyrinthitis occurring through the venous system (phlebitis) are very rare.

The *third group* is that in which extension occurs by continuity. The labyrinth itself forms a system of cavities. The cavity of the middle ear lies on one side, and the encephalic cavity on the other. According to the source of infection, Goerke designates the condition as either a tympanic or an encephalic labyrinthitis. There are several natural ways through which an infection can pass from the encephalic cavity to the labyrinth. Among these may be mentioned the lymphatic spaces of the sheath of the auditory nerve, the ductus vestibularis (endolymphaticus), and especially the aquæductus cochleæ. Between the labyrinth and the series of spaces (tympanic cavity, eustachian tube, mastoid cells) there does not exist, with the exception of the vascular system (which can hardly be taken into consideration) any natural communication.

A propagation of infection from the series of spaces into the labyrinth can occur only after rupture of the labyrinth capsule. These penetrations into the labyrinth occur usually in the following order: the fenestræ, promontorium, and horizontal emicircular canal.

*Labyrinth Inflammations.*—The inflammatory conditions of the labyrinth (labyrinthitis) may be classified according to extension or according to the nature of the inflammatory condition. According

to the degree of extension there exists a circumscribed labyrinthitis, in which the inflammation is localized in one part of the labyrinth; or there may be a general labyrinthitis in which the entire labyrinth is involved. According to the kind of inflammation, we have on the one hand a serous labyrinthitis, and on the other a plastic labyrinthitis, which is only a form of healing process of these exudative inflammations.

*Outcome of the Several Forms of Labyrinthitis.*—The *circumscribed* form may continue to exist as such. It may also abate or through some condition become a general labyrinthitis. We must not forget to consider that there is a great tendency for inflammations of the labyrinth to become encapsulated.

The *serous labyrinthitis* may subside completely with conservation of function, or, on the other hand, pass into a plastic or purulent form.

The *purulent form* can also abate, but only after partial or complete loss of function, and change into the plastic form. When it does not abate, it progresses and causes cerebral complications. The channel of propagation can occur through the natural existing communications (ductus endolymphaticus, ductus perilymphaticus, meatus internus, vascular system) or through artificial ways created by the morbid process.

*Acute Exclusion of the Function of One Labyrinth.*—There is a train of general symptoms that goes with all cases of acute exclusion of the labyrinth regardless of cause and form. The condition may be due to acute purulent labyrinthitis, hemorrhage in the labyrinth the result of arteriosclerosis, leukemia, syphilis, fracture of the base of the skull, etc. Following the injury we get spontaneous symptoms, subjective and objective, such as nausea, vomiting, vertigo (with disturbance in equilibrium), and nystagmus, rotary and horizontal to the sound side. The patient assumes a characteristic position in bed. He lies on his sound side; which is always the side to which he has his spontaneous nystagmus (quick component). We know that vestibular nystagmus is diminished by looking in the direction of the slow component and increased by looking in that of the quick component. From the position assumed in bed the eyes are directed toward the slow component and all annoying symptoms are relieved. The patient finds lying more comfortable, for as soon as he tries to sit up, nausea, vomiting, severe vertigo, with apparent movement of surrounding objects, set in. A sensation of turning the body and inability to walk are often complained of.

A patient with the above spontaneous symptoms reacts in a certain measure when put through the different tests and we get a train of induced symptoms. The turning test in a case, where the right labyrinth is excluded, will give stronger after nystagmus to the sound (left side) on turning to the right than to the diseased side when turned to the left. The nystagmus to the diseased side usually lasts about 15 to 20 seconds. The nystagmus to the sound side about 15 to 40 sec.

The caloric reaction shows that the diseased labyrinth responds slightly or not at all to the irritation of the test. We derive the same results from the galvanic test. In case the condition in the labyrinth is such that there is an erosion of the bony wall (a fistula), we can (when the labyrinth is still capable of functioning) often induce a new phenomenon, viz.:

*The Fistula Symptom.*—Through compression and rarefaction of the air in the external auditory canal and tympanic cavity we get nystagmus. Compression and aspiration of the membranous canal through the fistula in the bone causes active nystagmus of some seconds' duration. The direction of the movement differs in different cases. Compression is always opposite to that of aspiration.

*Practical Application of the Fistula Test.*—An olive-shaped tip fitted into a Politzer bag is inserted tightly in the external auditory meatus of the diseased (say the right) ear. While the patient looks directly forward, sudden strong pressure is made on the bulb. When a fistula is present and the labyrinth is still functionating nystagmus will occur in most cases to the right and seldom to the left side, and by aspiration in most cases to the left and seldom to the right side.

As stated, the above enumerated symptoms come on suddenly. They can last a certain length of time and gradually abate. In rare cases, in addition to the labyrinth affection we get cerebral complications.

The opposite to this very acute form of labyrinth exclusion is a

*Latent Exclusion or Destruction of the Labyrinth.*—We will assume that one side is affected. The patient complains of attacks of vertigo, which may some on suddenly, and last from a few seconds to a few minutes. These attacks may be associated with or without an external cause. The external causes are rising or inclining the head backward or to the diseased side, rapid movements of the head, stooping forward, going from a hot to a cold room, or vice versa. The patient may quietly sit or sleep. An attack may occur while walking. There may be some nausea, but vomiting, as a rule, is not present. In general, when the eyes are in the extreme lateral position (either right or left), there occurs a weak, spontaneous rotatory or horizontal rotatory nystagmus, which is not influenced by movements of the head.

Caloric test of the diseased side is negative, no reaction. Caloric test of the sound side gives distinct rotatory nystagmus. Galvanic test of the diseased side for both anode and cathode is negative, or nearly so. Aspiration and compression tests are negative. The turning test, to the diseased side, head erect, produces horizontal after nystagmus to the sound side of about 30 seconds' duration. Turning to the sound side produces horizontal after nystagmus of about 15 seconds' duration. Usually the nystagmus due to the diseased side lasts about half the length of time of the sound side. There are no disturbances in equilibrium. The patient always gives some history of a running ear, acute or chronic, and of impairment of hearing. (The cochlea is usually involved.)

To come back to our classification, we will now assume we have a patient with a

*Circumscribed Labyrinthitis.*—The patient complains of attacks of vertigo as his main trouble. On going into his history you find he has an acute or chronic middle ear suppuration of some standing. There is impairment of hearing or complete deafness on affected side and occasionally tinnitus. His vertigo occurs with or without an external cause; practically the same as that described under latent labyrinthitis. The attacks may last from several seconds to several hours. They are accompanied by nausea, disturbances in equilibrium and sometimes vomiting. In the interval between attacks the patient feels per-

fectly well. On examination during an attack you find nystagmus, usually to the sound side. Occasionally the nystagmus is also seen to the diseased side. The caloric test and the turning test give an almost normal reaction. In these cases the fistula phenomenon is of prime importance. It is a great diagnostic point in differentiation between a diffuse labyrinthitis and a circumscribed. So long as the fistula symptom is present we can exclude a diffuse labyrinthitis.

A circumscribed labyrinthitis usually commences as an acute or chronic suppurative otitis media, then an erosion of the labyrinthine wall (fistula) occurs, with the resulting circumscribed labyrinthitis.

*Diffuse Labyrinthitis* (Serous, Purulent).—In our anatomical classification we mentioned a serous and purulent labyrinthitis. The difference is not only of an anatomical pathological significance, but is of great clinical value, especially from a prognostic and therapeutic standpoint.

The serous form almost always abates, while the purulent form has a worse prognosis. Operative interference is not necessary in the serous form, while in the purulent form it usually is. In both forms we get the general symptoms that have been described under acute destruction of the labyrinth. The symptoms are much stronger in the purulent form than in the serous form.

The presence of fever and complete loss of function of the labyrinth (total deafness, etc.) are almost positive signs that we are dealing with a purulent labyrinthitis. In the serous form we can also have almost complete loss of the labyrinth function, but in general the function is present to a certain extent.

*Diagnosis.*—Making a résumé of all that has been said of labyrinth disturbances, we notice two symptoms stand out prominently—vertigo and nystagmus. There are a great number of conditions that give vertigo and nystagmus besides labyrinthine affections. In making our diagnosis these conditions must always be thought of and taken into consideration. The history of each case is significant and of prime importance. A thorough examination of the ear and the application of the various tests almost always show if there is any connection between the spontaneous attacks of vertigo or vertigo and nystagmus, of which the patient complains, and the labyrinth.

Practically nystagmus always exists when the vertigo is of labyrinthine origin. The presence or absence of fever must be carefully looked into. Patients suffering from neurasthenia, arteriosclerosis, menopause have spontaneous attacks of vertigo with or without nystagmus. Those suffering from toxic influences, gastrointestinal trouble, smokers and drinkers have spontaneous attacks; almost all persons who have received an injury about the *head* complain of vertigo. These cases are of medico-legal interest. The history of the cases, the local ear condition, and the response to the various tests lead us to the correct diagnosis.

In meningitis we very often get nystagmus which is of intracranial origin, not vestibular. We base our diagnosis on the general meningeal symptoms present. Temperature, severe headache, vomiting, severe stiff neck, hyperesthesia, lumbar puncture, cloudy fluid, abducens-paralysis, the Babinski, Koenig, choked disc signs, etc.

The differential diagnosis between some cerebellar affections (tumor or abscess) and labyrinthine conditions is difficult. In both we usually get vertigo and nystagmus. The following table may aid in differentiation:

| Cerebellar Disease. | Labyrinthine Disease. |
|---|---|
| Nystagmus: Directed to diseased or sound side or both; to diseased side somewhat stronger. General tendency to grow stronger or may remain the same. Usually rotatory. | Nystagmus: Directed to sound side. Tendency to diminish and cease; Usually horizontal; may be both. |
| Labyrinth usually responds to tests. | Response to tests diminished or lost. |
| Choked disc usually present. | Choked disc absent. |
| Patient usually lies on diseased side. | Patient lies on sound side. |
| Placing patient on sound side increases his vertigo, vomiting and pulse. | Placing patient on diseased side increases his vertigo, vomiting and pulse. |
| Romberg Phenomenon: Eyes shut and feet together, patient sways or falls to either side, not depending on nystagmus or position of head. | Romberg Phenomenon: Eyes shut and feet together, falls or sways to diseased side, or depends on direction of nystagmus or position of head. |

It is of practical value to make this last comparison somewhat clearer. We have said that there exists in a majority of cases a definite connection between the direction in which a patient has a tendency to fall and the direction of his nystagmus when due to labyrinth disease, namely, nystagmus to the right, tendency to fall to the left and vice versa. In cerebellar affections (especially conditions of the vermis) the above definite connection does not exist. When we produce nystagmus to the right, instead of falling to the left, as in vestibular disease, patient may fall to the right or some other indefinite direction. There is absolutely no connection between the direction of falling and the nystagmus.

Lately Bárány brought out the "indication test," a test that is of vast importance in a differential diagnosis between labyrinth and cerebellar disease. Normally, when a person is shown an object, then told to shut his eyes and point with index finger at that object, he will do so correctly (Graefe's test.) When we induce nystagmus and no pathological condition is present a person will point to the right or left of the object, depending on his nystagmus. When a person has cerebellar disease, with or without having nystagmus, he will point spontaneously, not depending on nystagmus, to the side of the object. Where we induce nystagmus in such a person through any of our tests, we find that his pointing is hardly or not at all influenced. He continues pointing, as he did previously, spontaneously, almost or completely to side of object.

*Treatment.*—An acute labyrinthitis following an acute otitis media should not be operated. Rest and local treatment of ear may suffice. If operated, free exposure of the antrum mastoideum in the usual way is sufficient. *A circumscribed labyrinthitis* following an acute or chronic suppurative otitis media should be treated conservatively (rest, etc.). The local ear condition should be treated in the usual manner. If after sufficient observation operative interference is found necessary, do a radical mastoid operation and examine carefully the horizontal semi-

circular canal and promontory for fistula, caries and granulations. If the labyrinthine symptoms abate, the conservative treatment of the labyrinth was correct. If they continue or become aggravated, a labyrinth operation, partial or complete, is indicated.

A middle ear condition may cause a *diffused labyrinthitis* primarily, or a circumscribed labyrinthitis can become diffused, especially following a radical mastoid operation. If the condition is a diffused serous labyrinthitis, it is not grave and operative interference is not necessary.

If the condition is a *diffused purulent labyrinthitis,* it is dangerous. Very often complications set in—meningitis or brain abscess. As soon as a diagnosis is made, operate, if possible, before complications set in. There are several standard methods of doing a partial or complete labyrinth operation; the object in view is the removal of all diseased tissue and establishing free drainage.

1. The carious portion of the horizontal semicircular canal may be removed with a sharp curette.

2. The canal and promontory may be opened, curetted, and drained, either laterally or medially. By laterally, we mean opening the horizontal canal and proceeding upwards to the vestibulum, which is also opened. Medially, we open the vestibulum by way of the fenestræ and proceed to the horizontal canal.

3. The canal, promontory and spindel of cochlea (if found carious) should be removed.

4. The posterior portion of pyramid up to the internal auditory meatus is removed. This destroys the posterior and horizontal semicircular canals. Then the promontory is removed.

In doing the labyrinth operation there is always danger of injury to the facial nerve and a paralysis may occur. Bourguet's facial protector is recommended by some authorities.

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## SUBCUTANEOUS RUPTURE OF THE KIDNEY.*

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Injuries of the kidney are by no means of common occurrence, and the experience of any one man with them is necessarily limited. As to their frequency, Küster, in 7,740 injuries at his clinics at Basel and Berlin, saw only 10 cases; of these only 1 was an open wound. In 2,610 autopsies following injuries there were 13 in which the kidneys were damaged. Only one of these was of a penetrating nature. Israel records, notwithstanding a large experience of renal surgery, only one operative case (Ransohoff in Keen's Surgery). Statistics of wounds of the kidney have been collected by Maas, Keen, Küster, and others. The analysis of Keen's 155 cases shows 19 gun-shot wounds, 8 penetrating wounds, 118 subcutaneous ruptures, 2 partial nephrectomies from rupture, 6 traumatic hydronephroses, and 2 ruptured ureters. From this it will be seen that the subcutaneous rupture is by far the most common form of kidney injury.

Subcutaneous rupture of the kidney is much more common in men than in women. Of 299 cases collected by Küster 281 occurred in men. Küster says that injuries of the loin in men are more apt to cause rupture of the kidney than in women, in whom mobility of the kidney more easily occurs. The great preponderance of men over women in this series of cases is easily explained, however, by the greater exposure of men to injuries of all kinds. Rupture of the kidney is, as a rule, the result of direct violence. The mechanism of the production of the injury has been made the subject of experimentation by Küster, who has tried to show that in most cases it is due to the effect of a force (hydraulic in nature) acting through full vessels and a full pelvis, causing the kidney to burst along the lines radiating from the hilum in the direction of the tubules—that the kidney driven against the spine by the impact of the lower ribs, if distended by fluid, will tend to tear at the point of maximum impact of the ribs in a direction transverse to its long axis. It has been suggested that the direction of the rupture radiating from the hilum to the periphery is influenced by the lines of least resistance, indicating the original absence of vascular loops and of their accompanying connective tissue between the adjoining lobules of which the fetal kidney is composed (Piersol's Anatomy). In cases of crushing injuries of the side, laceration by direct impact of a rib may occur. This, however, is uncommon, as the ribs which are in immediate relationship with the kidney, the eleventh and twelfth, are but rarely fractured. Still more uncommon is rupture from muscular action alone. The mechanism in such cases is the same as in the cases due to direct violence, the violent muscular action adducts the ribs, forcing them against the kidney, and the kidney against the spine. Forcible anterior flexion of the spine, as from a weight falling on the shoulders, may cause compression of the kidney between the lower ribs and the ilium, and is, therefore, not infrequently followed by hematuria, indicating some degree of rupture of kidney substance (Piersol).

*Paper read before the Northwest Texas Medical Society, January, 1912.

Injuries of the kidney and its coverings may vary in degree from simple contusion to extensive ruptures or complete pulpifying of the kidney substance. The contusion may involve only the cortical portion of the kidney, or rents may extend deep into the kidney and involve the pelvis and larger renal vessels. According to the extent and location ruptures may be divided as follows: (1) Incomplete, *i..e.* involving the parenchyma alone, the symptoms being those of excessive renal tension; (2) complete internally, into the pelvis of the kidney; (3) complete externally, extending through the fibrous capsule; or (4) complete, involving both the pelvis and the capsule. Another, or transperitoneal group may be added, in which the peritoneum is involved in the external tear. Such cases are relatively much more common in children because of the absence of the perirenal fat. Tears on the surface of the kidney usually run horizontally or radially from the hilum with the tubules, and are most often on the anterior which is the least supported surface of the kidney. These injuries are often complicated by other lesions, as fracture of the ribs, fracture of the spine, and rupture of other abdominal viscera.

The symptoms of rupture of the kidney are general and local; primary and secondary. The primary general symptoms are those of any other severe injury, the symptoms of shock and hemorrhage. However, extensive injury to the kidney may occur without signs of shock appearing for some time. The primary local symptoms are pain, tenderness, and swelling in the region of the kidney and hematuria. The pain is dull and deep-seated, though paroxysmal attacks of acute pain may be caused by the passage of blood clots along the ureter. As perirenal extravasation ensues, the pain becomes more diffuse. Changes in position and deep inspiration increase it.

The swelling varies with the degree of the injury. It is caused by extravasation of blood and urine into the perirenal tissues. It is diffuse and ill-defined. If the peritoneum has been torn, symptoms of acute peritoneal irritation are manifest, though we may have tympanites, muscle spasm, and tenderness on the affected side from the retroperitoneal irritation which, in the presence of a large effusion especially, may be misleading. In a case of my own the only question at all about the diagnosis was whether or not there was intraperitoneal trouble. Occasionally a blocking of the ureter by a blood clot will give rise to a hydrohematonephrosis, in which case the feeling is distinctly of a localized and movable mass—the distended kidney.

Hematuria is the most valuable of the local signs, as pointing to the exact nature of the trouble. Pain, tenderness, and swelling in the loin may come from other sources than the kidney, but when we have those combined with the presence of blood in the urine the diagnosis can hardly remain in doubt. Hematuria is present in a very large percentage of the cases. It occurred in sixty-five of seventy-one cases tabulated by Maas, and eighteen out of twenty-six cases reported by Morris. It comes on soon after the injury and varies in intensity and duration. The urine may be simply smoky or contain such a quantity of blood as to clot readily. The hematuria may last for a few hours or many days, and may be followed by an albuminuria, which persists for a greater or lesser length of time. In some cases injury to the cortex of the kidney occurs without the presence of blood in the urine.

The secondary general and local symptoms are due to changes that take place in the kidney and perirenal tissues from infection or reactional processes following the injury and exudation of blood and urine. Infection may take place, ascending from the bladder in cases of catheter cystitis or other bladder inflammation, or by the migration of microorganisms through a weakened intestinal wall, or through the blood stream. In such cases the symptoms are those of an acute peritonitis, or an acute perinephritis. Aneurysm of the renal artery has been reported as the result of injury to the kidney, and hydronephrosis may be the result of previous trauma. The injury of the kidney itself may lead to infection with localized abscess formation, or a unilateral chronic nephritis. Anuria has been noted even where the injury was unilateral and of slight degree.

The chief immediate danger from rupture of the kidney is the hemorrhage. The late danger is infection. The outlook in any case depends on the degree of the injury. In 108 cases collected by Grawitz, 58 recovered. Many of the fatal cases had associated injuries of other organs. In fourteen instances the primary hemorrhage caused death, in seven suppurations of the kidney, and in three anuria. Of Küster's 306 cases, 222 were uncomplicated and had a mortality of 31 per cent. The injury is much more grave in children. The figures of Maas show a mortality of 85 per cent. in children under 10 years.

In many cases of rupture of the kidney spontaneous recovery takes place. With only a slight hematuria, a moderate amount of swelling in the lumbar regions, and the absence of the signs of shock, rest in bed may be all that is necessary to effect a cure. Strapping of the parts and anodynes may be necessary to relieve pain. Ergot, adrenalin, and other internal or hypodermic medication is of doubtful value in controlling the hemorrhage. The rest in bed should be prolonged as the hemorrhage is likely to recur. When the hematuria is severe, when a lumbar hematoma is growing, or when there are signs of intraperitoneal trouble, immediate operation is indicated. In cases of continued or intermittent hematuria it is better to risk a possibly unnecessary exploration early than to let the patient get into a condition unsatisfactory for operation.

The nature of the operation must depend upon the conditions found when the kidney is exposed. Where possible rents should be sutured or packed, and more or less completely severed portions of the kidney should be removed. The indications are to control the hemorrhage in some way and to provide a means of egress for the extravasated fluids. Extensive laceration or rupture of the larger renal vessels will necessitate nephrectomy.

Statistics show that, except in cases of mild contusion, early exploration gives the best results. Delbet collected 319 cases, of which 225 were treated without operation, with 103 deaths. In 50 cases the kidney was treated by suture, packing, or partial resection, with two deaths. In 44 cases primary or secondary nephrectomy was done with 11 deaths. The largest table collected is that of Watson. Of 273 cases treated expectantly, 81 died, a mortality of 30 per cent.; of 99 treated by a conservative operation, 7 died, or 7 per cent.; of 115 treated by nephrectomy 25 died, or 22 per cent. When it is considered that the majority of cases treated expectantly are those of mild degree and that those operated upon are the severer ones, and

that in many instances the operation is long delayed, there can be no doubt that early operation for rupture of the kidney is a life-saving measure.

I wish to append a brief history of a case that came under my observation a few months ago.

S. W., male, age 9. On May 28, 1911, a heavy empty barrel fell from a third-story window and (we could never learn just how, but probably on the rebound from the ground) struck the patient on the left side over the lower ribs. A physician was called who administered "first aid," and had him removed to his home. That night his family physician was called and he, as soon as he could obtain a specimen of urine, found that it contained blood. The boy's pulse from a short while after the injury was accelerated, his temperature somewhat elevated, and he complained of intense pain in his left side. His condition showed no improvement, and two days after the injury he was removed to a hospital where I saw him. Despite the early administration of a cathartic, his bowels had not moved in the forty-eight hours following the injury.

Examination showed a well-nourished boy lying propped on his left side with thighs and legs partially flexed and an expression that depicted great suffering. His temperature was 101°, pulse 120, and respiration 34. He could be made to turn on his back, but handled himself with great care and complained bitterly of pain while lying in that position; and would immediately turn back onto his left side when we would let him. His chest was resonant throughout on percussion, and the breath sounds everywhere were clear. The breathing was shallow and the patient complained of pain in his left side on taking a deep breath. The lower left side of his thorax and loin were covered with strips of adhesive plaster. The abdomen was distended, motionless, and everywhere tympanitic, except in the left loin, where there was an ill-defined area of dullness extending to about the anterior axillary line. The muscles of the left side of the abdomen were more resistant than those on the right, and palpation over the upper left side and loin was painful. A specimen of urine obtained at about this time was clear to the naked eye, and in view of this fact and that his general condition seemed a little improved, we decided we could safely watch him for a few hours more. The next morning, however, the urine again contained a large amount of blood and the dullness in the left side had grown definitely larger and we decided to make an immediate exploration of the kidney. The question came up on account of the tympanites, muscle-spasm, and constipation as to whether there might not be blood in the peritoneal cavity. We did not think so, however, because there had been no crampy pains and no nausea.

With the patient in a face-down position the kidney was exposed through a vertical incision. On opening the internal sheath of the quadratus lumborum muscle a dark, bloody fluid with urinous odor began to well up into the wound. On sponging this away we could see that the kidney was lacerated near its lower pole, and that considerable active bleeding was still going on. The lower one-fifth or one-fourth of the kidney was separated from the remainder by a tear that extended into the pelvis on the anterior surface. Where this tear reached the convex outer border there was another vertical tear extending up and down about an inch each way, and the radial tear extended around onto the posterior surface of the kidney for about an inch. The kidney might have been repaired or the lower part resected were it not that an attempt to deliver the kidney outside the wound showed it was not going to be an easy matter, that the extravasated blood and urine were welling up to obstruct our view, that there was considerable active hemorrhage from the kidney, and that our anesthetist warned us that the patient's pulse was getting bad. We decided that the quickest procedure would be the least risky and removed the kidney.

A cigarette drain was placed in the wound, this closed in layers, and the patient was put to bed on the affected side. The drain and the skin stitches were removed in forty-eight hours. The patient's convalescence was uninterrupted.

1420 North Ballinger St.

## A NEW METHOD OF TREATING THE TOXEMIA OF PREGNANCY

PRELIMINARY COMMUNICATION.

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Zweifel has aptly called puerperal eclampsia the disease of theories. This designation would apply with equal force to the toxemia of pregnancy since this is usually, if not invariably, the precursor of eclampsia. At present the most commonly accepted hypothesis is that the offending agent is elaborated in the processes of fetal and placental metabolism.

Perhaps the most significant and encouraging studies have been those made in connection with the now familiar "nitrogen partition," which have shown that nitrogenous substances are excreted by the kidneys in a state of incomplete oxidation. Various observers have endeavored to find the toxin in some imperfectly oxidized body, *e.g.* lactic acid, but these efforts have been barren of results. So many skilled observers in all parts of the world have been working in this field that it seems difficult to believe that any specific poison could have escaped observation.

May it not be that we have been looking too far for the cause of the symptom-complex, which we call the toxemia of pregnancy, but which should be called the pre-eclamptic condition? In other words, may not suboxidation itself be the real cause, or, at all events, a prominent factor? In pregnancy a woman needs oxygen more than at any other time. The clinical symptoms, from the subjective dyspnea, so common in pregnancy approximately normal, to the headache, edema, and final convulsions of profound toxemia, are strongly suggestive of lack of oxygen. This theory helps to explain why eclampsia occurs so often in robust and vigorous young women. These patients have a high oxidative equilibrium and are the first to suffer from oxygen deficiency.

Acting upon this theory, I have recently treated my toxemic cases by the free use of oxygen. Most of these cases were seen in my service at the City Hospital and four of them were of the severe type. Improvement and eventual recovery were noted in all. In one, that of a very intelligent patient, the relief afforded was so prompt and complete that it seemed difficult to ascribe it to mere coincidence.

I hope to give at some future time a detailed report of the above cases. Of course the number

is too small to enable one to draw positive conclusions. Perhaps some of my colleagues may be led to test this method. It can do no harm and will be found subjectively agreeable to the patient. Meanwhile I would suggest the free use of oxygen, either by inhalation or subcutaneously. This method of treatment in no way conflicts with milk-diet, catharsis, hydrotherapeusis, and other curative agents of proved efficiency.

I have found no reference either in English, French, or German, to the use of oxygen in the toxemia of pregnancy. It is true that oxygen has been used empirically in the cyanosis and respiratory obstruction that characterize the convulsions of eclampsia, but that is quite a different matter. . . . Since the above was written my attention has been called to the experiments of Healy and Kastle in connection with the so-called parturient paresis of cattle, which bears a remarkable clinical and pathological resemblance to eclampsia. Believing the disease to be of mammary origin, they report a remarkable series of cures *by the injection of the udders with oxygen.* This would seem to afford striking confirmation of the theory which I have ventured to advance.

203 West One Hundred and Third Street.

## REPORT OF A CASE OF SINUS THROMBOSIS; OPERATION; RECOVERY.*

By I. GRUSHLAW, M.D.,

NEW YORK.

VISITING OTOLOGIST AND LARYNGOLOGIST, THE PEOPLE'S HOSPITAL ADJUNCT OTOLOGIST AND LARYNGOLOGIST, THE LEBANON HOSPITAL; LECTURER ON DISEASES OF THE NOSE AND THROAT, THE NEW YORK POLYCLINIC.

Bene F., 18 years old, buttonhole maker by occupation, was admitted to the People's Hospital on March 18, 1911. He gave a history of pain in the ear for which a myringotomy had been done, which relieved him. Physical examination showed a fairly nourished young man. The heart, lungs, and kidneys were normal. As his temperature on admission was only 99.4° and he felt fairly well, he was treated as a simple case of acute purulent otitis media, by hot-water bag and irrigations of 1-5000 bichloride solution. On the 19th his temperature rose to 101° and went down to 99.2° on the 20th. On the 21st the temperature rose to 106.4°, pulse 140, respiration 28, and he complained of considerable pain.

I saw him for the first time on the 21st, when he gave the impression of being very sick. On examination, I found his ear draining well, and there was no bulging or sagging of the posterior and superior canal walls. The drum membrane had a large perforation and the appearance was that of a mild cases of acute otitis media purulenta. There was only slight pain on deep pressure over the tip and antrum. As there were hardly any signs of mastoiditis, every other cause had to be excluded before an exploratory mastoidectomy could be decided upon. The patient was carefully examined and absolutely nothing but the ear condition was found to account for it. The blood count showed 14,800 leucocytes with 84 per cent. polynuclears. I determined to explore the mastoid.

*Operation.*—An incision was made from above the auricle and ½ cm. posteriorly down to the tip of the mastoid process. On elevating the periosteum, the cortex was found normal. On removing the cortex with gauze and mallet, I found extensive necrosis; the cells were filled with granulations and pus. The antrum was but slightly involved; the tip, on the other hand, was all diseased. The fact that the antrum was but little involved may explain the absence of signs in the middle ear. I removed the mastoid tip and all the diseased bone by rongeur and curette, until healthy bone was reached. By so doing I exposed the sigmoid sinus, which looked rather healthy, trusting that the mastoidectomy would prevent the thrombus should the sinus contain one, from becoming septic, I left it alone and packed the cavity with iodoform gauze.

On March 22 the temperature was 102°, pulse 120. The patient was comfortable and had no pain. On March 23 the temperature was 105.2°, pulse 130. Patient had a slight chill with severe headache and talked irrationally during the night. The wound was dressed and found clean. I suspected a septic thrombus in the lateral sinus, but owing to the fact that the sinus looked perfectly normal, I determined to wait another twenty-four hours. A blood culture was made and found negative.

March 24.—Temperature 103.2°, pulse 110, severe headache; patient very sick. In view of the sudden rise in temperature, chills, and no marked improvement occurring for three days, I decided to explore the sinus.

*Operation.*—I removed the bone from the sinus, thus exposing it for 1½ inches. I had my assistant apply pressure to the torcular and jugular ends of the sinus by inserting two small plugs of gauze between the cortex and the sinus wall. A long incision was made in the middle of the sinus which contained a large thrombus. On account of free bleeding from the jugular end, I had to insert another plug. The thrombus seemed to be broken down in the middle and fairly firm at both ends. I curetted the sinus as far as possible, and kept it up until free bleeding occurred from the torcular end. As there was no apparent involvement of the internal jugular and it bled freely from the jugular end, I determined not to ligate the jugular unless there should be further trouble. The sinus was then packed.

On March 25 the temperature was 98.2° in the morning, pulse 96. Patient passed a comfortable night, very weak, but feels much better. Twelve P.M. had slight chill and temperature rose to 102.2°. On March 26 temperature in the morning was 99°. Packing removed. Patient very much improved. Eight P.M. temperature rose to 103.8°, probably due to dislodgment of the clot by removing the packing.

On March 27 the temperature was 102°, pulse 120. Patient anemic, but otherwise feeling and looking well. The patient was discharged from the hospital on April 10, almost cured, and then made an uneventful recovery.

The interesting features of the case are:

1. The normal appearance of the sinus, although the seat of a septic thrombus.
2. The extensive involvement of the sinus with hardly any signs.
3. Recovery, although the jugular was not ligated.
4. The mastoid was diseased without giving rise to any signs whatsoever.
5. The severe infection followed a slight operation on the nose which had been performed in some dispensary.

1855 Seventh Avenue.

*Reported at a meeting of the Eastern Medical Society, November 8, 1912.

# MEDICAL RECORD.

*A Weekly Journal of Medicine and Surgery.*

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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## THE PERENNIAL PROBLEMS OF PNEUMONIA.

THE season of greatest prevalence of pneumonia is close at hand. The manifold problems which are presented by this disease continue to challenge the attention of laboratory workers and clinicians. The subject is so large that only its outposts have been sighted by the vanguard of modern investigation. The complexity of the factors that enter into the production of pneumonia—the factor of bacterial virulence, the factor of the relative resistance of human beings and of animals to infection, the factor of individual resistance among human beings, and the factor of climate—this complexity imparts to the study of pneumonia an interest that is not surpassed in the case of any other disease.

A valuable clinical study of certain atypical forms of pneumonia is contributed to the *Zeitschrift für klinische Medizin*, Vol. 76, Nos. 5 and 6, by A. Austregesilo of Rio de Janeiro. In that city, whose distance from the equator is the same as that of Havana, it has long been thought that genuine pneumonia is rare. The above observer, who occupies the chair of medicine in Rio de Janeiro, notes however that the classical type of pneumonia prevails in this tropical city, but not to the same extent as in Europe. On the other hand the atypical cases exceed in number those that follow the normal course. Of the former there are distinguished two varieties which are designated "pneumonia abortiva" and "pneumococcia thoracica bastarda." It is pointed out that the various clinical manifestations of pneumonia as observed in Rio depend less upon the individual's resistance than upon the varying virulence of the pneumococcus.

The abortive type of pneumonia has been described by clinicians in different parts of the world. It is the pneumonia of one to three days' duration described by Osler under the term "larval pneumonia," in which apparently the activity of the pneumococcus is exhausted during the stage of engorgement. In these cases, the invasion and clinical manifestations of which differ in no respects from those of the typical cases, there may or may not appear the characteristic physical signs of pneumonia; there may be in fact "eine wahrhafte Pneumonie ohne Pneumonie."

The so-called "forme fruste" or "pneumonia bastarda" is closely allied to the abortive type, but it has certain distinctive characteristics. The disease begins with the severe chill and the pain in the side which are characteristic of the usual form of pneumonia. There then set in the symptoms which are peculiar to these pseudopneumonias, namely, an obstinate and severe cough, a more or less pronounced dyspnea, and the appearance on the second or third day of a tenacious and blood-tinged sputum which is loaded with pneumococci. The physical signs are indefinite during the first thirty-six hours. There are then made out areas of slight dullness over the lower lobes, and exceptionally over the upper lobes. The bronchial breathing and the râles appear distant and indistinct. The general symptoms of the disease are severe. The course is a short one and resolution occurs by lysis. Pleural complications are almost constant, and finally dominate the clinical picture.

Austregesilo takes issue with the French school who describe primary idiopathic congestions of the lung and regard these as distinct clinical entities. He believes that in these cases there is an underlying inflammation of the lung parenchyma with an accompanying inflammation of the pleura, and that the congestion is only incidental to the pneumococcus infection. Nevertheless the French clinicians, who more than any other have paid considerable attention to this subject, have described seven different forms of primary pulmonary congestion, as follows: (1) the acute pulmonary congestion or so-called *maladie de Woillez;* (2) the catarrhal congestion of the thoracic organs described by Dupré, Grasset, and Dieulafoy; (3) the pleuropulmonary congestion of Potain and Serrand; (4) the pneumonia splenica of Grancher and Queirat; (5) the pulmonary apoplexy, the paroxysmal congestion of Weill, and the bronchoplegic congestion of Huchard; (6) the pulmonary congestion without sputum, and the dry pneumonia of Wiedmann; and (7) the protracted pulmonary congestion of Renon. Austregesilo believes that all of these forms correspond to the "pneumococciæ thoracicæ bastardæ." Two types stand out with greatest prominence: the type of Woillez, in which the pulmonary parenchyma and to a less extent the pleura are involved; and the type of Potain, in which the pleural manifestations predominate. It appears as if in these cases the pneumococcus does not produce the inflammation characteristic of its invasion of the lungs. It causes congestion and inflammation but without any marked hepatization. This is not an abortive pneumonia; it is rather an abnormal pneumonia, with or without involvement of the pleura.

With the increasing recognition of pneumococcus infections of different organs of the body there has at the same time developed a conception that pneumonia, unlike typhoid fever, is a local process, and not a septicemia. Nevertheless, employing improved cultural methods, G. Jochmann ("Handbuch der inneren Medizin," 1911), has been able to demonstrate the presence of pneumococci in the blood in 70 per cent. of his cases of pneumonia. If the number of bacteria in the blood is not large, and if these do not give rise to any special symptoms, the condition is regarded by Jochmann as one

of pneumococcus bacteriemia, which in no respect darkens the prognosis. On the other hand if the blood is invaded with a large number of these microorganisms, which then give rise to pronounced clinical symptoms, such as a continued high fever, and the development of an endocarditis, joint metastases, etc., then the condition must be regarded as one of pneumococcal sepsis, and the prognosis is correspondingly a much more serious one.

The solution of the intricate problems of pneumonia is closely bound up with the question of the varying virulence of the pneumococci. This phase of the subject forms the title of a thesis by L. Cotoni.* This observer studied the virulence of pneumococci obtained from cases of pneumonia in human beings and injected into rabbits, mice, and guinea-pigs. He found that there is no necessary relationship between the gravity of a case of pneumonia and the virulence of the infecting germs. Nevertheless, if the microorganisms manifest a high degree of virulence for the mouse, and still more so for the rabbit and guinea-pig, this fact constitutes a strong presumption in favor of the pronounced activity of these bacteria in the human organism. With the virulence of a certain strain of pneumococci for animals it is possible to compare the gravity of the human infection caused by the same strain, and not the virulence of this strain in human beings. The latter is a quantity impossible to measure, for the resistance of the host is an unknown quantity, and the number of invading microorganisms cannot be estimated. Moreover the definite anatomical lesions in the lungs in the case of the overwhelming majority of the human infections, form a sharp contrast to the experimental septicemia of mice.

Fortunately the modern studies of pneumonia are not being conducted exclusively in the laboratory. Mankind is on the defensive against the pneumococcus, and the plans of warfare are being drawn with almost military precision. The high mortality from pneumonia among the native laborers in the Transvaal mines is engaging the attention of Sir Almroth E. Wright and his associates, and the first part of their report has recently been published in the *Lancet,* December 14 and 21, 1912. (See MEDICAL RECORD, January 4, 1913, page 31, and also this issue, page 77). This communication is concerned chiefly with the results of the investigation of the therapeutic value of Morgenroth's drug, ethylhydrocuprein hydrochlorate, in pneumonia. While it is shown that this substance exerts a bactericidal effect specifically upon the pneumococcus, it is at the same time not devoid of toxic action upon the human organism. Its neurotropic effect has been manifested in the relatively large number of cases of amblyopia which have resulted from the use of this drug. One may cherish the hope that as in the case of the organic arsenic derivatives, it will be possible in the future developments of synthetic chemistry, to eliminate in great part the organotropic property and at the same time to preserve or even increase the parasitotropic action of Morgenroth's drug.

*"La Virulence des Pneumocoques," par L. Cotoni, Ancien Interne des Hôpitaux de Paris. Thèse pour le Doctorat en Médecine. Paris: G. Steinheil. 1912.

## A CELL PROLIFERANT.

IN the older pharmacy, long before the day of the aseptic treatment of wounds, much account was made of vulneraries. Friar's balsam, basilicon ointment, balm of Gilead, balsam of Peru, comfrey, turpentine, and a host of other remedies were vaunted for their healing virtues. Some doubtless acted through what we now recognize as their antiseptic properties, while others certainly possessed a power of accelerating cell growth. Among the latter was comfrey, the root of which was in frequent use by the ancient leeches not only as a healer of wounds of the soft parts and an accelerator of union of fractured bones, but as a soothing remedy in certain gastric disorders, probably ulcer. This drug, which has always retained its repute as a vulnerary in domestic practice, was not long ago studied both clinically and chemically by Macalister (*Liverpool Medico-Chirurgicol Journal,* January, 1912), who found its healing properties to reside in a crystallizable principle, glyoxyldiureide, or allantoin. This substance is found not only in the growing parts—buds, bark of the twigs, etc.—of comfrey and other plants, but also in the allantoic and amniotic fluids and in the urine of infants and pregnant women, only traces or none at all being excreted in the urine of adult man. It is thus seen to be associated with the process of growth in both plants and animals. Clinically, Macalister, Bramwell, Murray, and others (*British Medical Journal,* January 6 and 13, 1912) found an extract or paste of comfrey root, and especially a solution of allantoin derived therefrom, remarkably efficacious in promoting epithelial growth. Sluggish ulcers, which had long resisted treatment, healed rapidly under applications of this substance, and fistulæ of long standing also closed promptly after the insertion of gauze wicks impregnated with the solution.

It is interesting in this connection to note the results obtained by Carrel (*Journal of Experimental Medicine,* January, 1913) in the activation of the growth of connective tissue *in vitro* by means of the addition of tissue juices. He made a number of experiments to determine the comparative growth of cells placed in normal plasma and in plasma containing an addition of a tissue juice. All the tissue juices accelerated the growth of connective-tissue cells, but the degree of acceleration varied greatly according to the tissue from which the extract was made. Embryonal tissue extract was the most active, and nearly as potent were extracts of adult spleen and of Rous sarcoma tissue. Extracts of the kidney and heart were less active, and least of all were extracts of connective tissue and of blood corpuscles. Carrel studied the effect of heating, of filtration, and of concentration upon the activity of the tissue juices employed, but he gives no account of any chemical tests to determine the nature of the activating agent. It is interesting, however, to note that the really potent extracts were those made from embryonic and actively growing tissues, the same indeed as those in which allantoin is found most abundantly. A common ingredient of many of the ancient vulneraries, and of some of those in popular vogue to-day, was urine, especially the urine of a

young child, which contains allantoin. It would be interesting to determine whether this excretion would act, like the tissue juices, as an accelerator of cell growth *in vitro*.

### A Neurologist on Freud's Theories.

The dissemination of Freud's theories has brought out a great deal of what seems to be to some extent partisanship on the part of neurologists. While his views have somewhat the effect of a red rag to a bull on some neurologists, by his adherents they appear to be regarded as almost sacred. Of course, the heated discussions which have taken place with regard to the Freudian dicta have had something to do with the attitude assumed by pro-Freudians. For, after all, it is only natural that when theories in which a man believes are sharply assailed they should be as strongly defended. Of course, to the ordinary individual and even to the practitioner not skilled or deeply read in neurology, the statements made by Freud as to the influence of sexual instincts on the origin and causation of neuroses savor of gross exaggeration. But even to many neurologists who freely allow that such instincts are factors in the production of neuroses, it nevertheless appears evident that Freud and his disciples have overstated their case and carried their theories to an almost absurd length. In this country Starr and others have dissented from Freud's views on more than one occasion, and in Europe several of the most renowned nerve specialists have argued more strongly by far against their acceptance. At a meeting of the Swiss Society of Neurology which took place at Lucerne on November 9 and 10, an account of which is given in the *Lancet*, November 23, 1912, Professor Ladame of Geneva in a report on neuroses and sexuality gave a complete résumé of Freud's theories. He pointed out that Crämer, Löwenfeldt, and Oppenheim have seriously opposed the theory of pan-sexuality and that quite a number of other authors have combated what they believed to be exaggerated and inexact views. Kurt Mendel wrote a biting satire on Freud's typical infant, whose suction of the thumb and childish sports were referred exclusively to the sexual sphere. As for the dangers of sexual abstinence, so strongly dwelt upon by Freud, in the opinion of Ladame those dangers are nonexistent. Ladame considered that a capital mistake had been made in confounding the functions of nutrition and those of reproduction.

### Causes of Falling Birth Rate in Germany.

It is pretty generally held, we believe, that the falling birth rates of the culture countries are due chiefly to deliberate refusal to propagate the species rather than to a falling off in the marriage rate and sterility in male or female, although doubtless both these factors must enter to some extent into a consideration of the causes, for both combined would fail to produce such diminutions of birth rate as are constantly coming to light. This is the conclusion of Gummert, expressed recently before a medical society in Essen-Ruhr (*Berliner klinische Wochenschrift*, November 25). Prevention of conception, which was once the privilege of the rich, has now descended by degrees to the poor, so that it has become universal. The evidence that this is the chief cause of the falling birth rate is seen in the enormous number and variety of preventive resources, and in the greatly increased proportion of abortions to conceptions. The only solution of the problem is a campaign against the criminal interruption of pregnancy; for the prevention of conception can hardly be reached by law. In Austria abortion is now placed among reportable affections, but this is regarded as an attack on personal liberty. In the absence of any dominant principle in conducting a crusade, the latter can be carried out only piecemeal. For example, peddlers hawk from house to house syringes intended to prevent conception although ostensibly recommended for cleanliness or comfort. It might be possible to secure some restrictive legislation against this instrument. Among facts brought out in the discussion of this paper, it was interesting to learn that the illegitimate birth rate does not suffer like the legitimate; that the Roman Catholic Church is no longer a bulwark against the prevention of conception, and that abortions are rare among the poor because abortionists work solely for gain, and in a criminal calling one would not expect anything else of them.

### Latent Erysipelas.

The use of the term latent as applied to diseases appears to differ considerably with the nature of the latter. In general it should mean that there is some evidence of the presence of a given affection in the absence of its usual manifestations. More or less confusion must arise between such terms as "latent," "occult," "cryptic," "masked," "equivocal," and the like, so that the custom of using these adjectives is one of questionable value. At a recent meeting of the Berlin Surgical Society (*Berliner klinische Wochenschrift*, December 2) Schlesinger reported two cases of what he styled "latent erysipelas." The characteristics appear to have been a prolonged incubation period and deep initial manifestation which involved the skin eventually. In one case a nurse was scratched on the back of the hand by a septic patient. The wound healed, and not until after two weeks did symptoms appear which suggested periostitis of the ulna. Meanwhile a neurologist had diagnosticated neuralgia. Eventually erysipelas appeared over the ulna and involved the entire limb, trunk, and head. The other case was similar in character, but followed an operation. The author appears to regard such cases as equivalents of phlegmonous processes, in which pus slowly forms and first manifests itself at a period remote from the date of infection. While the incubation period of ordinary erysipelas should not exceed eight days, in these cases three weeks and two months respectively elapsed between the act of infection and the first appearance of the erysipelatous blush.

### Cacoethes Investigandi.

Senator Gore of Oklahoma has announced his intention of introducing into the Senate a resolution directing a full investigation by the United States Government of the alleged cure of cases of tuberculosis said to have been effected by Dr. Friedmann of Berlin. We can think of at least five hundred ways in which the money of the United States can be spent to better advantage than in investigating a secret "consumption cure." Dr. Friedmann's colleagues in Berlin can be trusted to do that effectively without the aid of the United States Senate.

## News of the Week.

**Tuberculosis Fight in 1912.**—During the year just completed nearly $19,000,000, according to the figures of the National Association for the Prevention of Tuberculosis, was spent in the United States in the fight against this disease, the total being nearly $5,000,000 in excess of the expenditures for 1911. More than a quarter of this amount was raised in New York State alone, the contributions from the leading States being as follows: New York: Public, $3,805,556; private, $1,356,760; total, $5,162,316. Pennsylvania: Public, $1,587,596; private, $632,231; total, $2,219,827. Massachusetts: Public, $1,064,905; private, $342,414; total, $1,407,319. For the maintenance and establishment of open-air schools and classes, over $115,000 was expended; the dispensaries and tuberculosis clinics spent about $560,000, and the anti-tuberculosis associations and committees about $765,000. Nearly $17,000,000 was devoted to sanatorium and hospital construction and treatment. In addition about $500,000 was spent in caring for tuberculous patients in hospitals for the insane and penal institutions.

**New York's Vital Statistics.**—For the week ending December 28 the total number of deaths in New York City was 1,636, an increase of 141 over the previous week. In Manhattan Borough alone the death rate was 16.20 per thousand, as compared with 14.46 for the same week of last year. In the other boroughs, however, the rate was decreased. The statistics for the year 1912 show a total of 73,008 deaths in New York City, a decrease of 2,415 as compared with 1911, the death rate for the year being 14.11 per thousand of population, the lowest on record. For 1911 the rate was 15.13, for 1910, 15.98, and for 1909, 16. A comparison of the statistics shows a reduced mortality in all causes except cancer and homicide, as well as a large decrease in the number of deaths reported in tenement houses. The infant mortality during the year was the loweest ever recorded in the city, 14,289 deaths being reported, and the rate of 10.05 is lower than that of any other large city with the exception of Paris. The births during 1912 numbered 135,625, which is an absolute increase of 1,083 over 1911, though the birth rate for the year, 26.22, is the lowest since 1906. The marriage rate, however, was the highest in five years, 52,391 having been reported.

**Russia's Death Rate High.**—Reports from Russia state that the mortality in that country has increased in the last five years from 28 to 31 per thousand, giving it probably the highest death rate in the world. Severe epidemics, mainly of typhoid fever, are responsible for the high mortality.

**Jewish Maternity Hospital.**—The report of this institution for the past year gives the number of births within its walls as 1,162, including fourteen sets of twins and one set of triplets. The number of males born exceeded the females by 51.

**Street Accidents.**—During 1912, there were 532 persons killed in accidents on the streets of New York City, 230 of these being children. The total number of persons injured was 2,363. Accidents on streets and highways throughout the State caused the death of 234 persons, while in railroad grade crossing accidents 107 persons were killed and 127 injured. There was an increase of 38 per cent. in automobile accidents.

**Stops Ambulance Service.**—The Presbyterian Hospital, New York, after maintaining an ambulance service for thirty-two years, temporarily discontinued it on January 1. The reason given is that the Hospital is preparing to move from its present quarters and can not maintain an efficient service while doing so. It is expected that the service will be resumed later, and in the meantime the district will be covered by the Flower Hospital.

**Harvey Society Lecture.**—The sixth lecture of of the Harvey Society for this season will be delivered by Major J. J. Russell, U. S. A., at eight-thirty on Saturday evening, January 18, at the New York Academy of Medicine. The subject of the lecture will be: "The Prevention of Typhoid Fever."

**"Typhoid Mary" Loses.**—Mary Mullen, known to medical circles as "Typhoid Mary," has been advised that she has no cause of action against the Board of Health of New York, or against Commissioner Lederle, Dr. Bensel, or Dr. Soper, who caused her to be detained for three years on North Brother Island as a public menace. The Board of Health in this case, it is held, acted entirely within the power conferred upon it by the city charter.

**Personals.**—Dr. Charles Milton Ford of New York, for many years attending surgeon to the New York City Children's Hospitals and Schools, Randall's Island, has recently been appointed consulting surgeon to these institutions.

Dr. William W. Smithson of Jackson, Miss., has been appointed superintendent of the Mississippi State Hospital for the Insane.

Mrs. Elimina K. Spencer, a veteran army nurse, who served through the Civil War with the 147th New York Volunteers, died at her home in Oswego on December 29, at the age of 94 years.

**British Physicians Accepting Service under the Insurance Act.**—The physicians in Great Britain have apparently decided to abandon their fight against the Government and the new Insurance Act, and on January 3 close to 10,000 of them had accepted service under the Government's terms. The Medical Benefit Act is scheduled to go into operation on January 15.

**Dies at 105.**—Mrs. Mary Ann Peterson of New London, Conn., died there recently in her 106th year.

**Bellevue Hospital Library.**—The Medical Superintendent of Bellevue Hospital announces that the library connected with the Pathological Department of the new Bellevue Hospital, at Twenty-ninth street and First avenue, is open for the use of all practising physicians.

**Health of the Canal Zone.**—For the month of October, 1912, the death rate among employees in the Canal Zone was 9.10 per thousand, the lowest rate on record for the month. The total number of deaths was thirty-eight, of which twenty-eight were due to disease. Among the entire civil population the death rate was 23.08 per thousand. Eight deaths were due to tuberculosis, four to pneumonia, one to malaria, and ten to external violence. There were no cases of yellow fever, smallpox, or plague.

**Grading of Milk.**—The New York City Department of Health recently issued a circular describing the present plan of marking milk sold in the city. Grade A milk comprises all milk suitable for the use of infants and children, and is sold only in bottles. Grade B milk is that suitable for adults, comprising Pasteurized milk and selected raw milk, and is sold in bottles or cans. Grade C milk is that suitable for cooking purposes only and is the poorest grade permitted to be sold. The bottles and

cans must be clearly labeled to indicate to what grade the contents belong, the markings for each grade being of a distinctive color. Pasteurized milk also must be plainly marked. Only Grade A and Grade B milk are allowed for sale by restaurants, lunch counters, etc., for immediate use by adults, and it is recommended that Grade A milk only be used for children. Pasteurized milk is considered by the department to be safer than raw milk of the same grade.

**State Board Examinations.**—Of 110 applicants who appeared recently before the Pennsylvania State Bureau of Medical Education and Licensure, only seventy received licenses to practise in the State. Forty failed to secure the necessary average marks.

**Civil Service Examinations.**—The United States Civil Service Commission will hold an examination on January 22, 1913, for the purpose of filling a vacancy in the position of medical interne in the Government Hospital for the Insane at Washington, at $1,600 per annum and maintenance, and other vacancies as they may occur in positions requiring the same qualifications. The examination will be open to both men and women although at present there are no vacancies for the latter. Candidates must be unmarried, twenty years of age and over, and citizens of the United States. The Government Hospital for the Insane houses over 2,900 patients and about 750 employees.

On February 5, 1913, an examination will be held for the purpose of filling vacancies in the Indian Service at the following places: Navajo Agency, $1,000 per annum; Cheyenne River Agency, S. D., $1,000; Santee Agency, Neb., $1,000; Western Navajo Agency, Ariz., $1,200. Only men physicians or members of graduating classes in recognized medical schools will be admitted to this examination. Full particulars as to both examinations may be obtained from the United States Civil Service Commission, Washington, D. C.

**Associated Out-Patient Clinics.**—The final organization of this association has been effected with Mr. George L. Rives as president, Mr. H. S. Van Duzer, Dr. Gorham Bacon, and Dr. J. W. Brannan, as vice-presidents, and Dr. S. S. Goldwater, as secretary and treasurer; an investigation of the existing dispensary facilities has been begun, and the association will soon spread to the other boroughs of the city. A contribution of $5,000 has been made recently for the organization work.

**Historical Medical Exhibition.**—In connection with the meetings of the International Medical Congress in London next summer, an exhibition of rare and curious objects relating to medicine, chemistry, pharmacy, and allied subjects is being arranged by Mr. Henry S. Wellcome. Among the interesting exhibits will be a section devoted to the medical deities of savage and barbaric peoples; and amulets, talismans, and charms connected with the art of healing will form another feature. In the section on surgery the evolution of surgical instruments will be traced from the earliest times; and relics of alchemy will also be shown. Loans of all such objects will be gratefully received by the secretary, who may be addressed as 54a Wigmore street, London, W.

**Welfare of Infancy.**—A movement in England, similar to that in this country, has resulted in an alliance among a number of associations interested in the welfare of infants, and the formation of a National Association for the Prevention of Infant Mortality, of which their Majesties the King and Queen have consented to act as patrons. Mr. John Burns is the president of the association, and plans are being made for an English-speaking conference on infant mortality to be held in London on August 4 and 5, immediately preceding the meetings of the International Medical Congress.

**Health Legislation.**—The American Association for Labor Legislation proposes as a part of its legislative program for 1913, the passage of laws designed to prevent lead poisoning in this country. Cleanliness of workrooms and workers and the use of hoods and exhausts to eliminate fumes and lead dust will, it is believed, accomplish this end. The association also includes in its program the securing of a one-day-rest-in-seven law, a Federal compensation act, and laws for the protection of working women.

**Society of American Bacteriologists.**—The meeting held in New York, December 31, 1912, and January 1 and 2, 1913, was one of the most successful the society has ever had, both in general interest, as evidenced by the large attendance at each session and in the importance of the papers presented. The following officers were elected: *President,* Prof. C. E. A. Winslow, American Museum of Natural History, New York City; *Vice-President,* Prof. Chas. E. Marshall, Massachusetts Agricultural College, Amherst, Mass.; *Secretary-Treasurer,* Dr. A. Parker Hitchens, Glenolden, Pa.; *Council,* W. J. MacNeal, L. F. Rettger, D. H. Bergey, H. A. Harding; *Delegate to Council of American Association for the Advancement of Science,* Prof. S. E. Prescott.

**Medical Society Elections.**—Mobile County (Ala.) Medical Society: Annual meeting at Mobile on December 7. Officers elected: *President,* Dr. R. H. von Ezdorf, U. S. Marine-Hospital Service; *Vice-President,* Dr. R. A. Wright; *Secretary,* Dr. W. W. Scales; *Treasurer,* Dr. E. S. Sledge.

North Central Illinois Medical Society: Annual meeting at Pontiac on December 4. Officers elected: *President,* Dr. Ezra T. Goble, Earlville; *Vice-Presidents,* Dr. C. C. Hunt, Dixon, and Dr. C. D. Thomas, Peoria: *Secretary-Treasurer,* Dr. George A. Dicus, Streator.

Parker-Palo Pinto County (Tex.) Medical Society: Annual meeting at Weatherford on December 10. Officers elected: *President,* Dr. J. H. Eastland, Mineral Wells; *Vice-President,* Dr. J. H. McCorkle, Gordon; *Secretary-Treasurer,* Dr. J. H. McCracken, Mineral Wells; *Censor,* Dr. B. R. Beeter, Mineral Wells.

Vermilion County (Ill.) Medical Society: Annual meeting at Danville on December 9. Officers elected: *President,* Dr. Frank M. Mason, Rossville; *Vice-President;* Dr. H. F. Dice, Ridgefarm; *Secretary-Treasurer,* Dr. Solomon Jones, Danville; *Censor,* Dr. O. H. Crist, Danville.

El Paso County (Col.) Medical Society: Annual meeting at Colorado Springs on December 11. Officers elected: *President,* Dr. Beverley Tucker, Colorado Springs; *Vice-President,* Dr. George A. Boyd, Colorado Springs; *Secretary,* Dr. James H. Brown, Colorado Springs; *Treasurer,* Dr. G. B. Gilmore, Colorado City.

Greene County (Ind.) Medical Society: Annual meeting at Linton on December 12. Officers elected: *President,* Dr. Frank A. Van Sandt; *Vice-President,* Dr. Charles D. Mallett of Switz City; *Secretary-Treasurer,* Dr. T. Roy Cook, Bloomfield.

Bartholomew County (Ind.) Medical Society:

Annual meeting at Columbus on December 10. Officers elected: *President,* Dr. Richard E. Holder, Columbus; *Vice-President,* Dr. James W. Benham, Columbus; *Secretary,* Dr. Elmer U. Wood, Columbus.

Mills County (Ia.) Medical Society: Annual meeting at Glenwood on December 5. Officers elected: *President,* Dr. George M. Agan; *Vice-President,* Dr. Roy Moon, Glenwood; *Secretary-Treasurer,* Dr. J. M. Donelan, Glenwood.

Androscoggin County (Me.) Medical Society: Annual meeting at Lewiston on December 3. Officers elected: *President,* Dr. W. L. Haskell, Lewiston; *Vice-President,* Dr. Joseph W. Scannell; *Secretary-Treasurer,* Dr. S. E. Sawyer, Lewiston.

Portland (Me.) Medical Association: Annual meeting at Portland on December 5. Officers elected: *President,* Dr. Harold A. Pingree; *Vice-Presidents,* Dr. Walter D. Williamson and Dr. Alfred Mitchell, Jr.; *Secretary-Treasurer,* Dr. Roland B. Moore.

Southern Minnesota Medical Association: Annual meeting at Mankato on December 4. Officers elected: *President,* Dr. Allan B. Stewart, Owatonna; *Vice-Presidents,* Dr. A. G. Liedloff, Mankato, and Dr. W. J. Richardson, Fairmont; *Secretary,* Dr. A. F. Adams, Elgin; *Treasurer,* Dr. George F. Merritt, St. Peter.

Harrison County (Miss.) Medical Society: Annual meeting at Gulfport on December 2. Officers elected: *President,* Dr. A. F. Caraway, Gulfport; *Vice-President,* Dr. B. F. Welch; *Secretary-Treasurer,* Dr. Daniel J. Williams, Gulfport.

Tri-County (Miss.) Medical Association: Annual meeting at Brookhaven on December 3, with many delegates from Pike, Lincoln, and Copiah Counties. Officers elected: *President,* Dr. W. D. Beachman, McComb; *Vice-Presidents,* Dr. J. M. Catchings, Copiah County; Dr. O. N. Arrington, Lincoln County, and Dr. T. K. Magee, Pike County; *Secretary-Treasurer,* Dr. D. W. Jones, Brookhaven.

Cape County (Mo.) Medical Society: Annual meeting at Cape Girardeau on December 9. Officers elected: *President,* Dr. Elisha H. G. Wilson, Cape Girardeau; *Secretary,* Dr. Daniel H. Hope, Cape Girardeau.

St. Joseph-Buchanan-Andrew Counties (Mo.) Medical Society: Annual meeting at St. Joseph on December 4. Officers elected: *President,* Dr. Albert L. Gray, St. Joseph; *Vice-Presidents,* Dr. Arthur B. McGlotham, St. Joseph, and Dr. Floyd H. Spencer, St. Joseph; *Secretary,* Dr. William F. Goetze, St. Joseph; *Treasurer,* Dr. John M. Bell, St. Joseph.

Audrain County (Mo.) Medical Society: Annual meeting at Mexico on December 2. Officers elected: *President,* Dr. John F. Harrison, Mexico; *Vice-Presidents,* Dr. R. W. Berry, Mexico, and Dr. R. T. Gibbs, Mexico; *Secretary-Treasurer,* Dr. Robert C. Strode, Mexico.

Wake County (N. C.) Medical Society: Annual meeting at Raleigh on December 13. Officers elected: *President,* Dr. H. A. Royster; *Vice-President,* Dr. W. T. Carstarphen; *Secretary,* Dr. W. C. Horton; *Treasurer,* Dr. K. P. Battle, Jr.

Wilson County (N. C.) Medical Society: Annual meeting at Wilson on December 4. Officers elected: *President,* Dr. M. M. Saliba; *Vice-President,* Dr. C. L. Swindell; *Secretary-Treasurer,* Dr. K. C. Moore.

Seaboard Medical Association: Annual meeting at New Bern, N. C., on December 3 to 5. Officers elected: *President,* Dr. L. E. Rawls, Suffolk, Va.; *Vice-Presidents,* Dr. H. D. Walker, Elizabeth City, N. C.; Dr. B. R. Kennon, Norfolk; Dr. Joshua Tayloe, Washington, N. C.; Dr. G. K. Vanderslice, Phoebus; *Treasurer,* Dr. Israel Brown, Norfolk; *Secretary,* Dr C. P. Jones, Newport News, Vt.

Lorain County (O.) Medical Society: Annual meeting at Elyria on December 10. Officers elected: *President,* Dr. J. B. Donaldson; *Vice-President,* Dr. C. P. Clements; *Secretary,* Dr. W. S. Baldwin; *Treasurer,* Dr. Evan Cameron.

Darke County (O.) Medical Society: Annual meeting at Greensville on December 12. Officers elected: *President,* Dr. J. O. Starr, Pittsburgh; *Vice-President,* Dr. Donovan Robeson, Greensville; *Secretary-Treasurer,* Dr. J. E. Hunter, Greensville.

Grady County (Okla.) Medical Society: Annual meeting at Chickasha on December 6. Officers elected: *President,* Dr. Walter Penquite; *Vice-Presidents,* Dr. R. P. Tye and Dr. L. H. Winborn; *Secretary,* Dr. Martha Bledsoe.

Kent County (R. I.) Medical Society: Annual meeting at East Greenwich on December 12. Officers elected: *President,* Dr. Ira D. Hasbrouck, Washington; *Vice-President,* Dr. Warren E. Page, Phoenix; *Secretary,* Dr. Benjamin F. Tefft, Jr., Anthony; *Treasurer,* Dr. Frank B. Smith, Washington.

Edgefield County (S. C.) Medical Society: Annual meeting at Edgefield on December 14. Officers elected: *President,* Dr. W. D. Ouztes; *Vice-President,* Dr. G. P. Corn; *Secretary-Treasurer,* Dr. J. G. Edwards.

Pickens County (S. C.) Medical Society: Annual meeting at Easley on December 4. Officers elected: *President,* Dr. C. N. Wyatt; *Secretary-Treasurer,* Dr. R. J. Gilliland.

Sumter County (S. C.) Medical Society: Annual meeting at Sumter on December 5. Officers elected: *President,* Dr. C. J. Lemmon, Sumter; *Vice-President,* Dr. M. L. Parler, Wedgefield; *Secretary-Treasurer,* Dr. E. R. Wilson.

Mitchell District (S. D.) Medical Society: Annual meeting at Mitchell. Officers elected: *President,* Dr. F. W. Freyberg, Mitchell; *Vice-President,* Dr. G. A. Clauser, Bridgewater; *Secretary,* Dr. C. S. Bobb, Mitchell; *Treasurer,* Dr. F. S. Kidd, Woonsocket.

Norwalk (Conn.) Medical Association: Annual meeting on December 17. Officers elected: *President,* Dr. W. B. Burnell; *Vice-President,* Dr. S. H. Huntington; *Secretary-Treasurer,* Dr. W. H. Stone.

Newton-Neshoba-Winston (Miss.) Medical Society: Annual meeting on December 16 at Newton. Officers elected: *President,* Dr. L. W. Cooper, Newton; *Vice-Presidents,* Dr. W. J. Chapman, Newton, and Dr. D. J. Rush, Philadelphia; *Secretary-Treasurer,* Dr. S. A. Majure, Dixon.

Waldo County (Me.) Medical Society: Annual meeting at Belfast on December 16. Officers elected: *President,* Dr. Elmer Small, Belfast; *Vice-President,* Dr. N. R. Cook, Brooks; *Secretary,* Dr. Adelbert Millett, Searsmont; *Treasurer,* Dr. O. S. Vickery.

Hancock County (Me.) Medical Society: Annual meeting at Bar Harbor on December 18. Officers elected: *President,* Dr. Frank R. Ober, Northeast Harbor; *Secretary-Treasurer,* Dr. George A. Neal, Southwest Harbor.

**Obituary Notes.**—Dr. William Henry Watson of Utica, N. Y., a graduate of the Hahnemann

Medical College and Hospital of Philadelphia in 1884, one of the founders of the New York State Homeopathic Hospital for the Insane at Middletown, and a member of its first board of trustees, surgeon-general of New York in 1880, and a regent of the University of the State of New York from 1881 to 1904, died at his home, on January 1, aged 83 years.

Dr. William Blaney Stevenson of California, Pa., a graduate of the University of Pittsburgh, Medical Department, in 1911, died at his home from diphtheria contracted during an epidemic of the disease in Daisytown, Pa., on December 19, aged 25 years.

Dr. William Stewart Reoch of Phenix, R. I., a graduate of the college of Physicians and Surgeons, New York, in 1896, and a member of the Rhode Island State and Kent County Medical Societies and a former president and secretary of the latter, died at his home from Bright's disease, on December 15, aged 43 years.

Dr. Frederic S. Sellew of New York, a graduate of the College of Physicians and Surgeons, New York, in 1881, and a member of the New York State and County Medical Societies, the Academy of Medicine, the New York Pathological Society, the Society of Medical Jurisprudence, the Lenox Medical and Surgical Society, and the Grolier Club, died at his home on December 28, aged 54 years.

Dr. Joseph Solatinow of Passaic, N. J., a graduate of the Eclectic Medical College of the City of New York, died at his home on December 26 after a short illness, aged 65 years.

Dr. Guy C. Marsh of Galion, Ohio, a graduate of the Cleveland University of Medicine and Surgery in 1889, died at his home, on December 26, aged 48 years.

Dr. Charles Kennedy of Troy, Ga., a graduate of the Baltimore Medical College, Maryland, in 1897, was instantly killed on December 26, when the carriage in which he was driving was struck by a railroad train. Dr. Kennedy was 38 years of age.

Dr. Henry F. Pahf of Brenham, Tex., retired, a graduate of the Hahnemann Medical College and Hospital of Philadelphia in 1868, died at his home on December 30, aged 74 years.

Dr. Ezra M. Rogers of Hartford, Wis., a graduate of the New York University Medical College in 1860, died at his home, on December 18, aged 81 years.

Dr. John L. Dryden, professor of anatomy in the College of Physicians and Surgeons of St. Louis, Mo., a graduate of the Homeopathic Medical College of St. Louis in 1891, died at his home after a long illness, on December 25, aged 49 years.

Dr. Melville Hutchinson Criswell of Cassopolis, Mich., a graduate of the Hahnemann Medical College and Hospital of Chicago in 1891, died at his home, on December 14, aged 50 years.

Dr. George Louis Farrell of Malden, Mass., a graduate of the Jefferson Medical College, Philadelphia, in 1895, a member of the Massachusetts State and Middlesex County Medical Societies, and Mayor of Malden for two successive terms, died at his home, on January 1, aged 45 years.

Dr. Paul R. Tainter of Callao, Mo., a graduate of the Hospital College of Medicine, Louisville, Ky., in 1902, and a member of the American Medical Association and the Missouri State and Macon County Medical Societies, was instantly killed in an automobile accident on December 27, at the age of 34 years.

# Correspondence.

## INFLATION OF STATISTICS AS EMPHASIZED BY A RECENT REPORT ON PRIMARY SPLENOMEGALY.

To the Editor of the Medical Record:

Sir:—Permit me to call attention to the unreliability of medical statistics in the determination of the prevalence of certain rare affections. As is well known, patients afflicted with rare, especially chronic, incurable diseases, loath to accept the death-sentence without appeal, usually make their rounds from one doctor to the other and from one clinic to another. Quite naturally every progressive physician takes special interest in such cases, and, as occasion arises, reports them in the medical press. It thus happens that the same case is manifoldly recorded by several physicians and the statistics often swell *ad infinitum*. This, in a way, is unavoidable. But it certainly is to be regretted when this duplication occurs with full knowledge of the succeeding writers. On November 4, 1911, I recorded in your very valuable journal two cases of "Primary Splenomegaly in Brother and Sister." In January, 1912, one of these cases was reported again by Dr. M. S. Reuben in the *American Journal of the Diseases of Children*. Though fully aware of my report, he failed to mention the fact. Now, one year later, in the December, 1912, issue of the *Journal of Experimental Medicine*, Dr. F. S. Mandlebaum has again reported the same case, without giving me credit for it, although, judging from a communication received from him in June of last year, he was familiar with my article in the Medical Record. Far be it from me to underestimate the great value of both of the highly scientific contributions to the study of the disease, but, because of its extreme rarity, this repetition of reports of its occurrence will only tend to minimize its importance and thus decrease the scientific interest in this still obscure affection.

Herman B. Sheffield, M.D.

New York.

## OUR BERLIN LETTER.

(From Our Regular Correspondent.)

THE GERMAN SOCIETY OF NATURALISTS AND PHYSICIANS—NON-OPERATIVE TREATMENT OF TUMORS—TOXINOTHERAPY, IMMUNOTHERAPY, AND CHEMOTHERAPY—RADIOTHERAPY IN CANCER—SECTION ON PSYCHIATRY AND NEUROLOGY—PENAL PSYCHOLOGY—SECTION ON HYGIENE—TUBERCULIN THERAPY—MODERN MILITARY SURGERY—DIFFICULTIES OF NAVAL SURGERY—BIOLOGY AND ITS PLACE IN THE EDUCATIONAL CURRICULUM.

Berlin, November 30, 1912.

The eighty-fourth annual meeting of the German Society of Naturalists and Physicians was held in the middle of September, 1912, in the city of Münster, Westphalia. The non-operative treatment of tumors was discussed by Czerny of Heidelberg. It may now be regarded as established that the combined method of treatment, namely, the use of surgical and other methods, can bring about the cure of cases of cancer that have hitherto been regarded as incurable. The future will decide whether or not this cure is a real one. It is to be regretted that society which contributes so many millions for the campaign against tuberculosis and other infectious diseases does so little to aid the cause whose ob-

ject is the eradication of cancer. The speaker discussed toxinotherapy, immunotherapy, and the recently lauded chemotherapy. In the last it is not possible to apply to human beings the results of animal experiments, for the toxic doses border too closely on the therapeutic ones. In the cancer hospital under the direction of the speaker certain promising researches were carried out by R. Werner, who used the slightly toxic but nevertheless active cholin salts. Following the favorable results on animals, the remedy was also tried on human beings, but not sufficient time has elapsed to enable one to draw any definite conclusion as to the therapeutic value of the cholin salts. Radiotherapy properly applied is of undoubted value. For further investigation there are demanded new cancer research institutes like that at Heidelberg. The speaker concluded that if such highly civilized nations as England and Germany would decide to build one dreadnought less, and with the $10,000,000 thus saved would build forty cancer research institutes, the conquest of cancer would not be so far off.

In the Section on Psychiatry and Neurology H. Többe of Münster delivered an address on the psychology of delinquents sentenced to life imprisonment. He reported on seventy murderers who at the time of the commission of the crime were quite healthy. In 40 per cent. of these individuals there were detected certain mental diseases. Prior to the commission of the crime 51.1 per cent. had been eligible for military service. Only a small proportion belonged to the class of habitual delinquents who followed crime as a trade. First offenders constituted 4.5 per cent. of the entire number; those who had already been convicted of a minor offence comprised 10 per cent.; while 40 per cent. included those who had served imprisonment for some major crime. The misdemeanors of those belonging to the first two groups were associated with marked symptoms of mental impairment. It may be regarded as proved that those criminals in whom homicide was the first crime, are to be differentiated from the habitual delinquents, and after release from prison become useful members of society. By far the larger percentage of those sentenced to life imprisonment become insane in prison.

In the Section on Hygiene, Tropical Hygiene, and Bacteriology, B. Möller of the Robert Koch Institute of Berlin discussed the present status of tuberculin therapy. The best results of this method are obtained when it is combined with the hygienic and dietetic measures of the sanatorium. Only in selected cases of incipient tuberculosis is the ambulatory treatment with tuberculin to be recommended. The use of tuberculin in slowly increasing doses is the best method of using it, which method avoids the production of reactions. Every case is to be treated on its own merits, according to its susceptibility to tuberculin. Observations extending over a number of years can alone guarantee success. The subcutaneous is the best route for the administration of tuberculin.

In the second general session Kuttner of Breslau read a paper on modern military surgery. A wider knowledge and the practice of asepsis have within a few years revolutionized military surgery. Modern arms produce less dangerous wounds than the older weapons. The main principle of modern military surgery is its conservative nature. The use of the probe is avoided on the field and the less urgent operations are postponed. The primary care of the wounded is provided for by the bandage packet with which every soldier is supplied, this being sewed on the lining of his coat. Aimless probing for bullets, unnecessary examination, and superfluous bandaging do most harm to the injured. The non-infected bullet is a harmless foreign body. Amputations necessitated by fractures resulting from infantry projectiles have become extraordinarily rare. In the case of all gunshot wounds of bones and joints the most important measure is immobilization by means of a bandage. Only the most urgent menace to life justifies an immediate operation. Much more unfavorable are the conditions with reference to abdominal injuries. On the battlefield operative procedures in these cases are practically impossible. Most difficult is the work of naval surgeons, as has been amply demonstrated in the war between Japan and Russia. It is characteristic of marine warfare that the entire surgical staff of a battleship may be wiped out, while the remaining personnel of the ship may survive. Such a happening is inconceivable in land warfare. In the battle on the Yalu a shell which fell upon the dressing station of the Japanese war vessel killed both surgeons and the greater part of the medical corps. Another peculiarity of naval surgery consists in the larger number of severe injuries and in the complicated nature of these injuries.

In the general session of the main sections on the natural sciences, the address by H. Czerny of Strassburg deserves special mention. He spoke of the necessity of instruction in biology in the higher schools and emphasized the importance of physicians acquiring a wider knowledge of biology than has been the practice in the past. Even early in their school career the pupils should be taught how to observe carefully natural objects. The entire race would benefit by a wider diffusion of instruction in biological science. It is to the want of this instruction that must be attributed the fact that in many cities there are built magnificent museums, court houses, and theaters, even before any thought is given to the introduction of an adequate water supply, an efficient system of sewers, or the erection of suitable hospitals. The dissemination of biological knowledge would ensure greater cooperation between the public and the medical profession. The significance of the purity and cleanliness of food products and of their proper preservation and preparation would be recognized by a properly instructed people, and many cases of disease would thereby be prevented. R. v. Wettstein of Vienna read a paper on Biology in its Relation to Modern Culture, and R. v. Hannstein of Berlin discussed the subject of Biology and the School.

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## NINTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

MANILA, P. I., Nov. 19, 1912.

THE fifth session of the Philippine Islands' Medical Association took place at 10 A.M., November 7. The first paper read was entitled "Congenital Anomalies Encountered in a Series of Three Hundred Necropsies in Manila," by Dr. Jose Hilario. In this the author gave a tabulated list of the congenital anomalies found at autopsy.

The second paper was entitled "Experiences in Anesthesia at the Philippine General Hospital," by Miss E. J. Ochsner. In this paper the author stated that in accordance with the teachings in the

United States, ether could not be used satisfactorily in a tropical climate, like that of Manila, and that chloroform must largely be depended on. She stated that this, however, had not been her experience; ether had been successfully used, but the quantity was somewhat in excess of that which was required in a cooler climate. The ordinary drop method, without special apparatus, was found to be thoroughly satisfactory. She drew attention to the great difficulty in securing a satisfactory ether in the Philippines, and exhibited cans from well-known makers, which showed the poor condition in which the ether arrived here. On account of the fact that a large percentage of ether, in many of the cans, had evaporated, the residue did not have the anesthetic properties of the unchanged ether, and this residue, she believed, to be an injurious substance to use.

In the discussion which followed, Dr. Heiser stated that the question of unsatisfactory ether containers was an old one in the Philippines, and one that had received much attention in the past. Because of the fire risk, the steamship companies refused to carry the ether in the holds, consequently it was piled on deck, became wet, and the cans rusted and through the rust holes the ether escaped. Another difficulty was the greater heat of the tropics, and the long period which necessarily elapsed from the time that the ether was manufactured until it reached a Philippine hospital. By reason of the heat more gases were liberated and therefore the internal pressure was greater, and many small blisters in the solder that probably would not have opened in a temperate climate, are forced open here owing to the increased pressure. Some success had been had by lacquering the cans to prevent their rusting, but the difficulty of the blisters in the solder had not yet been overcome. Experiments were made in shipping ether in glass containers, but considerable difficulty was experienced on this account because if a glass container happened to crack or break the entire contents were immediately liberated, thus increasing the fire risk, whereas, if a tin can was broken, only a small quantity of ether would be liberated at a time and consequently the fire risk was reduced. Another difficulty with the glass container was that insect borers, like white ants, often destroyed the corks and permitted the ether to escape in that way, so that unless a glass stopper was used there might be loss caused in this way. Lately success had been had by importing ether in glass stoppered bottles packed in zinc-lined boxes, so that if any of the glass bottles were broken, the ether was at least not liberated so as to endanger other cargo.

The next number on the program was a brief demonstration by Dr. Ottofy, in which he illustrated by photographs and descriptions, artificial ears, noses, jaws, etc., which he had made for cases in which they were absent or had to be removed on account of surgical reasons. This completed the professional part of the program, and this session was immediately followed by the regular business meeting.

Among other business transacted, the following resolution was passed: "The Philippine Islands' Medical Association hereby strongly recommends to the Philippine Legislature the passage of such legislation as will bring about, at an early date, the use of unpolished, or undermilled, rice among those among whom rice is a staple article of diet."

The following officers were elected: *President,* Dr. N. J. Blackwood, of the United States Navy; *First Vice-President,* Dr. A. M. Saleeby; *Second Vice-President,* Dr. A. G. Sison; *Counsellor* for five years, Dr. R. E. L. Newberne; *Delegate to the American Medical Association,* Dr. R. P. Strong.

On Thursday, at 8 P.M., on the roof of the Manila Hotel, the ninth annual meeting was brought to a close by a social evening, at which the wives and friends of the members were present. Hon. Dean C. Worcester, Secretary of the Interior for the Philippine Islands, showed a series of moving pictures taken among the wild tribes.

Dr. Thomas Jackson, formerly of the Medical Reserve Corps, of the United States Army, and author of a textbook on tropical medicine, has accepted a position as medical inspector with the Bureau of Health.

Dr. Vicente de Jesus, the representative of the Philippine Government at the International Congress on Tuberculosis at Rome and at the International Congress on Hygiene and Demography at Washington has returned to Manila.

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# Progress of Medical Science.

## New York Medical Journal.

*December* 28, 1912.

1. Salvarsan *versus* Mercury. E. W. Ruggles.
2. Municipal Supervision of Maternity. S. W. Newmayer.
3. Women in the Medical World. J. J. Walsh.
4. Progressive Deafness. J. A. Stucky.
5. Adequate Hospital Control. B. H. Waters.
6. Confidential Communications between Patient and Physician. L. M. Gompertz.
7. A Ruptured Ectopic Gestation Sac. F. W. Brandner.
8. A New Operating Urethroscope. G. Greenberg.

1. **Salvarsan versus Mercury.**—E. W. Ruggles believes that salvarsan is a very efficient ally in the symptomatic treatment of syphilis. Many lesions which have proved obstinate to or absolutely uninfluenced by the best forms of mercurial, iodide, and local treatment, have yielded almost magically to its action, and many patients with malignant syphilis who seemed doomed to an early death or deplorable deformity have been saved. Indeed its most remarkable results are attained in cases which have proved resistant to the action of mercury. Another great advantage is that one is often able to accomplish by a single treatment as much or more than by a prolonged course of mercury.

4. **Progressive Deafness.**—J. A. Stucky states that in non-exudative otitis media there is a history of variable degrees of deafness fluctuating in character. The so-called *paracusis willisiana* exists with the usual anomalies of hearing for voice and musical tones. The tinnitus and slight vertigo are aggravated by anything that accelerates the circulation or vasomotor disturbance in the labyrinth from psychic causes. The objective symptoms reveal nothing of a definite nature in the drum membrane by which one can determine the degree of deafness, this membrane appearing slightly changed or abnormal, as indicated by retraction or atrophy, opacity, or the presence of calcareous deposits. The condition of the Eustachian tube reveals no abnormality or pathological condition that can account for the impaired hearing; with both the subjective and objective symptoms indicating that the pathological changes which have so impaired the hearing function, have occurred slowly with increasing deafness and tinnitus. The bone conduction by the Webber test is increased, except in elderly people and in these we frequently find it diminished. Cases like these give a history of originating imperceptibly, and being progressive in nature, with usually no improvement after successive inflations, one concludes that, in addition to the exudative condition in the middle ear cavity, there has probably resulted ankylosis of the ossicular joints and

the fenestral structures. Cases like these, perhaps, prove more than any other ear trouble the correctness of the assertion that these diseases are a local manifestation of a systemic condition. Otosclerosis is the most embarrassing and most hopeless of all diseases of the ear of a non-infective nature. The etiology is still obscure, but the most important causes are syphilis, gout, arteriosclerosis, uric acid diathesis, pelvic diseases, and the influence of pregnancy. The subjective symptoms differ very little from those due to non-exudative otitis media, except in intensity. Giddiness or vertigo occurs less frequently, and seldom in aggravated form. The objective symptoms show practically no deviation from the normal drum membrane unless complicated by nonexudative otitis media. Tests by tuning forks give the Bezold symptom complex of (a) increased bone conduction, (b) negative Rinne, (c) elevation for lower tone limit. The majority of cases of these diseases give evidence of disturbance and faulty metabolism indicated by the presence of indican or excess of phosphates and urates in the urine, or there are present indications of previous attacks of rheumatism. By far the larger number present these indications. The next systemic condition most frequently observed is increased blood pressure or arteriosclerosis.

5. **Hospital Control of Tuberculosis.**—B. H. Waters states that the adequate hospital control of advanced or "open" stages of pulmonary tuberculosis cannot be attained without sufficient hospital accommodation and the enactment, if necessary, of special legislation conferring upon State and municipal health officers authority for compulsory removal and detention. This authority should be exercised whenever there is refusal to comply with sanitary regulations, when unsanitary home conditions exist, when the patient is of vicious character and habits, when others, especially children, are exposed to infection, and when the patient or the family are public charges or dependent upon charitable aid.

## Journal of the American Medical Association.

*December* 28, 1912.

1. Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies. R. C. Cabot.
2. Pathological Lesions of the Kidney Associated with Double Ureters. Report of Case of Hypernephroma. A. R. Stevens.
3. An Overlooked Function of Bartholin's and Cowper's Glands. D. T. Smith.
4. Effect on Later Development of Severe and Prolonged Illness in Infancy. T. D. Parke and J. H. Edmondson.
5. The Caloric Requirements of Bottle-Fed Infants. R. H. Dennett.
6. Moving Picture Illustrations in Medicine; with Special Reference to Nervous and Mental Diseases. T. H. Weisenburg.
7. Possible Transmission of Poliomyelitis Through the Dog. H. F. Laughorst.
8. A New Tonsil-Snare. W. L. Simpson.
9. A Compressed-Air Ointment Applicator and Distributor. D. W. Layman.
10. An Adenoid Curet. G. Sluder.

1. **Diagnostic Pitfalls.**—By R. C. Cabot. (See MEDICAL RECORD, Vol. 82, page 361.)

2. **Double Ureters.**—H. R. Stevens notes that if one will except the rare true cases of solitary kidney, when a blind ureter may be found on the other side extending up a short distance from the bladder, the inference is certain that for every ureteral orifice in the bladder there is a renal pelvis—perhaps more than one—and that these pelves do not communicate. Also there may be present ureters terminating at their distal ends blindly or in some part of the genital or urinary tracts other than the bladder. When a ureter crosses the median line to reach its associated kidney, that kidney is usually caudal to the one normally belonging on that side. Of two ureters running from one kidney to the bladder, that with the more mesial and more caudal opening almost always corresponds to the upper pelvis of the kidney. The history and general examination will offer valuable leads, but our surest means of diagnosing renal conditions accurately are careful comparative examinations of urines obtained by ureteral catheter, associated kidney function tests, and intelligent use of the *x*-ray. In baffling cases urine from different levels of the ureter should be collected and it is best to inject the silver solution through a large catheter first in the renal pelvis, then at successively lower points in the ureter, before radiographs are made.

3. **An Overlooked Function of Bartholin's and Cowper's Glands.**—D. T. Smith states that when the urine is voided the mucous membrane is in large measure swept bare of its free mucus, and this deprivation Nature sets out early to remedy. A contraction of the walls of these glands takes place, extruding mucus into the passages to take the place of that which has been washed away by the passing urine, thus protecting the denuded mucous membrane. The contraction of the gland walls is reinforced in the male by that of the walls of the urethra, and in the female by the contraction of the muscles about the outlet of the vagina. It is probable, too, that in all cases a reflex stimulus is conveyed to the glands which causes an increase in the quantity of their secretion. This condition is often a matter of distinct importance. In a large percentage of males the secretion is poured out with sufficient copiousness to cause it to be discharged from the urethra as a stringy mass; and many of these men consult their physicians about an imaginary spermatorrhea.

4. **Severe Illness and Later Developments.**—By T. D. Parke and J. H. Edmondson. (See MEDICAL RECORD, Vol. 81, page 1163.)

5. **Caloric Requirements of Bottle-Fed Infants.**—By R. H. Dennett. (See MEDICAL RECORD, Vol. 81, page 1161.)

6. **Moving-Picture Illustrations in Medicine.**—T. H. Weisenburg believes that the greatest value of moving pictures is to record diseases so that future generations of medical men may have a permanent record. In the future one will be able to exchange films of the different types of the same disease occurring in different countries. Rare cases may be permanently recorded. In the nervous wards of the Philadelphia Hospital a patient presented the clinical symptoms of inability to laugh on one side of the face, and yet was able to use the facial muscles for every other purpose. This patient died and his brain was obtained and carefully studied. This was the first occasion in medicine when it was possible to give a history of the case, show the specimen, and at the same time illustrate by motion pictures what the patient suffered from during life. These pictures are of the greatest scientific value because they furnish a new means of detection. The author has, for example, a photograph of a man with Jacksonian convulsions in which the fit starts in the right corner of the mouth and takes in successively the right side of the face, eyes and eyelids and then the muscles of the right hand and then the whole right arm. Ordinarily a convulsion of this type is so rapid that there is little opportunity to make extensive observations. In the demonstration of these pictures on the screen the size of the subject is greatly enlarged and it is most interesting to watch the succession of muscular twitching and to show the movement of both eyes, eyelids and brow.

## The Lancet.

*December* 21, 1912.

1. Pharmacotherapy of Pneumococcus Infections. Sir Almroth E. Wright, in conjunction with W. P. Morgan, L. Colebrook, and R. W. Dodgson.
2. Chronic Intestinal Stasis. W. Arbuthnot Lane.
3. The Treatment of Pott's Disease. With an Analysis of 116 Cases. T. H. Openshaw and P. B. Roth.
4. Is Gastric Ulcer a Frequent Precursor of Cancer? H. J. Paterson.
5. On the Secretory Activity of the Stomach in Chronic Appendicitis with Gastric Symptoms. With an Appendix containing Clinical Descriptions of 19 Cases. C. Singer.
6. Early Signs of Mediastinal Tumors. J. L. Roberts.
7. The Vaccine Treatment of Hay Fever. A. G. H. Lovell.
8. Abnormal Tuft of Hair and Plica Neuropathica. W. K. Sibley.

1. **Pharmacotherapy of Pneumococcus Infections.**—Sir Almroth E. Wright, W. P. Morgan, L. Colebrook, and R. W. Dodgson have found that ethylhydrocuprein hydro-

chlorate does not come up to the ideal of being poisonous for the pneumococcus, and non-poisonous for the nobler tissues of the patient. The drug is in the human organism —and this holds true also in some measure of its congener, quinine—*optico-neurotropic*. In the experience of A. Fraenkel three cases of amblyopia—all of which recovered —occurred among 21 pneumonic cases treated with the drug. The dose here appears to have ranged between 1 and 2 grams daily. In the meantime, in the authors' experience in Johannesburg, two cases, one of which went on to amaurosis, occurred in eight pneumonic patients treated. The doses of ethylhydrocupreinhydrochlorate ranged here between 0.5 and 2 grams daily. They were administered in some cases by the mouth, in others subcutaneously, and in others, again, both by the mouth and subcutaneously. In a third series of nine pneumonic cases which were treated by J. Parkinson at the London Hospital there were three cases in which the pupils became very widely dilated under the influence of the drug. The doses of ethylhydrocupreinhydrochlorate here ranged between 0.5 gram or less to 1.5 grams daily.

2. **Chronic Intestinal Stasis.**—W. Arbuthnot Lane employs the term "chronic intestinal stasis" to indicate such an abnormal delay in the passage of the intestinal contents through a portion or portions of the gastrointestinal tract as results in the absorption into the circulation of a greater quantity of toxic or poisonous materials than can be treated effectually by the organs whose function it is to convert them into products as inoccuous as possible to the tissues of the body. When these poisons and their products of conversion exist in excess in the circulation they produce degenerative changes in every tissue and in every organ in the body. It is probable that the textures of those organs whose business it is to convert, carry, and eliminate them suffer more than do the other tissues of the body which are merely permeated by them. In proportion as the stasis is prolonged, so under the influence of a progressive strain greater than they are able to bear these several organs undergo a degeneration which proceeds with increasing rapidity as the condition advances. The liver is the most important converter of the poisons, and the kidneys and skin are the chief excretors of the products of conversion. Unless the capacity of the several tissues of the body to resist the entry of certain organisms is inhibited by the autointoxication resulting from intestinal stasis it is impossible for these diseases to develop. The author refers more particularly to tuberculosis, rheumatoid arthritis, and similar diseases. Therefore, to meet these diseases he adopts means to improve the drainage scheme, whether simply mechanical or operative, with the most excellent results. This is nowhere better exemplified than in the extraordinarily rapid disappearance of large tuberculous glandular masses in the abdomen after disconnection of the big bowel. Pigmentation of the skin is a very marked feature in advanced cases of stasis, especially in patients with dark hair. Following almost immediately upon exclusion of the large bowel, the cold, blue, clammy hand is replaced by a warm, pinkish, dry one. Cancer of the breast, of the ducts of the liver, or of the pancreas is, according to the author, the result of chronic intestinal stasis.

5. **Chronic Appendicitis and the Stomach.**—C. Singer concludes that chronic appendicitis has been frequently found in association with gastric symptoms. When this association occurs, a gastric or duodenal ulcer may or may not be present, but in all cases the gastric juice has yielded abnormal analytical results. The abnormalities may consist of hypersecretion or of hyposecretion both of chloride and pepsin, of the presence of a peptolytic ferment, and of the elevation of the "nitrogen factor." These abnormalities can best be explained as due to toxic substances which act both on the stomach and on the appendix. Removal of the appendix does not always relieve or improve the symptoms.

6. **Early Signs of Mediastinal Tumors.**—L. Roberts emphasizes (1) the importance of obstruction of the azygos veins in explaining symptoms and localizing obstructions; (2) the importance of paying full attention to the *quantity*, as well as the *quality*, of the air entry; (3) the importance of estimating properly the significance of referred pains, especially of shoulder pain, which, though rheumatic in type, persist in spite of treatment; and (4) the seriousness of idiopathic pericardial friction in elderly people.

## British Medical Journal.

*December* 21, 1912.

1. Some Manifestations of a Healthy Heart in the Young Frequently Taken as Indications for Treatment. J. Mackenzie.
2. Observations Upon the Acoustic Phenomena in Mitral Stenosis. T. Lewis.
3. Regional Anesthesia. F. Rood.
4. Case of Stokes-Adams Disease. J. L. Falconer.
5. Nervous and Mental Symptoms in a Case of Addison's Disease. J. G. P. Phillips.
6. High-Frequency Currents in Trigeminal Neuralgia. W. F. Somerville.

1. **Manifestations of the Healthy Heart in the Young.** —By J. Mackenzie. (See page 81.)

3. **Regional Anesthesia.**—F. Rood summarizes the characteristics of this form of anesthesia as follows: (1) Granted that a suitable anesthetic solution is introduced around the trunk of a nerve, the whole area supplied by that nerve becomes anesthetic—bone, muscle, fascia, skin, etc. (2) The method can be used for operations upon inflamed tissues provided that the injection around the nerve trunk be made at some point well above the septic area. (3) The anatomical relations of the part to be operated upon are not obscured by edema caused by a large quantity of injected fluid, as is sometimes the case with wide infiltration method. (4) The anesthesia lasts for several hours. (5) The anesthetic area is clearly defined by the anatomical distribution of the nerves. Consequently there is no risk of suddenly overstepping the limits of the anesthesia, with most unpleasant results to the patient. A very important factor in the success or otherwise of this form of anesthesia is the solution used. Either eucaine, stovaine, or novocaine may be employed, but the best results have been obtained with novocaine. A 2½ per cent. solution of novocaine in distilled water is prepared and sufficient sodium chloride added to make the fluid isotonic with the blood. The whole is then sterilized by boiling, which can be done without detriment to the novocaine.

4. **Stokes-Adams Disease.**—J. L. Falconer reports a case of this condition occurring in a woman 70 years old. The points of interest are the occurrence of the disease in a woman and the combination of all types of attack, namely, syncopal, epileptiform, and apoplectiform, in the one patient.

6. **High-Frequency Currents in Trigeminal Neuralgia.** —F. Somerville reports the case of a woman aged 60 years who suffered from severe trigeminal neuralgia of eight years' duration. The attacks were frequent and even in the intervals between them the patient lived under the constant fear of their return. She had been at one of the English spas, and had been treated by ionization, but without benefit. The author began high-frequency treatment November 2, 1911, and continued this method of treatment daily with one or two intermissions until June, 1912. By that time the attacks of neuralgia had completely disappeared, and the patient's appearance and general sense of well-being showed a corresponding measure of improvement.

## Berliner klinische Wochenschrift.

*December* 16, 1912.

**New Leg Phenomenon.**—Piotrowski refers to the successive establishment of the reflexes which are known by

the names of Westphal, Babinski, and von Bechterew. By means of such resources we are now able to diagnosticate many serious nervous diseases in their earliest stages. The author's new contribution is as follows: If one percusses the tibialis anticus muscle while the leg is relaxed by pronation or suspension at a point close to its origin, say between the tuberosity of the tibia and head of the fibula, or two fingers' breadth below this point, one sees in many cases a reflex dorsal flexion and supination of the foot. This reaction corresponds to the motor effect of the physiological function. The technique is the same as that used in testing the patellar reflex. The attention of the patient should be diverted the while by Jendrassik's maneuver or some other resource. The author names the phenomenon the anticus reflex. In health it is not constant and if present not pronounced. In nervous and neuropathic subjects it is quite distinct and unequivocal. It should occur in all cases in which there is a natural tendency to quieting of the reflexes without the presence of actual disease, and which implies usually a slowing of cerebral inhibition—old, lean subjects, bed ridden and marantic subjects. Naturally its chief significance must occur when greatly exaggerated or absent, or asymmetric, other things being equal. If it occur symmetrically in a subject with slight exaggeration of other reflexes in a patient in apparent health it simply indicates a neurotic disposition. When it is pathological in significance some of the other reflexes will be in evidence. Thus far the author has tested 115 patients with the most varied diseases and including a number of healthy controls. At present he sums up as follows: The anticus reflex is almost always accompanied by increased patellar reflex, but the latter is much more a physiological phenomenon, present in all healthy subjects. Its chief value is seen in connection with organic lesions of the central nervous system, especially when spastic, but its behavior here is not typical—there is simply an irregular manifestation of some sort as variability, asymmetry, exaggeration. In general in diseased states its paradoxical behavior suggests that something is wrong.

**Autovaccination of the Tongue.**—Lublinski has previously reported an accidental vaccination of the nasal mucosa. This was not an autoinoculation as the virus came from the pustules of a child and was carried into the mother's nose by a handkerchief. The second case was that of a young child who after five days of normal vaccination developed high fever with swelling of the tongue. On the eighth day after vaccination the temperature was still high, the cervical and nuchal lymphnodes greatly swollen, more to the left than right side, while chiefly upon the left half of the dorsum linguæ were seven plaques the size each of a lintel. They extended from tip to base of the tongue, the margins and under surface being free. Each efflorescence showed a red areola and a yellowish secretion. The child had scratched the pustules as they appeared on her arms and had then sucked her fingers. Such a course could be of common occurrence so that a predisposing cause must be evoked. This was readily apparent in the fact that the child was subject to fissures in the tongue. But even with this predisposition the unique character of the lesion is explicable with difficulty. The missing link is doubtless seen in the supposition that immunization of the organism had not occurred, so that three factors made up the causal nexus. The course of the lesion was favorable in the main, and the only persistent evidence of anything unusual was the enlargement of the lymphnodes. The child was of notably lymphatic habitus.

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**Münchener medizinische Wochenschrift.**

*December 10 and 17, 1912.*

**Harmfulness of Distilled Water.**—Oehler considers this subject in its relationship to the inferior animals. It has long been known that unicellular organisms, plant and animal, soon perish in it, that it deprives muscle tissue of its irritability, that it is hemolytic, etc., etc. In man it is an open question whether the consumption of distilled water works harm. Recently it has been learned that artificial ice, from which the saline matter has not been crystallized out, is well borne in disease; while saltpoor melted natural ice, snow water, and glacier water exert an unfavorable action on the mucosæ when swallowed freely. It must be asked, however, in what manner this saltfree water disagrees. Is it because it attracts saline matter from the tissues? To throw some light on this point the author fed mice with the sound of Marks' method, giving them 1 to 2 c.c. at a time. As a result most of the animals developed hemoglobinuria about half an hour after the feeding. There was albumin in the urine but no formed elements appeared. Within three hours the urine had again become normal. A second feeding on the next day appeared to show that the animals had acquired some immunity but the phenomenon must be explained otherwise. The hemoglobinuria supervenes in the same animals upon injection; five minutes after the water is thrown into a vein the urine is red. Hence no actual immunity has resulted. If a certain amount of saline matter is added to distilled water no hemoglobinuria results. The bearing of this line of experiment on mankind is as yet unknown. The vulnerable tissues would naturally be the gastric mucosa, blood, and kidneys.

**A Simple Resource for the Differentiation of Ascites from Flaccid Ovarian Cysts.**—Dienst states that cases sometimes occur in which this differentiation cannot be made by the customary tests, so that trial laparotomy alone remains. This may be refused and in such a case puncture gives relief from the pressure symptoms. A test of the punctate is inconclusive, and cases have even occurred in which chylous ascites has been confounded with certain cystomata. The author would puncture for diagnosis in all doubtful cases. Then as ascites fluid always contains fibrinogen, while the latter is never present in cysts, he adds a third of its volume of salt crystals to some fluid in a test tube. Upon standing fibrinogen, if present, appears as a precipitate.

**Typical Street Railway Injury.**—Frank has seen several cases of injury due to the brass arches which serve to divide the lengthwise seats into individual compartments for passengers. These are constructed of round smooth brass rods and their highest point above the seat level is about 30 cm. It happens at times that women as they are seating themselves accidentally sit upon these brass arms in such a manner that the genitals are injured. A jolt of the car is probably responsible for the mishap. In one victim the right labium majoris was bruised and swollen. Another sustained a severe immediate hemorrhage from a laceration between the clitoris and meatus. In these two cases no serious consequences resulted but a wound of the urethra could result disastrously. The offending structure is not present in cars of the latest construction.

**Simultaneous Occurrence of Achylia Gastrica and Achylia Pancreatica.**—Gross calls attention to the well-known fact that patients with hypo- or achlorhydria often first consult the practitioner for diarrhea. The stomach in these cases supplies no symptoms whatever. We may assume in these cases several injurious consequences to the intestine of absence of gastric juice—for example, defect of its antibacterial action on intestinal flora. But none of these explanations really explains, for in many instances of pure achlorhydria we do not see diarrhea. A much more plausible supposition for these diarrhea cases is that there is associated an achylia pancreatica, a matter which should not be difficult of verification. The author has for several years past been testing the pancreatic function in all cases of achylia gastrica with diarrhea, con-

trolled by similar investigation of cases without diarrhea. The author does not appear to have tested the pancreatic activity beyond examination of stools for their tryptic activity on casein. Nothing is said of tests for fat in the stools, and fatty diarrhea is not even mentioned beyond the statements that we are not dealing with organic disease of the pancreas, and that the condition is really a hypochylia of the pancreas which is chiefly manifested by tryptic insufficiency. The author treats these cases successfully with a combination of HCl and pepsin and pancreatin.

**Abstinence Delirium of Alcoholics.**—Fürer refers to the newer doctrines of alcoholism specialists that abstinence delirium is more or less a bugbear and that the use of the drug may commonly be suppressed at once without prejudice, supposing, of course, that the patient is to be under proper treatment. The public and rank and file of practitioners do not agree with the sanatorium men and in theory the contention of the latter seems all wrong. During the past fifteen years the author has treated 500 chronic alcoholics with sudden withdrawal of drink. The patients were naturally of the upper classes, as the poorer individuals cannot avail themselves of private sanatorium treatment. The ages varied from 16 to 64 and 46 were females. The type of alcoholism was that dependent upon a steady impulse to keep constantly intoxicated, either temporarily or the year around. The amount and kind of drink taken varied widely, the record being held by a man who drank daily a liter of 96 per cent. alcohol with added amounts of beer, wine, and the ordinary spirituous drinks which were taken in accordance with the requirements of thirst. The most conspicuous effect was temporary failure of mental power in connection with the demands of business and personal and social exactions. There was a state of over-anxiety or fear, which was expressed incidentally in connection with the abolition of the habit—a fear of disastrous consequences or intense suffering, or both. Moral dereliction was frequently in evidence, as were also alcoholic epilepsy, Korsakoff, and other forms of alienation and of course delirium tremens. Of somatic disturbances there were tremor, neuritis, and gastroenteric disturbances. On the other hand, myocarditis, arteriosclerosis, renal and hepatic diseases, and diabetes were not greatly in evidence. As one-half the men had contracted syphilis at some period the arteriosclerosis, hepatic cirrhosis, and some other lesions could be set down in part to this component. Upon this background the author studied the matter of abstinence delirium. The patients were at once placed on rational treatment in connection with suppression, and but seven cases of delirium tremens appeared—a very small number, but sufficient to prove that abstinence delirium really exists, and under unfavorable conditions might even be of common occurrence, thus bearing out the contention of the old-time practitioner and public.

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## Deutsche medizinische Wochenschrift.

*December* 12, 1912.

**Trachoma-like Affection from Blastomycetes.**—Stiel calls attention to the fact that several Italian investigators claim to have found in trachoma cells which they regarded as blastomycetes. More recently Prowazek and Leber mention the find of yeast cells in a trachoma native to the South Sea Islands. The fungi had not been obtained in cultures, perhaps because of the conviction that a secretion from the conjunctiva is necessary for this purpose. The converse should be true for the discharge from a diseased eye must contain other microorganisms in addition to the one accused. The author has therefore chosen to use only solid trachomatous tissue for cultural purposes. Study of the subepithelial tissues by the author revealed bodies which as closely as possible resembled those described by the Italian investigators. But attempts to cultivate the supposed blastomycetes met with failure for the time being as has happened with all the predecessors. At last the author succeeded in obtaining a pure culture, which agreed with Busse's "pathogenic yeast." Attempts to inoculate the conjunctivæ of blind subjects—naturally with their full permission—ended negatively. In a case seen in the clinic in which diagnosis lay between trachoma, chronic gonorrhea, and tuberculosis, the author made exhaustive studies and could seemingly exclude all three of these affections. Some so-called trachoma bodies were present but not to a greater degree than are seen in miscellaneous affections of the eye. The important finds were yeast cells and staphylococci. The former the author regards as the cause of ordinary trachoma, and he has already named it "saccharomyces trachomatis." He feels sure that we shall soon succeed in inoculating this microorganism.

**Principles of Psychotherapy.**—Veraguth attempts to build up a rational system of psychotherapy from the pioneer work of various authorities. The psyche of an individual must depend upon the "conflict of development," which is naturally largely sexual in character. Another element is desire for truth. These tendencies are naturally suppressed. There is a continual conflict between the young and their elders. Only recently have attempts been made to study the soul of the child which must naturally correspond to a certain stage of racial development. The infantile conflict sometimes remains unsolved through physical development which may go ahead unchecked in all other respects. The author speaks of normal full development as biologic correcture. The latter comes about through a sort of vicarious action in which arrested development in one direction may be compensated in another. It is common experience that neuropaths are often lively children. Psychotherapy embodies two principles, first the making of the subject acquainted with the heights and depths of his own soul, and second, the application of artificial biological correcture.

**"Secondary" Tuberculosis.**—Bacmeister and Rueben have made extensive researches into the content of circulating blood in tubercle bacilli and have come to some startling conclusions. It is, of course, understood that the blood of consumptives is thus infected but that a bacillemia is also compatible with incipient and healed tuberculosis and in scrofulous affections means that our entire knowledge of tuberculosis is in need of revision. The authors have confirmed the finds of their predecessors in all these particulars, but announce that the same acid-fast bacteria circulate in the blood of nontuberculous men and animals, in which a von Pirquet reaction is negative. The claim must be upheld for the time that this bacillemia cannot represent a tuberculous infection as there is no corroboration of its pathogenicity. Animal experiment gives negative results. The chief importance of these discoveries is that the demonstration of these bacilli in the blood has no value without some evidence of pathogenicity. For the bacillemia the authors employ the designation "secondary" tuberculosis, although the purport of this adiective is not quite apparent.

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**Auricular Fibrillation and Its Effects Upon the Circulation.**—T. Lewis states that when the auricles fibrillate, the following effects are observed: 1. The arterial blood pressure may rise, fall, or remain stationary. Usually it falls. If it falls, it generally rises again towards or to the initial pressure. 2. The venous pressure changes are the reverse of the arterial. 3. The intestinal volume and the cardiac output changes are in the same direction as those of arterial blood pressure. 4. From these observations it may be concluded that the peripheral circulatory effects are purely passive. 5. The volume of the heart decreases except in instances where there is reason to believe that the circulation is failing.—*Journal of Experimental Medicine.*

## Insurance Medicine.

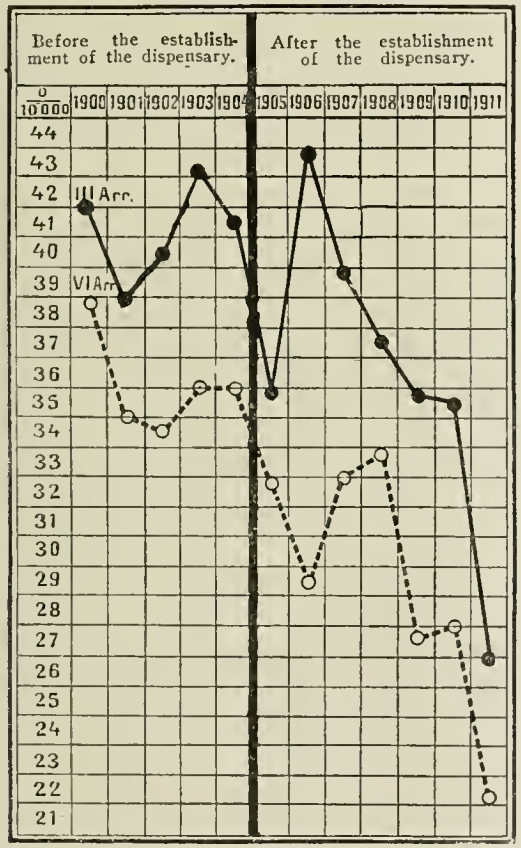
### REDUCTION OF THE MORTALITY FROM TUBERCULOSIS.

(From Our Insurance Correspondent.)

PARIS, December 23, 1912.

To lower the mortality of any disease is certainly of prime importance to all life insurance companies and where this can be done by preventive measures with judicious administration and care, the primary financial outlay is certainly small when compared with results such as those we are about to quote.

Dr. Jules Courmont of Lyons, France, in an interesting atricle in the *Presse Médicale,* shows the good work which has been accomplished in Lyons in the crusade against consumption by systematic preventive work on certain well-planned lines thoroughly carried out. The Antituberculosis Dispensary of Lyons was opened in 1905, and after seven years of work the results obtained are most satisfactory in every respect. The dispensary consists of a large well-aired and ventilated building with accommodation for bathing, laundry, and disinfection of clothes, consulting rooms, waiting rooms, and a laboratory for analyzing sputum. There are three attending physicians and each physician has a certain number of families allotted to his care so that he may follow the cases rationally.




Mortality from tuberculosis in the third and sixth wards in Lyons before and after the establishment of the dispensary.

Two inquiry agents are included in the staff, whose duty consists in visiting and inquiring after different families and educating the patients in the principles of hygiene. These men are present at the consultations and make sure that the patients go in in order with their cards and case-notes so that no time is lost. Two employees have charge of the disinfection of the houses in which tuberculous patients are living. The houses in such cases are disinfected once a month. One employee in the dispensary has care of the disinfection of the patients' linen and of the baths and douches for the patients.

Dr. Courmont then describes the arrangements made with the town authorities to insure the cooperation of the town with the dispensary for the providing of food to poor patients, and the supplying of separate beds to contagious patients in their homes. Special supervision is given to such patients and the other members of the family.

The statistics given are most useful and interesting and we shall quote them here. Since 1905 2,769 tuberculous families have come under the care of the dispensary, the following being the details:

| | |
|---|---|
| Total tuberculous cases | 766 |
| Contagious cases | 240 |
| Deaths from tuberculosis | 110 |
| Consultations | 9,037 |
| Visits by inquiry agents | 2,855 |
| Houses disinfected after death or departure | 218 |
| Houses disinfected during residence of infected patients | 1,255 |

From this some idea of the work done may be obtained. Tables of amount of linen washed, meat distributed, etc., are also given. If we now turn to the results obtained, Dr. Courmont explains how the mortality decrease is due to the work of the dispensary. Note must also be taken of the fact that the first mortality figures are too low as the notification of deaths from tuberculosis was frequently not a complete report, and this explains how the mortality appears in the reports of the first year to have suddenly increased, whereas this is merely due to more careful registration of deaths.

| | Inhabitants | Mortality | |
|---|---|---|---|
| Year. | Census of 1910. | Totals. | Per 10,000. |
| 1905 | 459,099 | 1,506 | 31.9 |
| 1906 | 472,114 | 1,726 | 36.5 |
| 1907 | " | 1,615 | 34.2 |
| 1908 | " | 1,544 | 32.7 |
| 1909 | " | 1,496 | 31.7 |
| 1910 | " | 1,462 | 31.1 |
| 1911 | 523,796 | 1,344 | 26.1 |

The mean tuberculosis mortality during the five years 1900-1904 was 35.4; during 1911 it was only 26.1. This shows a gain of 9.3 per 10,000 inhabitants or 483.6 inhabitants per annum in the town of Lyons.

In a chart which is here given it is shown that the mortality has fallen most notably in the poorer quarters of the town in the third ward from 42 to 27 per 10,000 and in the sixth ward from 39 to 22.

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**Some Manifestations of a Healthy Heart in the Young.**—James Mackenzie has been impressed with the fact that a large number of young people are subjected to many forms of treatment because of the presence of certain phenomena which experience has taught him are signs neither of disease nor of impairment. Cardiac symptomatology has been involved in a state of confusion, not only with reference to the significance of irregular action of the heart, and of murmurs, but also with reference to prognosis. Practically every writer who gives the matter his serious attention is forced to admit that we do not possess the data on which to build a resonable and sound prognosis. One of the

greatest and most experienced clinicians, the late Sir William Gairdner, has accurately described the position of the medical examiner for life insurance in his method of estimating a life value. He says: "There is an incalculable element in most of the cases . . . which we deal with in the most curiously unsatisfactory way, either by rejecting the life altogether, or by putting on a big loading, which, it must be admitted, we assess upon no very sound or clear principles, or, on the other hand, by winking at the defect and passing it over." He points out that there are no reliable data on which to estimate the prognostic significance of murmurs and irregularities. This description of the absence of reliable data on which to base a prognosis holds good to-day, not only in life insurance, but wherever a prognosis is based on a physical examination.

Irregular heart action is a common manifestation, but one whose nature and significance are not clearly explained in textbooks. The great majority of heart irregularities can be divided into four groups, all differing in the mechanism of their production and in their clinical significance. These groups are the pulsus alternans, the irregularity of auricular fibrillation, the extrasystole, and the youthful type of irregularity. (1) The pulsus alternans is a form which is regular in its rhythm, but one in which a large beat alternates with a small one. The pulsus alternans occurs only when there is great exhaustion of the heart muscle. It may be that the exhaustion is only temporary, as in the tachycardias which arise from an abnormal action of the heart, or it may arise from exhaustion due to such profound alterations in the heart muscle that it indicates in many cases an exhaustion so extreme that death will shortly follow. (2) In auricular fibrillation the irregularity is of a very disorderly kind. From the point of view of the future life of the individual it has a varied significance. It occurs in 70 to 80 per cent. of all the cases of heart failure with dropsy. (3) The extrasystole is extremely common in adult life and rather infrequent in the young. It is due to a premature contraction followed by a long pause. The vast majority of people who show it are in good health and never suffer from heart failure. (4) The youthful type of irregularity is characterized by a variation in the length of the diastolic period. It may appear and disappear in the same individual for no perceptible reason. Every healthy individual probably shows it at one time or another. It is found most frequently and most markedly when the patient lies in bed after a febrile attack, but it is often found in boys and girls in perfect health. The author has watched those showing it grow up and pass into adult life and has never found a single case in which it has been associated with any form of heart failure.

Functional murmurs in the young in the absence of evidence of muscle affection are signs neither of disease nor of impairment. A murmur or an irregularity is of significance only when it is associated with some manifest impairment of the heart muscle. What are the evidences by which one can recognize affections of the heart muscle? These evidences are: (1) Increase in the size of the heart, due either to dilatation or to hypertrophy of its walls, particularly if associated with persistent increase in the rate of the heart and marked loss of power. (2) Murmurs are not necessarily a sign of dilatation. (3) The condition of the functional efficiency of the heart. This is the best and most accurate, and, in fact, the only reliable method of estimating the condition of the heart muscle. This method consists in finding out how the heart responds to effort and recognizing the symptoms which indicate its exhaustion. The chief symptoms are subjective.

The method of estimating the heart's strength by testing the functional efficiency, which is the most essential part in every examination, has been to a great extent neglected. In proof of this one need only consider the insurance certificate which medical men fill out. All the questions are restricted to the physical examination and not one is directed to finding out the functional efficiency of the organ, by which only the facts which are essential to a prognosis of the heart's condition can be ascertained. Notwithstanding this fact, the books which are supposed to guide the medical examiner give no hint that such a method exists. The result is that individuals are accepted at normal rates because a physical examination revealed no abnormality, whereas if an inquiry had been directed to the functional efficiency of the heart, the symptoms of exhaustion which heralded the unexpected death of the individual would have been revealed. On the other hand individuals are rejected for life insurance because of the presence of some harmless manifestations, whose significance the examiner does not understand, and whose value he can not appreciate, simply because he fails to apply and to appreciate this method of testing the heart's efficiency.—*British Medical Journal,* December 21, 1912.

**Softening of the Brain Acknowledged as the Result of Accident.**—Räuber relates the case of a man who sustained a fall of 4 meters height upon the nates, which, as a consequence, showed bruises. The victim was much frightened, and unable to recall whether he had lost consciousness at all. He lay in bed a fortnight and did not recover wholly from the effects of the injury for six months. No physician had been consulted at any time. Three years later, he was pronounced of unsound mind (circular insanity) but this was not attributed to the accident. When the author first saw the case, the subject presented the picture of dementia paralytica. The pupils were narrow and rigid, the tongue tremulous, no knee reflexes. The first signs had been noted as an alteration of disposition about six months after the injury. His health before the latter had been excellent. The author gave his expert opinion that the shock of the injury was calculated to precipitate first a tabes dorsalis and later the cerebral softening. Such cases have been reported with this expertisation. Goldscheider, in a deposition, stated that the existence of such a sequence was well recognized. The victim upon the author's testimony was awarded his accident insurance, but the case was at once appealed. A further expert opinion held that the case was one of taboparesis. Since the syphilitic foundation of the latter was recognized, a superposed trauma must answer two requirements. 1. It must be a considerable injury, but not necessarily involve the cranium directly. The shock to the body at large and especially the psychic shock must be taken into account. 2. A certain interval, from a few months to eighteen months, must have elapsed before the symptoms appear. Had it not been for the accident, the patient would doubtless have been able to earn his living for an indefinite period.—*Zeitschrift für Versicherungsmedizin,* 1912, V. Heft, 10.

# Book Reviews.

Wheeler's Handbook of Medicine. By William R. Jack, B.Sc., M.D., F.R.F.S.G., Assistant Physician to the Western Infirmary of Glasgow. Fourth Edition. Price $3, cloth; $3.25, flexible leather. New York. William Wood & Company, 1912.

The present edition of this well-known work contains a new section on Intoxications, and new articles on some of the Tropical Diseases. There is also a brief synopsis on Immunity. The other articles have been carefully revised, and some of them have been rewritten. An important feature of this book is the correlation of symptoms with the facts of anatomy and physiology; this makes it particularly useful to the student in connection with his work in the hospital and dispensary. The subject of treatment is not shirked, and the book can be recommended as one of the best of the small works on Practice.

Ueber Serodiagnostik und Serotherapie in der Augenheilkunde. Von Privatdozent Dr. Otto Kuffler, I. Assistant der Grossherzoglichen Universitats-Augenklinik in Giessen. Price 8 M. Halle A. S.: Carl Marhold Verlagsbuchhandlung, 1912.

Kuffler's brochure of 56 pages takes up the consideration of the subject of diagnosis and therapy in the diseases of the eye by means of sera and vaccines in a very thorough way, giving methods, technique, symptoms induced and results. The theories to explain reactions and effects are discussed. The author enters into a careful consideration of the relation of the various diseases of the eye to infection and, by weighing the evidence obtained by personal laboratory research and a study of the literature on the subject, arrives at conclusions that are of much clinical and therapeutic value. An extensive bibliography is attached. The monograph is worthy of careful perusal by all who practise ophthalmology.

Beiträge zur Chemotherapie der Tuberkulose. Nach den Vorträgen von Prof. Dr. Gräfin von Linden, Bonn; Prof. Dr. E. Meissen, Hohenhonnef; Dr. A. Strauss, Barmen. Price M. 1.50. Würzburg: Verlag von Curt Kabitzsch, 1912.

In this contribution Prof. Dr. Gräfin von Linden speaks of her successful experiments in treating tuberculous cattle with methyl-blue and copper salts. Professor Meissen, the director of the Hohenhonnef Sanatorium, speaks of his experiments with copper salts on 47 patients. While not over-enthusiastic, he thinks that chemotherapy has a future and encourages further investigations. What seems from the reviewer's point of view rather remarkable and perhaps favorable is the rather slow therapeutic effect of the copper salts on the active lesions. Strauss relates a case of lupus and one of a tuberculous abscess of the thigh successfully treated by local injections of jod-methyl-blue, 6 c.c. twice weekly, and internal administration of copper albuminates.

Contributions a l'Étude du Traitement des Tuberculoses Externes par les Injections Modificatrices. Les Injections d'Huile Gomenolee. By Dr. Jacques Tribes. Price 2 francs. Paris: A. Maloine, Editor.

This monograph of 82 pages gives a description of the author's method of using and the successful results obtained from the gomenol oil in localized tuberculosis of joints and glands. Gomenol is extracted from the young leaves of one of the varieties of *Melaleuca viridiflora*, a tree indigenous to New Caledonia. Its essential therapeutic qualities are ascribed to the turpentine, of which it contains to a very large amount.

Beiträge zur Klinik der Tuberkulose und Spezifischen Tuberkulose-Forschung. Vol. XXIII, No. 1. By Dr. Ludolph Brauer. Price M. 6.50. Würzburg: Curt Kabitzsch Verlag, 1912.

This is an unusually interesting number of the Beiträge, comprising mainly the researches conducted in the new sanatorium for the tuberculous at Schömberg, of which G. Schröder is the physician in chief. The latter, in collaboration with Drs. Kaufmann and Kögel, contributes a remarkable article on the rôle of the spleen as a defensive organ in tuberculous infections. In a subsequent article by Schröder himself, entitled "Tuberkulin-Behandlung," he comes to some very interesting conclusions which tuberculin enthusiasts may well take to heart. He says among other things that the use of tuberculin as a means of early diagnosis in lung tuberculosis is scarcely of any value, the possible usefulness scarcely compensating for its danger; that pathological and biological researches and animal experimentations do not prove that the non-reaction to tuberculin guarantees a sure cure, and that statistical data of institutions likewise confirm this conclusion. He states that those supposedly rendered immune by tuberculin are seemingly inclined to severe relapses, and that tuberculin susceptibility is a phenomenon of immunization that cannot be artificially removed. With the very smallest and not too frequently administered doses of tuberculin a cure may be helped along, but the principal therapeutic factors consist in the hygienic, dietetic, and physical methods. Lastly, he says that the use of tuberculin in general practice is for the time being still to be cautioned against.

Other interesting articles in the same number are one by Kögel on the von Pirquet reaction in graduated doses and its relation to prognosis in pulmonary tuberculosis. Kögel thinks it most probable that a strong reaction in early cases is a rather favorable prognostic sign. Kaufmann contributes two more articles, one of value in our studies of artificial pneumothorax. He watched the changes of the pleura and lung in a healthy dog in which he had produced artificial pneumothorax. In his conclusions he speaks of the relatively few cases in which artificial pneumothorax is indicated, but he admits that when it is indicated, the likelihood of compression of healthy lung tissue with diseased tissue must be left out of consideration. The next article by the same author is on mixed infection, and the last contribution in this remarkable series of interesting papers is the doctor thesis of L. Brüll on "Dauererfolge bei Larynxtuberkulose." This article is an optimistic one and the first conclusion is certainly one which, in the opinion of most tuberculosis specialists, will seem somewhat exaggerated. He says "die Larynxtuberkulose ist in all ihren Formen dauernd heilbar." As important factors to a favorable prognosis he emphasizes the extent of the lesions in the lungs, temperature, and hereditary tendencies. One of his most gratifying conclusions is that the therapeutic nihilismus in tuberculosis of the larynx has no justification. The young and gifted author was not privileged to see his article in print. A sudden death terminated what promised to be a brilliant career. His chief, Dr. Schröder, revised the article for publication.

Ueber Säuglingsernährung. Von Dr. Ernst Schloss. Mit 59 Kurven im Text und auf 3 Tafeln. Price 6 marks. Berlin: Verlag von S. Karger, 1912.

This is an interesting discussion of the subject of infant feeding, chiefly from the viewpoint of the modern development of this subject in Germany. The chapter headings indicate the scope and content of the entire work. These headings are as follows: The former methods of artificial feeding and their tendency; the problem of artificial feeding in theory and experiment; the practical consequences; the technique of feeding; the criteria of the value of feeding methods; the results of infant feeding; the dependence of results of infant feeding upon external conditions; the influence of summer heat upon the course of nutrition; nutrition and infection; nutrition and constitution; and the course of development.

A Clinical Manual of the Malformations and Congenital Diseases of the Fetus. By Professor Dr. R. Birnbaum, Chief Physician to the University Clinic for Women at Göttingen. Translated and annotated by G. Blacker, M.D., B.S., F.R.C.P., F.R.C.S., Obstetric Physician to University College Hospital and the Great Northern Central Hospital; Teacher of Practical Midwifery at University College Hospital Medical School, etc. With 58 illustrations in the text and 8 plates. Philadelphia: P. Blakiston's Son & Co., 1912.

It is correctly stated by the author in the preface to this volume that "malformations and congenital diseases are of interest from several points of view; thus they have an anatomical, pathological, physiological, clinical—more especially in relation to surgery and obstetrics—and medicolegal importance." For these reasons the present volume which represents the first attempt, at any rate in the English language, to present a full discussion of the clinical aspect of congenital malformations, is a most valuable contribution to medical knowledge. It contains a comprehensive survey of the literature of the subject, in addition to the author's own extensive observations. The subject is presented in an interesting manner, and particularly with reference to its practical applications. It is well written, and the literary skill of the translator, editor, and teacher is evident on every page. To the pediatrist, to the obstetrician, to the surgeon, and also to the general practitioner this volume may be recommended without reserve as a most valuable one.

# Society Reports.

## REPORTS FROM THE MONDAY CONFERENCES OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.

### FIRST DIVISION—DR. JOSEPH COLLINS.

**Juvenile Tabes.**—Dr. JOSEPH COLLINS presented the following case: The patient, a little girl five years old, entered the Neurological Institute on August 15, 1912. The story that her mother related was that she was a full term child, born, however, as the result of a very difficult labor which lasted four days. She was breast fed until she was nine months old. She learned to walk at ten months, and began to talk shortly afterwards. Until her third year, when the illness for which she was brought to the hospital developed, she seemed to have had good health. She then had an attack of convulsions following, apparently, a fit of anger. These convulsions, which are now typically epileptical in character and which apparently have always been of the same kind, occur with varying frequency, sometimes once a day, sometimes a month apart. Her mother says she first becomes confused, then her face pales, her head turns to the right, she bites the tongue, then falls, and the limbs stiffen out equally on both sides. There are no clonic movements. There is complete loss of consciousness for about five minutes; she then starts to cry and can get up and run about. After she had been having these attacks for about a year she was seized with the measles and was sick for two weeks. It was noted that after she got up from the attack of measles, she did not walk securely. Nevertheless, she kept about for three days, then she refused to walk, and when she attempted to do so she staggered and reeled most insecurely. It is for this difficulty in walking, in standing, and of inability to control the action of her bladder, that she was brought to the hospital; but in addition to these symptoms, she has difficulty of hearing which seems to have followed complaint of noises in both ears, especially in the right ear, which came on about six months after her ataxic symptoms and which followed a yellowish discharge from the right ear. Six months after this discharge the parents noticed that she was quite deaf and this has increased in intensity; after it there has been a corresponding shrinkage of the patient's speech.

To summarize briefly: Good health until two years of age when convulsions of an epileptic character occurred. Then, after a severe attack of measles (April 27, 1911), profound ataxia. Inability to walk until June 9, 1911, when she gradually learned to walk, as a baby does. In January, 1911, pain in the ears followed by prurient discharge in August, 1911, by marked deafness and by shrinkage in speech.

Physical examination reveals: (1) Profound ataxia; (2) Argyl-Robertson pupils; (3) Absence of the tendon jerks; (4) Profound loss of deep sensibility; (5) Distinct hypotonus of the lower extremities, and to a lesser extent of the upper; (6) Profound anesthesia and analgesia over the entire body and below the nipples.

In other words, she has all of the classical symptoms and signs of tabes. But the diagnosis is not corroborated by the laboratory findings. The Wassermann reaction of the blood serum is negative, and both the chemical and the microscopical examinations of the cerebrospinal fluid seem to be negative. This, however, is not so astonishing as the fact that her father, her mother, her sister, and a brother show a strongly positive Wassermann reaction of the blood which, by the way, it may be said, has now destroyed in the entire family any salvarsan therapy. That the tabetic process in this child had its origin in the luetic infection despite the negative findings of the cerebrospinal fluid may readily be admitted. One can easily imagine that the activity of the poison ceased to exist in giving birth to the structural disease of the posterior columns when our ignorance led us to posit an hypothesis which set forth that such diseases as tabes and paresis were parasyphilitic diseases, *i.e.* diseases that developed after the luetic infection had ceased to exist as such. We taught that the virus lost its identity in giving rise to the diseases. We further taught that luetic disease was characterized by a most strikingly characteristic pathological process. We now know that although that may be in a large measure true, it is not the *whole* truth, and that the syphilitic reaction in the tissues by no means invariably causes a round cell accumulation which constitutes gummatous infiltration, which it was formerly thought to do. On the contrary, there is a syphilitic pathological process that is not to be identified with what is currently believed to be the classical pathological process. It is to be hoped that histological study of posterior roots and spinal cords of very early cases of tabes in conjunction with study of the cerebrospinal fluid may reveal what these early syphilitic lesions are.

Certain it is that the occurrence of infantile tabes in a patient in whom there is a negative condition of the blood and cerebrospinal fluid, so far as the Wassermann reaction is concerned, is an extremely interesting one.

It is interesting to inquire what the attack of convulsions that this child had for a year antedating the clinical manifestations of her tabes, and the periodical febrile attacks which she had during the summer of 1911, that is, after her attack of measles, were dependent upon. During that time her blood was examined for malarial plasmodia by her physician in Pennsylvania, who was then taking care of her, although she lived in a mountainous district where malaria was said not to occur, and no plasmodia were found. It is quite possible that the child's attacks, both epileptic and febrile, may be construed as dependent upon syphilitic infection.

### SECOND DIVISION—DR. FREDERICK PETERSON.

**Fibrosarcoma of Cervical Spine Producing Paralysis of All Four Limbs—Cured by Operation.**—Dr. FOSTER KENNEDY showed the following case: L. H., female, aged 12 years. Admitted to New York Neurological Institute on May 15, 1912, complaining of paralysis of the lower and marked weakness of the upper extremities. In May, 1911, after unusual exertion, she noticed she tripped with the right foot. A week later there was a definite weakness in the right leg, which felt heavy and frequently dragged in walking. This was progressive and in three months was also present to a less evident degree in the left leg. Occasional pain in inner side of right thigh and in the right shoulder.

In September, 1911, the weakness in the right hand and arm was reported as progressive.

In February, 1912, there was progressive weakness in the left hand and arm, together with frequent reflex jerking of the arms and legs. No sphincter trouble. There was a subjective sensation of numbness and heaviness in all four limbs and in the trunk almost to the clavicular level.

Examination: Cranial nerves normal. Motor system: Arms—The hands can only feebly be closed and show hyperextension in this movement at each wrist. There is atrophy of the intrinsic hand muscles and of the triceps on each side. Both deltoids are much enfeebled and wasted. Abdominal recti muscles are almost or quite palsied. Lower extremities: Complete palsy of left leg for all movements. On the right side a very slight degree of knee flexion can be performed.

Sensory system: Loss of power to appreciate pain, thermic, and touch stimuli below the level of the third dorsal vertebra, and also along the ulnar borders of both

upper extremities controlled by the eighth cervical and first and second dorsal spinal segments. Deep muscle pain sense is retained though slightly diminished in legs.

Sense of position is lost in the two ulnar fingers, right and left, and diminished in the toes. There is astereognosis in both hands.

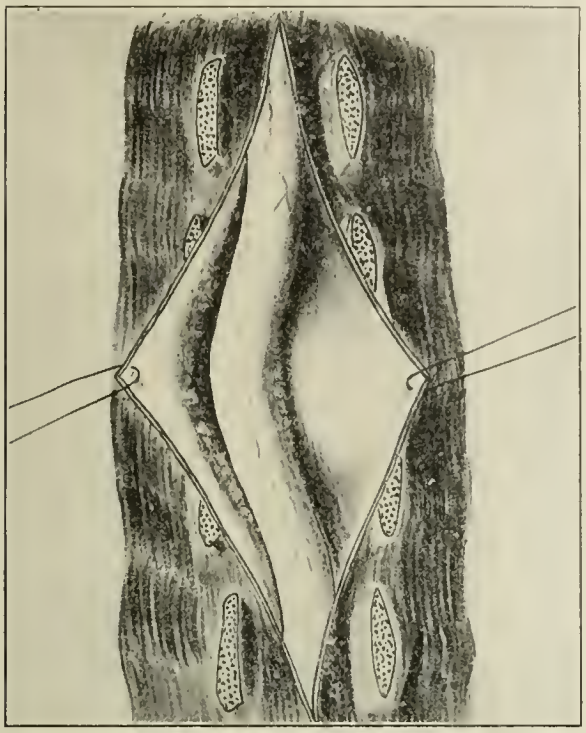

FIG. 1.—Fibrosarcoma of the cervical spine; view of the cord on opening the theca, showing the distortion.

Reflexes: Arm jerks absent; abdominal reflexes absent; knee jerks exaggerated, the right more than the left; ankle jerks exaggerated equally in the two sides; ankle clonus greater in the right than in the left side; plantars, both of extensor type; no sphincter trouble.

Cerebrospinal fluid: Wassermann reaction negative, cells absent, globulin content increased.

Skiagraph by Dr. Lewis Cole showed a very definite destruction of the four lower cervical vertebræ in the region of the intervertebral foramina. In spite of this there was no tenderness nor rigidity in the cervical spine, nor was any pain produced by cervical movements.

On May 31, Dr. Elsberg operated. The spines and laminæ of the sixth and seventh cervical and first dorsal vertebræ were removed. The theca was enormously distended and when incised cerebrospinal fluid spurted out to the distance of one foot. The cord was congested and pushed to the left. No tumor was found within the theca. The spines and laminæ of the fifth cervical segment were then removed, and the cord in its membranes pulled over strongly to the left. This procedure resulted in exposing an extradural tumor, about 4 x 3 cm. in size, lying in the right-hand corner of the anterior part of the spinal canal. Into this new growth ran the C. 7 and C. 8 posterior roots. These were cut. In its removal the tumor ruptured and had in consequence to be taken away with a sharp spoon leaving a large bone cavity produced by pressure erosion. Pathological report: Fibrosarcoma.

For a week following operation there was complete abolition of the knee and ankle jerks. Frequent incontinence of urine and feces. Complete palsy of both tricep muscles and acute flexion of the elbows by the unantagonized action of the biceps on each side. Sensory condition as before.

June 23.—Occasional incontinence of urine. No rectal trouble. Power beginning to return in both lower extremities, the left better than right. Grasps improving. Sensory condition, as before as regards distribution but only relative in degree for all forms. Knee and ankle jerks increased.

August.—Patient now able to stand and walk a few steps with help. No sphincter trouble. Sensory disturbance almost entirely absent.

November.—Patient can walk and run unaided. No sensory disturbance. No sphincter trouble. Power good in both hands. Some atrophy in intrinsic muscles of right hand still present.

THIRD DIVISION—DR. PEARCE BAILEY.

**Myasthenia Gravis.**—Dr. BAILEY presented the following case, which showed that between the attacks of this disease functional activity of the affected muscles may be restored, and the bulbar symptoms may be absent.

The patient, a young German woman, 20 years of age, gave no history significant as to heredity, and, with the exception of an attack of scarlet fever at the age of 12, and diphtheria (antitoxin) in February, 1911, a few months before the onset of the present trouble, the patient herself had always been well in every respect. The disease was ushered in by fatigue in the muscles of the arms and legs especially in the movements of rising and stooping, and movements which required the raising of the arms above the head. There was no spontaneous pain, but the limbs and back felt so tired at times that it amounted to pain. The left arm and leg were always the worst. This fatigue was markedly increased by the use of the muscles. She felt fairly well in the mornings, but as the day wore on she would become so weak, sometimes as early as by 12, noon, that she would have to go to bed. The condition progressed; objects that she lifted from shelves would drop from her hands and she would fall down in walking.

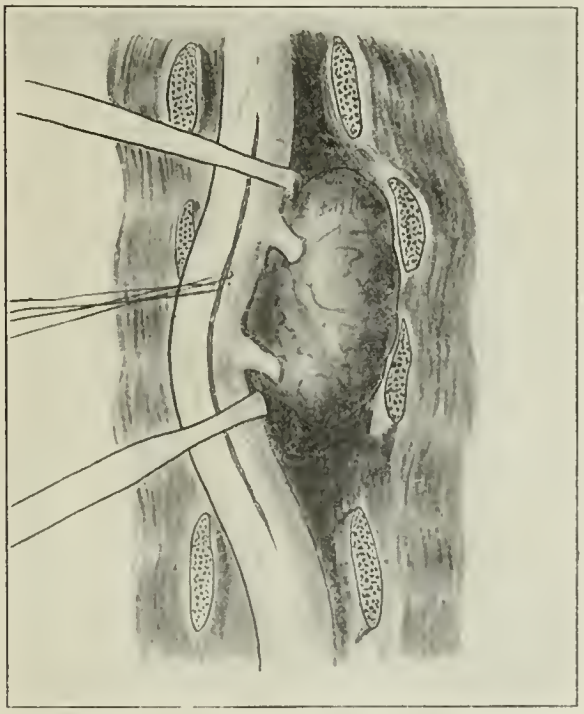

FIG. 2—Dural sac retracted to show the tumor in its bed in the spinal canal. In this case the *x*-ray picture showed a marked enlargement of the canal at the level of the tumor, due to absorption of bone. (Drawn by Dr. Elsberg after operation.)

On admission she showed marked weakness of the muscles of the shoulder and hip girdles. She could not raise the arms horizontally, and in walking she waddled in the way characteristic of loss of power of the muscles about the hip, as is seen in juvenile dystrophy. She could not

get up from the floor unaided. She could stand and walk on her heels and toes, and had a strong, firm grip, and could execute these movements in rapid succession without evidence of fatigue, but in movements actuated by the muscles springing from the trunk, the fatigue was extreme. If she persisted in walking, she would fall, and by repeatedly raising the arms from the side she soon lost the power to raise them at all. This distribution of the motor weakness deceived us at first so that we thought the case might be one of muscular dystrophy, as the distribution of fatigue corresponded exactly with the weakness of muscular dystrophy. This view, however, was later abandoned. Another feature which hindered the diagnosis at first was that there was no involvement of any of the muscles supplied by the cranial nerves, no atrophy, no myasthenic reaction, no disturbances of sensation, no glandular enlargements. On her first admission the knee jerks were diminished, but soon became normal. Examinations of the blood, serum, and cerebrospinal fluid were negative, and the stomach contents, intestinal contents, and renal excretions were all normal. Chloride estimations were made, as the result of which it was discovered that the amount of chlorides was much below normal.

This patient was in the hospital twice, and after her first admission, on no special medication, she improved very rapidly, and left the hospital in six weeks, walking without a limp, using the arms freely, and feeling as strong as ever. She soon relapsed, and was readmitted in even a worse condition than before.

The case is important, first, on account of the difficulty it presented, until all the conditions were known, in being differentiated from a case of Erb's juvenile dystrophy; second, from the fact that while under our observation there was never any involvement of the cranial nerves and it will be remembered that this symptom is so common in myasthenia gravis that one of the names for the condition is "pseudo bulbar palsy"; third, negative results of careful chemical examinations; fourth, complete though temporary restoration of muscular power, with total disappearance of what had been a serious disability.

## MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

*Stated Meeting, Held November* 18, 1912.

The President, Dr. Reynold Webb Wilcox, in the Chair.

**A Simplified Ether Inhaler.**—Dr. A. Ernest Gallant presented this. He said it had for its basis the Allis inhaler, which was first modified by himself in 1892, when he replaced the threaded bandage with a diaphragm of gauze on the lower end and inserted a piece of loose gauze within the cavity of the frame upon which the ether was poured. This loose gauze was found to absorb the ether, but did not really give it up for evaporation and warming. (Medical Record, December 30, 1899.) In order to meet the needed requirements the inhaler had been modified and improved by (a) making the ovoid drum without the lateral slits; (b) covering both ends of the drum with gauze drum-heads; (c) lengthening the rubber sheath and adding to the left side of the top a weighted envelope-like flap; (d) placing a cordlike ridge inside the sheath to prevent the drum from sliding down upon the patient's nose. The inhaler was of simple construction, consisting of a drum, which might be made of tin, sheet iron, water pipe, galvanized iron, or even cardboard, moulded into an ovoid, with a rolled edge at top and bottom, and with its ends covered by drum-heads of six thicknesses of sterile absorbent gauze, secured in place by string, stitching, or surgeons' rubber plaster; the drum being inserted within a long rubber sleeve or sheath. The tightly stretched gauze drum-heads were preferred to loose gauze, or any other material, because they offered a larger and more accessible evaporating surface; while the ether, poured in from the top, was rapidly warmed, in passing through the hollow drum, before it entered the respiratory tract of the patient. Thus it was more readily absorbed, and it did not irritate the bronchi and lung tissue, as was too often the case with unwarmed ether; thereby securing freedom from post-operative bronchitis and pneumonia—sequelæ which had never followed the use of this inhaler. The rubber sleeve, which was 6 by 9½ inches in size, had an envelope-like flap at the top, which could be swung back to open the cone when beginning the administration or pouring in fresh ether, and tipped over to the left to close the top when it was deemed advisable to prevent the escape of ether, secure a deeper degree of anesthesia, or raise the temperature of the ether by confining the hot breath of the patient more closely within the inhaler. The flap was furnished with a metal plate to act as a weight and leave the right hand of the etherizer free, but this was not intended to close the top so completely as to deprive the patient of a liberal supply of fresh air, though it prevented the escape of warm ether. The temperature of ether-air inhaled during anesthesia had been found by Joss to average 33° F. below the temperature of the room, and the difference might at times be even as great as 44° F. Having referred to the evils resulting from chilling the air-passages, this author had stated that the problem now was to find some way to counteract the refrigerating action of the ether and warm the air as it was inhaled. This, Dr. Gallant said, he believed had been accomplished by his inhaler, which had stood the test of fourteen years' use in hospital and private practice, and in the hands of many different individuals. For chloroform or ether and chloroform combination inhalation, the quantity of chloroform required was reduced to nearly one-third of that called for by the Esmark or other apparatus, a result which he attributed to the warming of the chloroform. Of course, the top should always be kept open when chloroform was used. Essence of orange, advocated by J. T. Gwathmey for the beginning of anesthesia, could be readily employed with this inhaler, and a few drops of an alcoholic solution of the essence poured on the drum-head was found to disguise completely the odor of ether. When this was used the patient passed into unconsciousness without any preliminary stage of excitement, the anesthesia was easily maintained with less than one-half the quantity of ether required by the usual methods, and, except in very rare instances, the patient quickly and comfortably recovered consciousness without vomiting or nausea. The simplicity of the use of this inhaler could be best appreciated when it was understood that the patient usually took the inhaler in his own hands and administered the ether to himself until his hands relaxed, when the anesthetist took charge of it. The ether could be replenished either by pouring a drachm or two into the open top of the inhaler or by means of the "drop method," which was less safe because the ether could not be brought to as high a temperature before entering the lungs.

**How to Prevent Uric Acid by Phenol.**—Dr. William Henry Porter read this paper. In former papers of his, he said, it had been shown that uric acid was formed normally in the secretory cells lining the uriniferous tubules, and that it was its proteid antecedent only which existed in the blood. Uric acid, as all knew, was one of the normal end-products of the oxidation reduction of the protein molecule and, as such, was one of the essential products carrying nitrogen out of the body. When all the uric acid was transformed into sodium urate and the acid sodium phosphate, as a result of its coming in contact with the neutral sodium phosphate in the lumen of the uriferous tubule, the system was working normally so far as this end-product was concerned, and no free uric acid escaped from the tubules. When, however, this acid was formed in larger amount than could be converted into urates, it was found free in the urine, and then became a pathological product. When thus over-produced, it often massed together, with the formation of large or small calculi. It was not the purpose of the paper to discuss the best mode of combatting the overproduction of uric acid, but to elucidate the method by which phenol prevents the massing together of the uric acid crystals, and thus intercepts the formation of uric acid calculi. Many years ago it became a well established clinical fact that one or two grains of pure phenol, given three times a day, would prevent the formation of such calculi, and also arrest the recurring attacks of renal colic. How this empirical result could be explained upon a logical and scientific basis was long an unsettled problem; but, with our ever increasing knowledge of the chemical mutations which regularly take place in the alimentary canal and urinary channels, it had now become possible to formulate a theory which would fully explain this valuable therapeutic action of phenol. Phenol, in common with many other substances, contained replaceable hydrogen atoms; which circumstance enabled it to unite with basic substances and form carbolates of the same. Under the same laws which had been laid down for the mineral acids, the action of carbolic acid could be sim-

ilarly elucidated. The phenol, when it reached the stomach and intestinal canal, reacted upon the sodium, potassium, and other saline constituents of the foodstuffs in a manner similar to the action of the mineral acids, and formed carbolates of sodium, potassium, etc. The most likely combination was with the sodium compounds, because these were the most abundant. The carbolate thus formed could be absorbed and taken into the bloodstream without precipitating the proteid elements, and in an alkaline menstruum such as the blood and the fluids of the tissues there was no occasion for it to be decomposed, with the liberation of free carbolic acid. In accordance with the law that all inorganic compounds act in the organism alone by virtue of their mechanical presence, it seemed reasonable to assume the same for the "pseudo-organic" class of compounds to which carbolic acid belonged, namely, that the carbolate salts were not decomposed in the blood, and that they were powerful irritants to the system—equal in this respect to most of the poisons of the strictly inorganic substances. While these phenol compounds were not in the strict sense mineral substances, so far as their action, both experimental and clinical, went to prove, they followed the same law of action governing the purely mineral compounds, rather than those governing organic elements. It was a well-known fact that when phenol was taken into the animal organism in considerable quantities the coagulating power of the blood was retarded, and this presumedly was due to the saline form of the carbolates formed in the alimentary canal, since free phenol, when brought in direct contact with the blood, coagulated it. In view of these various observations, it seemed entirely logical to assert that the mechanical presence of the carbolates in the circulating blood can, like that of other known saline compounds, so affect the proteid bodies contained in the blood that the coagulating power of the latter is decreased or altogether arrested. Further, it might be supposed that the presence of the carbolate so changed the metabolism in general, in connection with the abnormal conditions named, that the final product of oxidation tended to become urea, instead of the lower product, uric acid. This, however, could not be the actual method by which the formation of uric acid calculi was so suddenly arrested and the super-acidity of the urine changed to a less intensely acid reaction; for the total quantity of uric acid formed and to be eliminated from the system daily could be reduced only by cutting down the amount of foodstuffs ingested or by increasing the intake and the distribution, throughout the system, of oxygen. The carbolates, after having circulated through the system, passed out of the blood by a process of filtration through the walls of the capillary blood vessels constituting the Malpighian tufts in the kidney in a manner similar to the escape from the blood stream of all the mineral salts. From this point the phenol salts passed down the lumen of the uriniferous tubules until they reached the location at which uric acid was constantly being formed and given off by the excretory epithelium into the tubules. Here they came in contact with the free uric acid, and, the two reacting upon each other, decomposition of the salt ensued, resulting, in the case of the sodium carbolate, in the formation of a somewhat soluble sodium urate and the liberation of carbolic acid. It was this formation of sodium urate which prevented the transmutation of the over-produced uric acid into calculi (thus dispersing the painful symptoms almost as if by magic), and this action of the carbolic acid was rendered possible by the fact that the foodstuffs contained a surplus of sodium compounds which ordinarily remained unabsorbed and passed out of the alimentary canal with the feces. In the natural working of the digestive process the normal sodium phosphate was acted upon by the gastric hydrochloric acid, with the formation of disodium hydrogen phosphate and sodium chloride; but when phenol was administered some of the surplus soda in the foodstuffs in the alimentary canal was acted upon by this agent, with the formation of disodic phosphate and of sodium carbolate, instead of sodium chloride. The carbolates were readily absorbed and passed to the kidneys, where they were promptly decomposed by the uric acid, thus using up the over-production of the latter, and thereby preventing its deposition, as mentioned, in the form of calculi. When the amount of phenol was small, and the elimination effected somewhat slowly, the carbolic odor was not perceptible in the urine, but when the quantity was considerable, this at once became apparent. Furthermore, the presence of phenol in the urine could be detected chemically, and thus the laws of chemistry and physiology furnished a complete explanation for the good clinical results which had so frequently been obtained from the administration of phenol in conditions in which uric acid was being over-produced. This also helped to clear up many of the unexplained phenomena associated with phenol poisoning when the drug was used as a surgical dressing. Ordinarily, in a wound, this agent coagulated the proteid substances with which it came in contact, and thus prevented its own further entrance into the general circulation; but when it was used in large amounts, or remained in quantity for some time in the dependent cavity of a wound, it might unite with the sodium or other mineral compounds in the fluid exudations, and thus render possible its access to the circulation. Now, if carbolates were absorbed and passed to the kidneys more rapidly than they could be eliminated with safety by these organs, they, by virtue of their irritating properties and their consequent ability to disturb proteid transmutations within the body, would cause a disintegration of the red blood corpuscles. As a result, the pigment contained in the hemoglobin was set free, and an acute and often fatal hemoglobinuria produced.

**Infant Feeding in Its Relation to Infant Mortality.**—Dr. Joseph E. Winters made an address on this subject. In this he pointed out the enormous mortality now prevailing in the first months of life, and contended that this could in large measure be prevented if mothers universally could be induced to nurse their infants. That women could, as a rule, be brought to do this had been shown in some of the European schools for midwives. The fact that mothers did not nurse their infants more generally was due to a very large extent to the obstetricians and midwives, and the time had now come when there should be a change in this respect. The act of parturition was only half completed when the child was delivered, and it ought to be realized that it was as essential to the mother as to the child that the latter should be nursed at the breast during the purperium. At the end of utero-gestation the uterus and its blood-vessels were enormously enlarged, and in order that involution should be successfully accomplished it was necessary that the organ should contract powerfully and continuously. This could be secured only by the stimulus afforded by the act of nursing. Every time that the infant took the breast the uterus could be felt to contract firmly, and by this nursing, post-partum hemorrhage could be prevented and perfect involution effected. It could thus be seen that most of the evils, such as uterine displacements, etc., which now make women chronic sufferers and bring them to the gynecologists could be avoided if nursing at the breast were more generally practised. As to the infant, the colostrum was exactly what it required at the time, and the green stools which it often caused were entirely physiological. The vomiting not infrequently observed was really of no consequence. It was a common practice to give the newborn infant water, but this was a mistake, as it made it refuse to take the breast. It should be put to the breast just as soon as the mother had received proper attention, and during the colostrum period it should be allowed to nurse as often and as long as it would. It was not necessary that breast milk should be the exclusive food of the child for a very long period, and as early as the second month it might be allowed one bottle of properly prepared cows' milk with advantage. In this way the mother could have an undisturbed night's repose, and the weaning could be gradually and easily accomplished. As a rule, women nursed their infants for much too long a time. The only substitute for mothers' milk was cows' milk, properly modified. The young infant required a strictly animal food, and proprietary foods were injurious. Physiology was the keynote of infant feeding. The food should be of the composition of the body, and that which he had elaborated from the top half-ounce of cream was based strictly upon physiological principles and was identical with mothers' milk. The protein was flocculent, and would thus pass freely through the extremely narrow orifice of the infant's pylorus.

Dr. Harold Capron Bailey said he had been especially pleased to be asked to discuss Dr. Winters' paper because he felt that the obstetrician should be more closely associated with the pediatrist. The mortality in early infancy was appalling, and we now recognized that the accomplishment of breast feeding was the greatest factor in its reduction. In fact, breast feeding for only a few days was helpful, and every added week of such feeding would reduce the mortality. If a woman could nurse her child but two or three times a day, statistics showed that even this amount of breast milk was of value. It had been recently pointed out that the colostrum conferred immunity to the child for certain diseases the mother had had. Practically every mother could nurse her baby. Contrary to the general opinion, milk constituents were but little affected by the food taken by the mother. The

sugar content was high throughout, and the protein increased in a definite ratio which was undisturbed by a large amount of protein in the diet. The quantity was variable, and many children needed extra feedings from prepared formulae. Midwives, practitioners, and obstetricians were prone to take the baby away from the breast, which furnished a physiological food, and place it on the bottle; food prepared according to chemical formulæ. As to the feasibility of persuading women to nurse their babies, of 300 women delivered at the newly organized School for Midwives in this city, all but one nursed during her stay in the hospital. Between 10 and 15 per cent. of the babies had to have extra feedings because of their failure to gain in weight on the amount of nourishment furnished by the mother. Practically the only indications for feeding from formulae from the start were tuberculosis of the mother and undeveloped breasts with inverted nipples. Eclampsia and breast infections caused temporary undesirability of nursing. As to the advantage of top milk feeding, Dr. Winters' statements were upheld by the work of Schwartz, who found the fat globules surrounded by a periglobular substance similar to casein which prevented the fat globules from flowing together. Pressure broke up this physical combination. Undoubtedly the centrifuge acted in this way. It was estimated that 7 per cent. of the calories provided should be proteid, in order to furnish nitrogen for the building of the body. Nature provided about this amount in breast milk. Any additional protein, even if digested, was not an economical food for the body. Milk sugar, as far as we knew, was chemically the same in human and in cows' milk. In human milk there was a large amount of this substance—between 6 and 7 per cent., and from the beginning to the end of lactation. It would seem highly improper, from a physiological standpoint, to use any other carbohydrate, such as cane sugar, malt sugar, or malt soup. We should remember that the sugar gives the major number of calories in the formulae, and any reduction in the amount of this substance had to be compensated by large amounts of protein and fat.

Dr. Franklin Welker said that from the standpoint of the general practitioner it was questionable whether we paid sufficient attention to the breasts of women during pregnancy. It was the sacred duty of the mother to nurse her child, and it devolved upon her medical attendant to see that she was in every way prepared to carry out this duty. What could be accomplished in this direction had been well shown at the school of midwives in Stuttgart, where the percentage of mothers nursing their infants had been raised from 23 to 100 per cent. It was work of this kind which told in the reduction of infant mortality. There was much to be thankful to Dr. Winters for, for what he had already accomplished; but there was still much to be done. He remembered being much impressed by a monograph by Dr. Winters, published in 1901, in which he stated that an artificial food to be successful must (1) contain all the constituents of mothers' milk; (2) must have the constituents in the same proportion; (3) must contain nothing not found in human milk; (4) must be of animal origin; (5) must be fresh. In other words, cows' milk was the only substitute for the infants' natural food. His personal experience with pure raw milk, modified in accordance with Dr. Winters' directions, had been very gratifying. The success of the method depended largely, however, on the faithfulness with which the mother or nurse carried out its details.

Dr. William Shannon said that for many years he had been familiar with Dr. Winters' work, both at the college and elsewhere, and he could testify to the marked success of his methods, especially in his own hands. Others, perhaps, did not meet with quite the same success, because they did not thoroughly understand his plan of artificial feeding, or did not carry out its details carefully enough, or because they did not give it a sufficiently long trial. We were all agreed as to the great desirability of maternal nursing; but in cases where this was impossible it became necessary to get a substitute for the mother's milk, and cows' milk was recognized as the best food for this purpose. The constituents were not, however, identical in their proportions. There was a marked difference in the proteid content, and here, apparently, was where all the difficulty lay. He had never seen a perfectly well-fed baby which was raised on proteid; a certain amount of fat was essential for the nutrition of the infant. Dr. Winters' formulae certainly approximated mothers' milk more nearly than any others that he knew of. As to the sugar to be employed in artificial feeding, he had personally found malt sugar very satisfactory. While it was true that this form of sugar was not a constituent of human milk, it was a fact that it was met with normally in the intestinal canal, in the blood, and in the liver and other organs.

Dr. William D. Tyrrell said there was but one perfect food for the new-born infant, and that was mothers' milk. Moreover he believed it was practicable to have every mother (or at least 99 per cent. of mothers) nurse her child. Active tuberculosis in the mother was really the only contraindication to nursing. Breast milk contained certain protective bodies which were not to be found in any artificial food, and this constituted one great element of safety. It seemed evident that a marked reduction in infant mortality might be effected if, in the first place, mothers generally could be induced to nurse their children for at least one, two, or three months, and if, second, a proper artificial food were selected in the few cases where this was impracticable. In regard to the amount of fat in such a food, 490 was not excessive, for this was normal. An ample fat content was, indeed, a physiological necessity. This kind of food was a source of energy. Fat entered into the composition of the protoplasm of every living cell, and it was therefore essential for the growth of the body; while, with a high percentage of fat, only a minimum of proteins was required. Excess of both protein and sugar was productive only of evil. Furthermore, excess of fat protected the protein already in the cells. For these reasons, therefore, he knew of no method of artificial feeding which produced such uniformly good results, in such a large percentage of cases, as that of Dr. Winters.

Mr. Lawrence said that Dr. Winters, in his remarks, had condemned pasteurization, and he would like to inquire his reasons for this.

Dr. J. Milton Mabbott said that he was much pleased to hear Dr. Winters speak so strongly of the marked benefit on the mother to be derived from nursing her infant. While on this part of his subject he might perhaps well have gone a little further and referred to the necessity of attention to the nipples during pregnancy, to prepare them for nursing. In many women the nipples were quite unfit for this function, and yet it was entirely feasible, as well as very important, to get them in proper condition by the time the child was born. Some time ago he had published an article on this subject, and all were no doubt familiar with the means for accomplishing the desired purpose. In regard to nursing, therefore, we ought to have in mind four things: (1) The preparation of the nipples; (2) immediate nursing—not waiting for twelve hours, as recommended by some authorities; (3) the withholding of water from the new-born infant. In this particular he had to confess that he had often been guilty of giving one or two teaspoonfuls of boiled water to the baby, but he suspected that Dr. Winters was correct; (4) where a substitute for the mother's milk was required there could be no doubt that the top milk advised by Dr. Winters was by far the best in the earliest days of the infant's life. Many babies would, of course, get along on other artificial foods; but wherever there was a question of the survival of a baby, it should certainly be placed on the best without delay.

Dr. A. C. Palmateer said he would like to ask Dr. Winters four questions: (1) What form of sugar he used, and why: (2) at what time he would advise weaning babies; (3) if vomiting were physiological. Personally he had to confess that he had experienced some trouble from vomiting, and perhaps he had made a mistake in cutting down the periods of nursing; (4) when to introduce cereals into the diet.

Dr. Winters, in closing, said that if Mr. Lawrence would come to his clinic at Cornell Medical College some day he could practically convince him of the evils of pasteurization. There he would see, almost dead, infants which had been fed upon pasteurized milk. When extreme heat was applied to milk, as in condensing it, the product was liable to give rise to the worst form of scurvy-rickets. When the heat was not so great the milk would still cause scurvy-rickets. This was the case with sterilized milk, and some years ago, when sterilization came into vogue generally, there was among infants an immense amount of scurvy, which was almost invariably diagnosed as rheumatism. Sir Thomas Barlow was among the first to describe the condition, and it became known as Barlow's disease. The same was true, in a lesser degree, of pasteurization. Already this autumn he had seen two cases of scurvy from pasteurized milk, and he could not but regard the present widespread predilection for this kind of milk as a positive calamity. No one ever saw a plump and perfectly normal baby which had been fed for a prolonged period on pasteurized milk. At a single clinic he had had no less than four infants with practically no life in them from this cause. As to withholding water from the new-born child, he did not mean to lay this down as an absolute rule; but it was true, as he had said, that the giving of water generally had the effect of making it refuse to take the breast. If

it did not have the water it would be compelled to nurse. The sugar he employed was that which nature furnished, milk sugar. In his opinion there was no excuse for using malt sugar or malt soup, or, indeed, any malt preparation. It was not physiological, and physiology should be our only guide. As to the vomiting of infants, a great deal of it was due to excessive handling of the child, and as soon as this was discontinued the vomiting would cease. For the young infant he avoided all cereals absolutely, as unphysiological. As he had just said, he had but one guide in his feeding. Why should we give vegetable foodstuffs when there were no secretions which would digest them? In this matter he took his ground from the standard textbooks on physiology in this country and Europe, and therefore when certain men asserted that they had found that the young infant was capable of digesting cereal food, he did not believe them. No such statement could be found in any established work. In reply to a question from the president, Dr. Wilcox, Dr. Winters said that the top milk used varied according to the age of the baby. The method he employed had during a course of years been most carefully worked out, both practically and in the laboratory. He had tested it thoroughly in his work, and then his results had been confirmed by a series of laboratory experiments by such men as Dr. Lederle, Dr. Adriance, and Prof. Sherman. He could, therefore, speak with some confidence as to the pronounced success which had been obtained. On the other hand, neglect to consider the physical behavior of protein had led to grave errors and an immense amount of trouble in infant feeding.

## NEW YORK ACADEMY OF MEDICINE.

### SECTION ON MEDICINE.

*Stated Meeting, Held November 19, 1912.*

Dr. W. L. Niles in the Chair.

**Demonstration of Sahli's Latest Modification of the Pocket Sphygmobolometer.**—Dr. Nathaniel Bowditch Potts exhibited this instrument which was the latest modification of the one described in the last edition of his textbook, "Diagnostic Methods," English translation, second edition, page 180. The instrument now upon the market was very compact, easily applied, and convenient for clinical use. The purpose of this instrument was to obtain a measurement of the work accomplished by the individual pulse wave expressed in gram centimeters. Sahli explained that this instrument measured a dynamic force; it had no relationship to the estimation of the blood pressure which was a static conception. Dr. Potter then showed the increase of work by an individual's pulse before and after climbing a series of stairs.

Mr. Severinghaus, Department of Physics of Columbia University, discussed the principles upon which this instrument was based.

**A Case of Extreme Dilatation of the Esophagus.**—Dr. Theodore C. Janeway reported the case of a woman, forty years of age, who was admitted to the hospital April 10, 1912, and discharged April 15. She had always been healthy until her present trouble arose. She weighed about 140 pounds; her habits of eating were very irregular and about ten years ago she began to have distress immediately after eating and the feeling of a lump that would not pass on. At times she would put her finger down her throat and occasion a vomit for her relief. Occasionally she would have a week free from distress. Five years ago she took soda for the relief of her distress and with apparent success. One year ago she began to vomit more and she noticed in the vomites food that had been eaten the preceding day: there was an increase in her distress. For three months she had eaten only milk, eggs and gruels; the attempt to eat meat precipitated acute distress and vomiting. For two months she had vomited foul smelling material, but never any blood. For three weeks she had been vomiting even milk and eggs. She was constipated and had great thirst. On admission to the hospital she was extremely emaciated and weighed only 77 pounds. Her temperature, pulse and respiration were normal and blood pressure from 115 to 80 m.m. In the right interscapular region there was some relative dulness and an enfeeblement of the respiratory murmur. There were no peristaltic movements seen and some tenderness in the left epigastric region. Both kidneys were palpable. Examination of the rectum revealed some nodular masses which were hard and tender. There was a very obstinate edema of the legs. The urinary examination was negative and the examination of the blood and the stomach contents after test breakfasts led them to suspect carcinoma of the stomach. At operation the stomach was found to be absolutely normal; the gall-bladder, duodenum, pancreas, and the kidneys were normal. The colon was prolapsed and the appendix slightly nodular. The latter was removed and the examination showed that it was in process of obliteration. The patient nearly died after the operation of an indefinite pneumonic infection, but finally recovered and returned two weeks later to the medical service still vomiting constantly and emaciated to a living skeleton. Finally a complete examination was made to find if an esophageal dilatation or diverticulum might be present. Introducing the stomach tube about one-half its length several hundred cubic centimeters of fluid with food particles gushed up and the flow was accelerated by coughing and not by vomiting efforts. After washing out the esophagus completely 500 c.c. could be introduced and removed. On its introduction, gurgling sounds could be heard to the right of the sternum and when full dulness was evident here which disappeared when the esophagus was empty. At no time could the tube be made to pass the cardia, and the vomiting was evidently from a greatly dilated esophagus with stricture at the cardiac orifice. This diagnosis was confirmed by a bismuth radiograph which showed an enormous cylindrical dilatation of the esophagus, with bulbous enlargement to the lower end. Esophagoscopy a few days later showed extreme narrowing at the lower end of the esophagus, through which it was impossible to pass any catheter. Finally the patient was persuaded to submit to a gastrostomy. She weighed 74 pounds at this time. Two days after the operation feedings were begun; milk and lactose diluted with water were given every hour. The amount of food was gradually increased, beef juice, eggs, gruels, whiskey being added successively. The operation was performed in May and in September the patient weighed 125 pounds. Nothing was given by the mouth. In October a thread was successfully passed into the esophagus from the stomach. Dilatation by catheter from below, using the thread as a guide, had been carried on since and a bougie one cubic centimeter in diameter could now be passed. No food had yet been swallowed successfully through the cardia, but food introduced into the stomach at times passed up into the esophagus and was recovered in the lavage. This patient's weight had now remained stationary for a month at 123 pounds.

**A Case of Chronic Lung Abscess Cured by Artificial Pneumothorax.**—Dr. David Bovaird, Jr., reported the case of a carpenter, aged thirty-nine, who was admitted to the hospital May 27, 1912. In August the patient was suddenly taken with severe sharp pain in the right side. He went home and to bed. The next day he had chills, fever, and a severe cough which raised a moderate amount of white sputum. The pain in the side remained for ten days and then grew better, but the cough grew worse. He only expectorated a moderate amount. He remained about the house for about three months and did not believe he had any fever after the first month. At the end of this time (three months) he went to work, but did not feel strong. His cough kept up and was pretty constant. He spit up moderate amounts during the day, but most was raised during the night. When he laid down he would start coughing. At last he raised very large amounts of very foul material. His chief complaint was the severe headache, the severe cough, and the expectoration of the foul material. The diagnosis of chronic lung abscess was made and nitrogen injections were given on October 22 and 29, and November 7 and 16, 1912. The patient was discharged improved September 21, and was readmitted on October 16. The result in this case was all that could be asked for.

**Bence Jones Protein in Urine.**—Dr. Selma Grant made this demonstration.

**An Unusual Case of Oral Sepsis.**—Dr. Francis P. Kinnicutt reported this case. He said that during the past several years he had had the opportunity of observing several cases of oral sepsis. The symptoms in the form of local discomfort were often insignificant and the local signs seemed inadequate to explain the systemic disturbance. The obvious local signs might be no more than dental caries of one or several teeth, a contiguous gingivitis, and not infrequently a diffuse pyorrhea alveolaris of varying intensity. Many slight disturbances of health, as well as grave systemic disturbances, might be traced to oral sepsis. The case reported was that of Dr. G. W., 56 years of age. In August, 1911, he developed what was supposed to be a case of grippe in which both antra were said to be involved. At the end of two weeks the patient was up and doing his work, but did not feel well; he thought he had a little fever and night sweats. Two

months later he had a sharp chill and a stepladder rise in temperature to 104° F. The temperature then fell suddenly and remained normal for two weeks. From this time there was continuous fever of the remittent type, the daily range being 99° in the morning to 103° F. in the afternoon. There were associated general neuralgic pains, slight epistaxis, frequent slight chills, occasional sharp ones, frequent night sweats, and marked loss of weight (twenty pounds). The liver gradually enlarged and was finally palpable five centimeters below the costal arch. The spleen was also easily palpable considerably below the costal arch. It was thought that he had typhoid fever, though the Widal test was negative. A very careful examination of the patient in the eighth week of his illness was entirely negative beyond showing the hepatic and splenic enlargements referred to. Finally examination of the mouth revealed very considerable dental caries, a moderate amount of gingivitis, and a diffuse pyorrhea alveolaris. The teeth and gums were cleaned, the bacterial deposits removed, and two markedly carious teeth extracted. A slight improvement followed, but was not maintained. A second careful physical examination by Dr. Walter B. James was likewise negative, revealing no other signs than those described. The oral origin of the systemic symptoms was reaffirmed and fifteen teeth were extracted. Five days later the temperature became normal, and, except for a slight rise for two or three days accompanying prolonged and painful oral treatments, a rapid subsidence of all constitutional symptoms occurred. There was an equally rapid disappearance of the hepatic and splenic enlargements. Dr. Kinnicutt expressed himself as firmly convinced that a certain proportion of cases of so-called pernicious anemia were in reality cases of septic anemia of oral origin.

**The Pulse Deficit in Auricular Fibrillation.**—Dr. T. Stuart Hart said that on account of the complete irregularity of the ventricular action in auricular fibrillation and the consequent variations in intervals, force, and volume of the pulse wave the following points were of clinical importance: (1) The examination of the radial pulse alone was not a safe guide to the condition of the patient or the results of therapeutic procedures. (2) Valuable data might be obtained by counting the apex beats by the auscultatory method and comparing this with the pulse rate as obtained by palpation of the radial. They had named this difference the *"Pulse Deficit."* In grave cardiac insufficiency of auricular fibrillation the *"Pulse Deficit"* might be 50 or 60. Under successful treatment the rate of the heart was slowed and the "Pulse Deficit" was reduced or disappears. This was a better guide to the dosage of digitalis than that of the production of nausea and vomiting or the appearance of the coupled rhythm. (3) The usual method of estimating the systolic blood pressure, by noting the highest brachial pressure at which a pulse wave below the point of compression could be detected, was entirely fallacious in cases of auricular fibrillation on account of the ever varying presence of the successive pulse beats. (4) They had devised a method of estimating approximately the true systolic blood pressure of the individual with auricular fibrillation. By means of a cuff on the brachial artery the pressure was raised to a point where the most forcible beats could be detected at the wrist; the number of these beats was counted for one minute; the pressure was then lowered in stages of 10 mm. each (counting each stage for one minute) until the same number of pulse waves reached the wrist as could be obtained without any brachial pressure. The average pressure was then estimated by multiplying the several pressures by the number of beats reaching the wrist at the several pressures, adding together and dividing by the heart beats per minute as detected by auscultation of the apex. The resultant figure they had termed the *"Average Systolic Blood Pressure."* Working in this way they had been able to demonstrate the increase in blood pressure with the improvement of the patient and to show, contrary to the statement of Mackenzie, that digitalis really did increase the blood pressure in auricular fibrillation.

**Typhoid Vaccination.**—Dr. Albert Lamb read this paper and said that one year ago last May began the work of vaccinating the nurses at the Presbyterian Hospital against typhoid fever. Before starting the work the back records were investigated in order to find out how frequent the disease had been. Covering a period of twenty years beginning with 1892, the year the training school was started, it was found that there had been fifty-two cases of the disease among the nurses, doctors and orderlies. Only those cases were included where there was a definite history of recent exposure to typhoid while caring for patients. Thus there was an average of between two and three cases of preventable typhoid a year (2.6 per cent.). There were four deaths or 7.64 per cent. Since beginning the inoculations there had been in training at the hospital 113 nurses. Of these ten had had typhoid, one had had the vaccination and two had other sickness which made it inadvisable to proceed with the inoculations. Thus there were 100 eligible nurses and of these 76 per cent. have been inoculated. In the four classes the percentage of vaccinated nurses gradually rose from 61 per cent. in the first class to 100 per cent. in the last class. Since the work was started there had been no cases of typhoid among the nurses, but in the past there had been similar periods of similar length in which they were free from the disease. In addition to the nurses, vaccination was carried out on other people so that the present results were based on 150 cases. At the start only two doses of the vaccine were given, 400,000,000 and 600,000,000. This applied to only the first eighteen. After that the regular army dosage of 500,000,000 and 1,000,000,000, was given at ten days' intervals. Widal tests were taken on these cases at about ten days after the last inoculation in fifteen instances. In none was the Widal negative in dilutions of less than 1-100. In nearly all it was positive as high as 1-400, and in one case it was positive at 1-12,000. The reaction was done by the microscopic method. In seventy-two cases the effect on menstruation was especially noted. In 55 per cent. it was affected and in 45 per cent. it was not. In a fairly large proportion of those affected there was only a slight delay or a little earlier appearance of the flow in people who had previously shown no irregularity. In a few the reaction was more marked. Thus in one case the first menstruation succeeding the vaccination came on a week early and lasted for eight days, the next one lasted nineteen days. Then it resumed its regular course. One patient skipped two months. Given shortly before the time for the flow, the vaccine was quite apt to bring it on at once and to cause a severe reaction. There was no difference noted in the effect of different vaccine. Part of that used was kindly supplied to the hospital by Major Russell of the army. The rest were made at the hospital. Special attention was called to the fact that the vaccination should not be undertaken without going into the patient's history and assuring oneself that the patient was perfectly well at the time. For almost everything in the way of illness for some time after the inoculation was laid to the vaccine. Aside from this it was most important in view of the tendency to light up a chronic condition. In two of his cases it brought on attacks of tachycardia in patients who had previously had similar trouble. In one case a chronic appendicitis was apparently made more troublesome, requiring an operation after several months. In several cases tonsillitis developed a day or two after inoculation. The danger of lighting up a chronic quiescent tuberculosis, chronic joint trouble, chronic urethritis, etc., was well known. At the present time he was giving the vaccine in gradually increasing doses from 400,000,000 to 500,000,000 for the first dose, 700,000,000 to 800,000,000 for the second and 1,000,000,000 for the third. There was rather less reaction than when one gave the 1,000,000,000 for the second and third doses. It was also very satisfactory to follow the method of Spooner in Boston. He gave smaller doses at five-day intervals. With a limited experience with children he was of the impression that they rarely had any reaction to speak of.

**A Series of Cases of Staphylococcus Aureus Sepsis.**—Dr. Willard B. Soper presented this communication. The series consisted of forty cases collected from the records of Roosevelt Hospital, St. Luke's Hospital, and the Presbyterian Hospital. All showed the staphylococcus aureus and only the unquestionable cases were included in the report. There were twenty-nine deaths, eleven recoveries, and eight autopsies. In his summary of the lesions diagnosed clinically and at autopsy he gave the following: Osteomyelitis, 16 cases; pneumonia, 12 cases; suppurative arthritis, 10 cases; suppurative nephritis, 6 cases; cellulitis, 10 cases; carbuncle, 6 cases; abscess of the lungs, 5 cases; suppurative myocarditis, 4 cases; suppurative meningitis, 3 cases; splenic infarctions, 3 cases; parotiditis, 3 cases; acute vegetative endocarditis, 2 cases; thrombosis, 2 cases; brain abscess, 1 case; abscess of spleen, 2 cases; perinephritic abscess, 2 cases. With regard to the course of the disease, of the twenty-nine deaths 20 or 69 per cent. showed a duration of fifteen days or less. The recoveries required from six weeks to six months. With regard to the treatment of these cases of staphylococcus aureus sepsis there seemed to be a fulminant type which was the most common and in which any form of treatment was unavailing. With the other type of cases in which the infection was not so severe, the outcome would seem to depend on the ability of the surgeon to evacuate the pus from the seat of infection.

### Philadelphia Neurological Society.

At a stated meeting held October 25 Dr. Charles W. Burr presented a communication entitled "Paralysis Agitans in Negros," and he exhibited an illustrative case. He related that in his experience this was the first case of the disease in a negro that had come under his observation, and inquiry disclosed that this also was the experience of other physicians. The patient was a man, about 42 years old, whose preceding history could not be obtained. He presented characteristic fixity of countenance, marked festinating gait, with propulsion, slowness of movement, and partial flexion of the fingers, but with a total absence of the distinctive tremor. Dr. Burr pointed out that functional diseases of the nervous system are in general less common in negros than in whites.

Dr. Alfred Gordon reported "Two Cases of Myatonia Congenita" and he exhibited one of the patients. He pointed out that in some of the cases reported no changes were discovered in the nervous system, but only changes in the affected muscles, while in others chromatolysis of nerve-cells was present. The clinical picture comprises flaccid paralysis, more or less widely distributed, with quantitative reduction in electrical reactions, and without sensory changes. In the case of the colored child presented a positive Wassermann reaction was obtained, and intensive treatment with iodides resulted in marked ibprovement.

Dr. Francis X. Dercum exhibited "A Case of Hemiplegia with Unusual Symptoms." The patient was a man, 31 years old, who fell in walking on a gangplank from a boat to the landing, striking the back of his head. Thereafter he complained of some discomfort in the head, and a week later became unconscious. On returning to his senses the right side of the body was paralyzed and aphasia was present. In a short while the upper and lower extremities on the paralyzed side exhibited marked wasting, with abolition of the reflexes and preservation of sensibility.

Dr. N. Maxwell Langdon reported "A Case of Traumatic Bilateral Paralysis of the Facial Nerves, with Complete Loss of Power in the Upper Branches and But Little in the Lower." The patient was a man whose head was caught between the floor of a descending elevator and the landing. A fracture of the lower jaw resulted, and blood escaped from the nose, mouth, and ears, indicating a fracture at the base of the skull. The upper eyelids could not be depressed, the lower lids hung in folds, the forehead and brow could not be moved, and there was weakness in the lower part of the face. Hearing was impaired on both sides, as was also the sense of smell, and likewise the sense of taste on the anterior third of the tongue. The ocular muscles and movements were unaffected. There was a small area of anesthesia in the malar region on each side of the face. The conditions were attributed to injury of the affected nerves in connection with the fracture at the base of the skull.

Dr. T. H. Weisenburg exhibited a "Boy with Epilepsy in Whom There Occur Periodic Attacks of Hemiplegia." The patient was 16 years old and he gave a history of facial erysipelas at the age of four months. Subsequently, he had a number of attacks of epilepsy, and seizures have occurred since at long intervals, the last about two years ago. From time to time there occur attacks of transient hemiplegia involving one or the other side of the body, sometimes both sides, with exaggeration of reflexes, including extension of the great toe. The condition is supposed to be due to vascular derangement representing a form of intermittent cerebral claudication.

Drs. Chas. K. Mills and William B. Cadwalader presented a communication entitled "Pituitary and Unicigate Symptoms and Lesions," reporting a group of seven cases of this character, and demonstrating two of them. Of the latter one occurred in a man, about 35 years old, who had grown rapidly up to the age of 16 years and had put on a considerable layer of adipose tissue. The other occurred in a man, 30 years old, who was spare and pallid and rather short in stature, with a doubtful tuberculous lesion at the apex of one lung. Both complained of impairment of vision and examination disclosed the existence of bilateral temporal hemianopsia.

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**Epilepsy in Infancy.**—L. Marchand calls attention to the occurrence during infancy of convulsions without any apparent cause, and without prodromi, which are not accompanied by any other morbid manifestations, and which do not seem to affect the general health. In these cases which are of an epileptic nature there are probably present cortical lesions which may have begun during intrauterine life.—*Gazette des Hopitaux.*

## Books Received.

*The* Medical Record *is pleased to receive all new publications which may be sent to it, and on acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Stuttering and Lisping. By E. W. Scripture, Ph.D., M.D. 251 pages; illustrated; cloth; price $1.50 net. The Macmillan Company, Publishers, New York.

Life: Its Nature, Origin and Maintenance. By E. A. Schäfer, LL.D., D.Sc., M.D., F.R.S. 36 pages; cloth; price 50c. net. Longmans, Green & Co., Publishers, New York.

Diseases of the Liver, Gall-Bladder and Bile-Ducts. By Humphry Davy Rolleston, M.A., M.D., F.R.C.P. 811 pages; illustrated; cloth; price $9.00 net. The Macmillan Company, Publishers, New York.

Food in Health and Disease. By Nathan S. Davis, Jr., A.M., M.D. Second Edition. 449 pages; cloth; price $3.50 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

The Practice of Obstetrics. By J. Clifton Edgar. Fourth Edition. 1,062 pages; illustrated; cloth; price $6.00 net. Blakiston's Son & Co., Publishers, Philadelphia.

Ophthalmic Surgery. By Dr. Josef Meller. Second Edition. 289 pages; illustrated; cloth; price $3.50 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

Year Book of the Pilcher Hospital. For the Period from April 1, 1911, to March 31, 1912. 197 pages; illustrated; cloth.

A Practical Medical Dictionary. By Thomas Lathrop Stedman, A.M., M.D. Second Revised Edition. 1208 pages; illustrated; leather; price $4.50 net, indexed $5.00 net. William Wood & Company, Publishers, New York.

Organization, Powers, and Duties of Health Authorities. By J. W. Kerr and A. A. Moll. 452 pages; paper. Treasury Department, United States Public Health Service, Publishers, Washington.

Entwicklung und Gegenwärtiger Stand der Immunitätsforschung in Amerika. By J. G. Fitzgerald. Ferdinand Enke, Publisher, Stuttgart.

Die Anwendungsweise der Lokalanästhesie in der Chirurgie. By Prof. Dr. Fritz Hohmeier. 81 pages; illustrated; paper; price 4 M. August Hirschwald, Publisher, Berlin.

Travaux de Chirurgie. By Henri Hartmann. 472 pages; illustrated; paper; price 15 francs. G. Steinheil, Publisher, Paris.

The "Wellcome" Photographic Exposure Record and Diary 1913. Burroughs Wellcome & Company, Publishers, New York.

The Science of Hygiene. By Walter C. C. Pakes, D.P.H., F.I.C. 164 pages; illustrated; cloth; price $1.75 net. D. Van Nostrand Company, Publishers, New York.

Diagnose und Therapie der Syphilide. No. 2. By Dr. S. Jessner. 144 pages; paper; price 1.25 M. Curt Kabitzsch, Publisher, Wurzburg.

The Practice of Dentistry. By Leo Greenbaum, M.D., DD.S., and Max Greenbaum, DD.S. 836 pages; illustrated; cloth. D. Appleton & Company, Publishers, New York.

Gynäkologisches Vademekum. By Prof. Dr. A. Duhrssen. Tenth Edition. 306 pages; illustrated; cloth; price 6.80 M. S. Karger, Publisher, Berlin.

Manual of Medicine. By A. S. Woodwark, M.D., M.R.C.P. 409 pages; cloth; Oxford University Press, Publishers, New York.

Guide to Midwifery. By David Berry Hart, M.D., F.R.C.P.E. 765 pages; illustrated; cloth; price $6.00. Rebman Company, Publishers, New York.

Surgery and Diseases of the Mouth and Jaws. By Vilray Papin Blair, A.M., M.D. 637 pages, with 384 illustrations; cloth; price $5.00. C. V. Mosby Co., Publishers, St. Louis.

Verhandlungen des Vereins Deutscher Laryngologen. 1912. By Prof. Dr. Rich Hoffmann-Dresden. 845 pages; paper; price 5.50 M. Curt Kabitzsch, Publisher, Wurzburg.

Serum Diagnosis of Syphilis and Luetin Reaction. By Hideyo Noguchi, M.D., M.Sc. Third Edition. 306 pages; illustrated; cloth; price $3.00. J. B. Lippincott Company, Publishers, Philadelphia.

Gouverneur Hospital, New York, Tuberculosis Clinic. Report of the Clinic from its Establishment, October 30, 1903 to October 31, 1910. 148 pages; illustrated; paper. Gouverneur Hospital, Publishers, New York.

## Therapeutic Hints.

**Subcutaneous Injections of Sodium Iodide.**—M. J.-L. Champion states that a small dose of sodium iodide injected into the cellular or muscular tissue is quickly absorbed and does not cause any pain. It produces certain interesting therapeutic effects, acting both as a sedative and as an antispasmodic. The author injects 0.02 gram of the drug dissolved in 2 c.c. of water, sterilization being effected by heat. The salt used should be pure and desiccated; the crystalline salt is apt to irritate. Good results have followed the local use of this drug in intercostal neuralgia, sciatica, lumbago, headaches, the pleurodynia of pneumonia, the pain associated with abscess formation, and in iritis and phlebitis. The administration of this drug is indicated as a primary measure in rheumatism. The author has also demonstrated its value in vertigo, in various forms of dyspnea, in edema of the lung, and in angina pectoris. The action of the drug in all of these cases either is immediate or may be delayed for several hours. Sodium iodide is a vasodilator and to this must be attributed its analgesic and antispasmodic actions.—*La Presse Médicale.*

**Therapeutic Value of Colloidal Rhodium.**—Pechère has obtained good results from the use of colloidal rhodium in various infectious processes in children. This drug was resorted to because of the minuteness of its particles. It was injected intravenously when possible, or, in the case of young children, intramuscularly, in doses of one-half a cubic centimeter, containing .2 milligram of the drug. The chief action of the drug was to cause a fall in the temperature.—*La Policlinique.*

**Formalin in the Treatment of Tuberculosis of the Upper Air Passages.**—H. Bourgeois has employed in this condition the mixture recommended by Morestin. It consists of equal parts of formalin, glycerin, and alcohol. A few drops of this mixture are injected into the tuberculous granulations. This method of treatment is also of value in the cauterization of the granulations of chronic otitis media.—*Progrès Médical.*

**Treatment of Subacute Bronchitis.**—Grasset recommends the following to be administered in pill form, four or five times a day:

℞ Codeine, 0.01 gram.
Terpene hydrate, 0.20 gram.
—*Gazette des Hôpitaux.*

**Postanesthetic Vomiting.**—E. Chauvin and N. Æconomos find that the administration of the following potion serves to prevent the onset of postanesthetic vomiting:

℞ Glucose, 150 grams.
Tincture of nux vomica, 0.50 c.c.
Tincture of canella, 3 c.c.
Water, sufficient to make 300 c.c.
—*La Presse Médicale.*

**Treatment of Diarrhea.**—E. Fuld believes that many cases of diarrhea are to be attributed to an increased irritability of the stomach. The contact of food with the gastric mucosa reflexly excites intestinal peristalsis. He recommends for the purpose of diminishing this excessive irritability of the gastric mucosa the following mixture:

℞ Cocaine hydrochloride,
Codeine Phosphate, of each, 3 grams.
Peppermint water, 100 c.c.

Of this solution the dose for adults is 10 drops ten minutes before meals.—*La Semaine Médicale.*

## Miscellany.

**Doctor Johnson and the Doctors.**—"Dr. Johnson," says Boswell, writing under date 1784, the year of Johnson's death, "had in general a peculiar pleasure in the company of physicians," and this was certainly not abated when he took tea at Oxford in the company of Dr. Wall, a "learned, ingenious, and pleasing gentleman." It was on this occasion that the great moralist prophesied, in some sort, the necessity for research into the diseases of the East and of warm climates. He fell foul of the Radcliffe Traveling Fellowship, and averred that the Fellows had done very little good. "I know nothing that has been imported by them; yet many additions to our medical knowledge might be got in foreign countries." And he cited inoculation as having saved more lives than war destroys, and the unnumbered cures performed by Peruvian bark. "I would send the Radcliffe Fellows," he cried, "out of Christendom; I'd send them among barbarous nations." Johnson's kindness to poor old Dr. Robert Levett, his pensioner, is, of course, famous, and equally so are the lines he wrote on the doctor's death at the age of 80 in 1782. Goldsmith, also a physician, was among his intimates, and the chaff bestowed on his new plum-colored coat has become immortal. The coat, terribly worn and threadbare, is now in the London Museum, and suggests the pathetic supposition that the spendthrift poet-physician wore it till it was almost unpresentable. At the time of Goldsmith's death in 1774 Johnson wrote, "Of poor dear Dr. Goldsmith there is little to be told." Goldsmith probably owed £2,000, not less, and this preyed on his mind and heightened a fever, which he further complicated by an excessive use of James' powders. Referring to the debt Johnson humorously asks: "Was ever poet so trusted before?" Later, writing to Bennet Langton, he says, "Let not his frailties be remembered; he was a very great man." If Goldsmith by his over-medication hastened his own death, Johnson by dint of amateur surgery did likewise. Shortly before his death he inflicted such wounds upon himself, in the hope of obtaining relief, as to suggest the idea of suicide. He used a pair of scissors in an endeavor to void the water of dropsy. Johnson's last words were many. To the faithful Langton he said tenderly: "Te teneam moriens deficiente manu." Of his man nurse he said, with a flash of the old humor: "Sir, the fellow's an idiot; he's as awkward as a turnspit when first put into the wheel, and as sleepy as a dormouse." His last recorded words were to a young lady who had asked for his blessing: "God bless you, my dear."—*Lancet*, December 21, 1912.

**The Daily Routine of Ambrose Paré.**—J. G. Mumford says Paré "rose at four in the morning and went at once to his surgery, where he read and wrote until six; then he breakfasted on milk and dry bread. At six-thirty he began the reception of patients, who thronged to him until eleven o'clock, when he dined. After dinner he slept for a half hour, when he started forth on his rounds, on foot or horseback—surgeons had no carriages in those days. Often he visited the Hôtel Dieu, where he operated and taught and where he wrote over the door: 'I dress the wound; God heals it.' He supped wherever chance found him—in some humble shop, at the hospital, the Louvre, rarely with his wife at home; then to his studies again, or to see more patients, and at last to bed, at midnight or long after." —"A Doctor's Table Talk."

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## Original Articles.

### SOME PROBLEMS OF NURSING: A PLEA FOR GRADING.*

By HENRY DWIGHT CHAPIN, M.D.,

NEW YORK.

One of the greatest advances made in the successful treatment of the sick and injured was accomplished when the regular instruction and training of high grade nurses was inaugurated by the hospitals as part of their regular service to the profession and to the public. Probably very few in actual practise to-day realize the full benefits of this movement as they have had no experience of what preceded it. Too often, the records tell us, the nursing of the sick was relegated to ignorant, slovenly, and haphazard women who were more noted for loquacity and assurance than for skill. When these failed or could not be procured, the members of the family were obliged to lend a hand although fatigued and worried by lack of experience in attempting to minister to those near and dear to them. They were also without a certain authority to carry out necessary measures that often are best undertaken by an outsider. By inaugurating a new, useful and dignified profession, which could fill the needed gap between physician and patient, the required advance was accomplished.

Sufficient time has now elapsed in this beneficent movement to inquire if it has attained its widest usefulness, and, if not, how the work of the hospitals may be broadened out to reach a wider social service than has yet been attempted. The writer believes this can be done by a differentiation or grading of nurses, as every practising physician knows that a wide field has never been properly covered by the nursing profession as now in operation. The reason for this is obvious—lack of means.

While the advances in modern, scientific medicine have been prodigious, the necessary expenses attending such service to the sick have likewise increased, but the incomes of the masses have not correspondingly advanced. Great hardship has followed to many worthy people. Physicians are constantly seeing severe cases of illness inadequately nursed owing to lack of money.

With the increase of expense due to necessary scientific examinations and laboratory tests, the nursing has likewise increased in elaboration and costliness. This is satisfactory enough in a well-equipped hospital, but what of the homes of even relative or comparative poverty? It sometimes seems as if the millionaire or the pauper were the only ones to be assured of modern, scientific treatment. This is a grave condition for many practising physicians to meet.

*Read before the New York Academy of Medicine, Dec. 19, 1912.

On the nursing side, the trained nurse has practically the field to herself. Fortunately for the public, she has driven out the old-fashioned nurse and no one has regularly taken the place of the latter. It is now frequently a trained nurse or nothing. In the face of this problem, the training of the regular nurses has been elaborated, the time of study and service enlarged, and the cost of their services correspondingly increased. It seems to be the popular cry at present to raise the standard in everything. We may well inquire whether this is always an unmixed blessing. As far as nursing is concerned, I would both raise and lower the standards. This would involve a change in some of the methods of training in order to make the output of the schools more varied and elastic and thus more responsive to every day public needs.

As at present constituted, some of the instruction given to the average nurse is needless and much hard labor is exacted that is not particularly valuable as far as training is concerned. We neither want semi-doctors nor mere drudges to depend on in average nursing. It seems to me that the best solution of this question, both for the nurses and the varying public they must serve, is to establish three distinct grades of students at the training schools. Let some of the student nurses be trained as broadly and highly as possible, but widen the field and usefulness of the training schools by introducing lower grades.

As a tentative proposition, let us divide the students into three classes, included in Grades I, II, III.

*Grade I.*—This should consist of well educated, cultured women, with a course of at least three years before graduation. In the absence of a college degree, or equivalent education, a preliminary and thorough examination should prove their fitness for advanced instruction. While practical training should not be neglected, much of the ordinary drudge work could well be omitted. While the idea of making pseudo-doctors is not desirable, they should be thoroughly instructed in the elements of anatomy, physiology, and the natural history of diseases. This would enable them to become expert in waching, and, to a certain extent, interpreting the significance of symptoms as they may arise at the bedside. Here is where many nurses fail. Even if a proper attempt has been made to teach them these things in the training school, they are physically and mentally too tired to grasp and remember them after a long, hard day of work in the wards. By saving this grade from much of the routine drudgery, their minds would retain the necessary knowledge. A careful instruction in history taking and recording—and in good, crisp, legible English—need not be neglected. A thorough course in hygiene and the ideas and methods of preventive medicine could likewise be included in the course. Domestic economics and scientific housekeeping, on

a large and small scale, should be thoroughly taught to this class. The nutritive value, varied utility, and, to a certain extent, the chemistry of foods, would be highly desirable. This would also include the purchase and proper preservation of foods in large or small quantities, fit either for the home or institution. Proper tests for recognizing pure, unadulterated food stuffs and scientific cooking in all its branches would be included in the course of instruction.

The economics of institutional work in its varying phases should also be carefully studied. Such a training would enable one to preside over the complicated routine of an institution, oversee a social settlement, or nurse the most complicated and difficult case in a private family. The social poise developed by such an education would be at home alike in the most elaborate mansion or in the more restricted surroundings of those in poorer circumstances who occasionally need such services. It is usually the most cultivated who can readily adapt themselves to diverse surroundings.

A rigid examination should be successfully passed before the candidate would be given the diploma of this highest grade. A distinct dress and badge might be the outward sign of having attained the grade. If a student cannot pass the necessary tests, both as to character and attainments, she could be dropped to the next lower grade where the requirements would not be so severe. A special title could also be given, perhaps some such title as Registered Special Nurse might do.

*Grade II.* The requirements for entering this grade would be an average education such as is reached in the ordinary high school. The time of study would be two years, but in the last few months of the course the pupil nurse would be sent out on private cases in order to become familiar with the conditions of household nursing. This was formerly done in some of the training schools and had a distinct educative and helpful value. Hospital nursing and that done in the home, often with restricted appliances, may be very different in character. Some nurses, who do very well in the hospital, fail to make as great a success in private practice, and more effort should be made to teach them to adopt themselves to the varying circumstances they are sure to meet in practise. A certain tact and sense in dealing with human nature under diverse and frequently trying conditions are essential to success.

While the theory and practise of nursing should be adequately covered, the course need not be so rigid as in Grade I. Some of the repeated manual work now required could be omitted and this would give more time and strength for the skilful exercise of their powers. Both of the upper grades of nurses should be instructed in the elementary teachings of bacteriology so as to fit them to understand and apply the principles of sepsis and antisepsis, especially as related to surgical operations and dressings. An examination should be required before graduation to see that the candidate understands the principles that have been taught, but the record of work actually done in the wards should count very largely in the final estimate. Upon graduation the usual title of Trained Nurse would be employed and she would occupy the field now given over to this class.

*Grade III.* Here is where a more radical change is advised. It will aim to open up a broad and necessary field that will, on one side, give employment to a large class of worthy women, and, on the other, supply an equally large class who need their services. We hear much of small wages, uncertain work and hard conditions of labor on the part of working women. Let us open a new field of opportunity to this class by training large numbers of them to be practical nurses. These women could be sure of useful work at a moderate wage, but larger than the shops and factories can offer. A very large number of cases of illness require nothing more than this class could easily furnish if they had a little discipline and training. Such a course can best be given by taking part in the practical, routine work of a hospital for a comparatively short time.

A candidate should be strong physically and have a simple education, such as is given in the ordinary grammar grades in our public schools. While doing a fair share of the drudgery of the ward, she can still assist and see the necessary manipulations required in actually handling the sick and injured. One year of such service and instruction in the wards of a well-regulated hospital would turn out nurses capable of taking care of a great majority of the ordinary cases of illness that are met in actual practise. They would be vastly superior to the output of the various haphazard methods of supplying a certain kind of nurses. They would also be valuable in many cases where second nurses or assistants are required in difficult cases. They could be called Trained Attendants, but they would be very different from the class now generally known by that name. The latter have usually attended a few lectures, but have had no regular, systematic hospital training. This is a grade that needs enlarging and developing so as to fill a wide and useful field. At present not only have most of them had inadequate training, but they are subject to no proper oversight. If they were recognized as an integral part of the hospital trainng, they would have a regular status on graduation. By registration, with some oversight, they would then take their place in the same way as the graduates of the higher grades with a consequent professional standing and responsibility.

There will doubtless be objections in trying a combination in one school of women possessing a different standing and education. Each grade, however, could have separate quarters and need not mingle if they do not so desire. The true dignity and value of their work should be impressed upon all the grades—each feeling that they are in preparation for a career that, in spite of its limitations, cannot well be excelled in usefulness if it is entered into with the proper spirit.

The plea of this paper is to so broaden out the field of instruction in nursing as to reach all classes equally and adequately, and not simply have a profession that, as now organized, can really only serve the well-to-do. The superintendent who can practically carry out such an ideal will deserve to stand with Florence Nightingale as a benefactor of the race.

Thoughtful statesmen and publicists all over the world are trying to study out and remedy the high cost of living to those upon whom it bears hardest. Let physicians and nurses lend a hand in trying to reduce the high cost of sickness to those who can least afford to suffer under such misfortune.

51 West Fifty-first Street.

# RADIUM AND THORIUM-X THERAPY.*

By DR. CARL VON NOORDEN,

DIRECTOR OF THE FIRST MEDICAL CLINIC IN VIENNA.

The discovery of the radioactive elements and their properties has overturned the views of the structure of matter, which we have held for more than one hundred years. New forces have been discovered which slumber in the molecules and are given off outwardly according to definite laws. Hardly had science established the most important facts than we learned that the newly discovered forces also influence biologic processes. Naturally it was not long—perhaps we should say in retrospect all too short—before therapeutics sought to avail itself of the new forces.

*Physics.*—The most important chemicophysical property of radioactive elements is that while giving off a so-called radiation they are disintegrated into new elements with smaller atomic weights. Thus far we have become acquainted with three kinds of rays, which differ among themselves completely in their nature. The so-called Alpha-rays are helium atoms charged with positive electricity. The so-called Beta-rays are electrons, that is, the smallest units of negative electricity. The so-called Gamma-rays are not material particles. We interpret them as an electromagnetic vibration in the ether, related to light. They cannot be shown to carry an electric charge.

The three kinds of rays are given off from the individual radioactive substances in different admixture, but from each individual substance in entire accordance with fundamental laws. Of great significance is the velocity with which the disintegration takes place. As a measurement for them there has been chosen the so-called half "value interval," that is, the time which elapses until a certain quantity of a radioactive body, while giving off the characteristic radiation, has been transformed half way into the next following element. These intervals vary greatly, and on that account important viewpoints for therapeutic applicability of the individual preparations result.

I will not go into details about the half value intervals. The size of the single values is to be seen from two accompanying tables. The products of the uranium-radium series and those of the thorium series are conspicuously enumerated. I will return to these tables later, as certain figures therein have practical significance for the physician.

TABLE OF HALF VALUE INTERVALS.

URANIUM-RADIUM SERIES

| *Element* | *Rays* | *Half-lifetime* |
|---|---|---|
| Uranium | $\alpha$ | 5,500 million years |
| Uran-X | $\beta$-$\gamma$ | 24.6 days |
| Uran-Y | $\beta$ | 1.5 days |
| Tonium | $\alpha$ | 200,000 years |
| Radium | $\alpha$, $\beta$ | 1,760 years |
| Radium-Emanation | $\alpha$ | 3.85 days |
| Radium A | $\alpha$ | 3.0 minutes |
| Radium B | $\beta$, $\gamma$ | 26.2 minutes |
| Radium C | $\alpha$, $\beta$, $\gamma$ | 19.5 minutes |
| Radium D | $\beta$ | 16.5 years |
| Radium E | $\beta$ | 5 days |
| Radium F (=Potassium) | $\alpha$ | 136 days |
| Lead (?) | | |

THORIUM SERIES

| *Element* | *Rays* | *Half-lifetime* |
|---|---|---|
| Thorium | $\alpha$ | 1,000 million years |
| Mesothorium 1 | (?) | 5.5 years |
| Mesothorium 2 | $\beta$, $\gamma$ | 6.2 hours |
| Radiothor | $\alpha$ | 2 years |
| Thorium-X | $\alpha$, $\beta$ | 3.65 days |
| Emanation | $\alpha$ | 53 seconds |
| Thorium A | $\alpha$ | 0.14 seconds |
| Thorium B | $\beta$ | 10.6 hours |
| Thorium C | $\alpha$, $\beta$ | 60.5 minutes |
| Thorium D | $\beta$, $\gamma$ | 3.1 minutes |

*Read before the New York Academy of Medicine, October 29, 1912.

The radioactive bodies are, as already said, carriers of energy. That which we make use of biologically is living force set free in the instant of disintegration. It is expressed in development of heat, in electricity, in chemical transformations. For example, water is decomposed by the Alpha-rays and the oxygen of the air is ozonized. In order to give an idea of the amount of energy generated let it be mentioned that one c.cm. oxyhydrogen-gas develops on explosion two gramcalories. One c.cm. of radium emanation in its complete disintegration develops, on the other hand, about twenty millions of calories, that is, about ten million times as much. By far the greatest amount of the total energy accompanies the Alpha-ray. The manifold action of radioactive substances upon the organism depends upon that development of energy. The radioactive substances act while they disintegrate, or, one may perhaps say, in the instant of their explosion; for the process which takes place in the individual molecule of radioactive substance is in fact an explosive one. This consideration causes us to reflect upon what happens when we introduce a radioactive substance into the body and when this substance is distributed by means of the blood in all the tissues and cells. We permeate the body with molecules which have a tendency, after a certain time, determined by their peculiar nature, to explode. They hurl thereby, in their immediate environment, an amount of energy gigantic in proportion to their mass. Like the water molecule, other inorganic and organic molecules and cell constituents may be dissociated and it should not cause wonder that many vital expressions of the cells become thereby essentially modified. Until now we have only quite imperfect knowledge of the alterations of the biochemical processes which are accomplished under the influence of radiant energy. The affinity of individual tissues and tissue cells for radioactive substances is certainly not everywhere the same; just as alkaloids, metals and metalloids, immune bodies, etc., anchor themselves by preference to definite cell groups and with definite chemical substances of the body, while other cells do not take them up. We have already attempted to demonstrate such an elective anchoring of radioactive substances in the body. The results thus far are, however, not definite. For the time we may only derive the elective anchoring through analogies which will explain to us why radioactive substances seem to work much more strongly on certain organs than on others. The most powerful force which becomes active through the explosions of radioactive molecules is electricity. Thus, now, radioactive substances give us a method of distributing the carriers of electrical energy into the interior of the body and there engage the fluids, the protoplasm, and the cell nuclei in the immediate bombardment of electrical atom explosions. We can therefore designate internal therapy with radioactive substances as an internal electrotherapy.

*Methods of Application and Their Value.*—After these prefatory remarks on physics, we must first occupy ourselves with the practical applicability of the various radioactive substances. I remark that in the following paragraphs I will only go into such questions and points as are important for internal medicine. The application of radium in dermatology

and surgery I will not consider, for I have had no personal experience here.

Hitherto few among the radioactive substances have attained importance for internal use. We must demand from a utilizable preparation:

1. It must be agreeable in its application, that is, without hardship to the patient. Properly dosed it should have no injurious collateral action.

2. The velocity of disintegration should not transgress certain superior and inferior limits. Such substances show themselves most utilizable whose half value intervals amount to several days. This applies only to radium emanation and thorium-X.

3. Irrespective of what substance we choose, we must be sure of the dosage. We must know exactly how much energy we allow to act on the body. In this regard many justified complaints have become current; for the preparations to be found on the market and which are accessible to physicians, are in part dosed very inaccurately. We measure the acting force of the preparations according to electrostatic units. Since, however, the use of electrostatic units gives too small figures, the number found is, as a rule, multiplied by 1,000; one obtains then the so-called Mache-unit. One thousand Mache-units make one electrostatic unit.

4. The preparation should be reasonable in price. That for the time being, intolerable conditions still prevail on the radium market, appears from a work carried out by G. Mossler, at the request of the Austrian government. He found truly fabulous differences in price for the same amount of energy. For example, in seven different bath preparations the price per each 1,000 Maché units varied from about 2½ cents up to about $125. In the potable preparations and in the radium compresses, the differences in price are smaller, but still very considerable. Many bath preparations are so dear that it would be cheaper to take a full bath in French champagne than to arrange a bath by these preparations, which would have perhaps half the strength of a Gastein bath. With the cheapest preparations, on the other hand, one attains the full strength of a Gastein bath for about $1.

Under the pre-supposition of careful and conscientious preparation the following radioactive substances have thus far proved themselves the best: A. Radium emanation. B. Radium and its salts, partly in solid form, partly in solutions. C. Solutions of Thorium-X.

### RADIUM EMANATION.

Emanation is a gas which follows all the laws of gases. Two gases proceed therefore from metallic radium and its salts: the now constant helium and the spontaneously disintegrating emanation. As especially noteworthy it is to be mentioned that by further disintegration emanation is changed back again into a solid substance. Under a continuous radiation are formed from emanation in rapid sequence, one after another, a series of solid bodies, to which one has given the names radium A, B, C, and D, and which are endowed with the collective name of "active precipitate." In radium D we encounter a substance, which disintegrates very slowly. Radium D seems to be somewhat indifferent for the organism.

*Baths.*—Emanation is by far the oldest form for therapeutic application of radioactive substance. Long before we knew anything of the existence of radioactive elements, we utilized for medicinal purposes baths, that are rich in emanation and we hailed their therapeutic accomplishments without knowing upon what they rested. I give here a tabular survey of a few springs, whose healing power, celebrated of old, we must bring at least partly in connection with their emanation content.

A full bath (200 liters) contains of Maché units:

| | | | |
|---|---|---|---|
| Landeck (Tirol) | ca. 40,000 | Münster a. Stein | 4,680 |
| Gastein | ca. 30,000 | Pistyan | 4,680 |
| Baden-Baden | 25,000 | Kudowa | 4,500 |
| Kreuznach | 11,200 | Soden im Taumus | 4,400 |
| Nauheim | 5,720 | Nenndorf | 4,000 |

To these must be added the extremely strong baths of Joachimsthal in Bohemia. The "Radium-Kurhaus," that place fitted out with all the accessories of modern technique, guarantees a content of 120,000 Maché units in a full bath.

When Neusser by introduction of pitchblend residues in a common bath gave to this the strength of a Gastein Grabenbäcker Spring Bath (about 30,000 M.U.) and saw therefrom a favorable influence upon chronic rheumatic processes, he had taken the first step in the application of artificial radioactive baths and especially to the intentional application of radioactivity in internal medicine. The residues which remain in the manufacture of uranium colors contain a mixture of all the radioactive substances in the uranium series; that which is given off in the leaching water is essentially emanation. When in Joachimsthal the abundantly present residues are leached in closed tanks, one may obtain surely inexhaustible quantities of bath water probably still more strongly saturated with emanation than the water now in use, as the so-called "residues" are much richer in radium than the original ore. One will adopt this simple and cheap process when the subterranean water which flushes the uranium ores no longer suffices to cover the rapidly increasing demand.

It has been disputed that in the use of bath, rich in emanation, any notable amount of the latter or its radiation reaches the interior of the body. It has been said the skin refuses entrance to the gas and but few of the rays penetrate it; only the gas which, according to the well known laws of gases, diffuses from the water into the air above and is then inhaled, exerts any action. According to more recent investigations, however, the emanation seems to penetrate the skin better than was at first thought. Nevertheless, in Joachimsthal they have arranged by the erection of specially high tubs, that the heavy emanation gas more fully remains in the respiratory air of the bather.

We must come to an agreement as to which baths shall rightly be recognized as radium baths. I believe that we should recognize certain groups as follows: (1) Strongly radioactive springs—100 M.U. and upwards in one liter of water; (2) Radioactive springs of medium strength—50 to 100 M.U.; (3) Weakly radioactive springs—20 to 50 M.U.

Where the emanation content of the water is still smaller than 20 M. U. in a liter, one should no longer term it a radioactive spring. Nevertheless it should be mentioned that individual health resorts, for example, Teplitz-Schönau, have ingeniously succeeded by the aid of their weakly radioactive water (maximum 8.7 M.U. per liter) in reinforcing strongly their inhalation chambers with emanation.

*Inhalation* represents the second form of application of emanation. The principle is very simple. In a closed space the walls of which are made as

air-tight as possible, is distributed the emanation. A ventilator assures the uniformity of the distribution. The air is obtained in a respirable form through the introduction of oxygen (from bombs of compressed oxygen).

Carbonic acid and aqueous vapor are removed by special absorption apparatus. As a very suitable one and capable of manifold application, I must designate also the portable emanation chamber. This is a tent of rubber cloth, which can be set up in a few minutes over any bed, and prevents the entrance of the external air. We have often allowed patients with severe joint troubles, who could not be transported, to inhale thus for many hours in succession, and believe we have to attribute much success to this continuous action.

The treatment in the emanatorium had its beginning, as is well known, in Berlin, founded on the experiments which were carried out in His's clinic. Now there are emanatoria in all large cities, in all health resorts, and in most of the smaller cities; but some of these deserve the reproach that their inhalation chambers are provided with much too small amounts of emanation, and that the results depend more upon the suggestive influence of the chamber than on the content of emanation. Nevertheless I must agree with His and his pupils that in single, specially sensitive individuals—especially in subacute articular rheumatism—typical reactions are obtained with air-mixtures of from 4 to 8 M.U. per liter, and that it is unsuitable then to apply stronger mixtures. These, however, are only exceptions, and I believe that, by reason of our very extensive experiences, I may say in advance, that about 25 M.U. per liter is the least amount required for which an actual practicable emanatorium should be arranged. We ourselves did not stop short at this quantity. In the preceding year I published in common with my assistant, Dr. W. Falta, a communication in which we reported on the application of very large amounts of emanation. At that time the maximum was 675 M.U. in a liter. In the meantime we have gone as high as 1,200 M.U. This happened, however, only while studying the influence of very large doses. I think that for therapeutical purposes one does not need to exceed 500 M.U. per liter.

When the physician refers a patient to an emanatorium he should know exactly what the dosage of the latter is. Therefore we should, just as in the case of the baths, unite upon a certain conventional gauge for the emanatoria. The following scale seems appropriate to me: Weak emanatoria: 8-12 M.U. guaranteed per liter of air; medium, 12-25 units per liter; strong, more than 25 units per liter.

Inhalation chambers which guarantee less than 8 M.U. in a liter of air, should not possess the right to call themselves emanatoria.

At present the great expense stands in the way of the erection of powerful emanatoria; aside from a few, which are subsidized by the State, really powerful emanatoria do not yet exist. My clinic belongs to those fitted out through State aid. It may be of interest to mention that the market value of the emanation used by us per diem reckoned at its lowest price amounts to $100 to $200.

By far the greater part of the emanatoria in operation maintain themselves at the lower limit. As far as I know only in the Joachimsthal Radium Kurhaus are the average charges up to the superior limit of the first category, and in the future, through the projected improvements, these can be strengthened to perhaps 15 to 20 M.U. a liter of air without essentially adding to the expense. There, however, the conditions for obtaining cheap emanation are specially favorable.

Of the weak emanatoria it is objected that for the high charge but little emanation is incorporated and brought into action. In fact the quantity is not large and the action is limited to the time of the sojourn of the patient in the chamber. Already after a few quarter-hours the last of the emanation has been given off, principally through the expired air, and further, the entire amount of the so-called "active precipitate" formed meanwhile in the body has gone over into nearly inactive radium D. It is also held against the emanatoria that it is not advisable to shut in the patient for several hours a day in the relatively narrow space, in which indeed he is well taken care of as far as the introduction of oxygen and absorption of carbonic acid go, but by prolonged use an essential deterioration of the air is unavoidable in these chambers. These are important objections and we therefore welcome the already constructed portable apparatuses suitable for individual use. Nevertheless the system of all these apparatuses is still very susceptible of improvement. I believe we shall soon see the construction of such relatively cheap emanation inhaling apparatuses in great perfection. One will then be able to supply a mixture of any desired strength, beginning with small doses and gradually rising to larger ones.

*Drinking.*—The third form of application of emanation is the drinking cure. This mode of application is especially suitable when one wishes to act upon the stomach, intestine, or liver. I would like to mention here that we have obtained by means of the drinking cure some excellent results in abnormal irritable states of the stomach, in simple hyperesthesia of the stomach, in hiccough, in morning vomiting, and hyperemesis. Daily doses 1,000 to 2,000 M.U. served as a rule. That is indeed very little in view of the rapid elimination of the emanation. The total action must be notably smaller than that even of the weakest emanatoria. We have used as a rule, for the daily dose, 20,000 M.U. and often very much more, and I believe I must credit to these large doses the fact that my final judgment of the drink cure is strongly favorable.

*Compresses.*—The action of the so-called "radium compresses" is to be referred partly to emanation, partly to direct radiation. One uses them especially in subacute and chronic rheumatic arthritis, also in neuralgia. From the moistened compresses some emanation doubtless penetrates the skin, and enters the neighboring tissues and general circulation. Radioactive pillows, compresses, etc., which give out really abundant emanation, are so extremely dear that they are applicable only to the smallest extent. We obtained such strongly acting pillows for experimental purposes, which the Neu-Lengbacher Radium Works placed at our disposal; and I also saw such pillows in use at the Joachimsthal Radium Sanatorium. The results appeared to me very satisfactory. When one does not have at one's disposal specially strong preparations of radium the application of a radium bag as well as that of the radium metal and of the undissolved salts should be limited essentially to those cases where the action is meant for the most superficial layers. This is of interest rather for dermatology and surgery than for internal medicine.

*Subcutaneous Injections of Radium Salts.*—Emanation is used only exceptionally for injection. The action in this form of application is too transitory. On the other hand the injection of weak radium solutions (bromide or chloride) belongs to the earlier forms of application, and recently, as it seems to me with right, has gained new ground. Radium itself is eliminated but slowly. We establish by repeated injection, in a measured interval of time, a radium deposit in the body from which continually emanation and electric energy are given off. As a rule one applies phials of one c.cm. capacity, which contain enough radium in aqueous solution to provide an emanation which, in radioactive equilibrium, corresponds to a value of 1,000 M.U., that is 1/6000 mgr. of radium metal (0.00017 mgr.). According to our own experience it does not appear very intelligible that with such minimal quantities therapeutic activity is obtainable. We believe that even for the acquisition of local action manyfold the above mentioned dose must be injected. Local action comes especially in question in chronic rheumatic affections of the joints. One injects the radium solution in the vicinity of the joint. But if one will obtain general action, if one will make use of the strong influence of radium injections upon the erythrocytes and leucocytes very large doses are required. My assistant, Dr. Falta, who with tireless industry most laboriously studied the action of radium in my clinic, found (in common with O. Brill, E. Freund, and L. Zehner) that in animals the action upon the composition of the blood only begins when in a single dose about 1/200 to 1/100 mgr. of radium is injected per kilo of body weight. Disturbing collateral action which could make the injections dangerous was not seen. For a body weight reckoned at 70 kilos the amount of radium used would therefore amount to from 1/3 to 2/3 of a mgr. With such very large doses no experiments have yet been made. More accurate statements as to the actual indication for radium injection and the size of the appropriate dose are needed. We are still in the experimental stage. In any case one must go far beyond the extremely minute doses with which we were first contented. We also need a much better guarantee than before that in the purchasable ampullæ as much radium is really contained as is claimed. As a whole, I believe that the prospects of radium injection therapy are very great, though it would be premature to assert that these injections are of extreme therapeutic efficacy, and just as much so, and this has already happened—to make of them a new therapeutic specialty. This can lead to only wrong paths.

THORIUM.

In the thorium series we also find a gas, thorium-emanation, which is interposed in a long series of elements of the solid state of aggregation. Thorium-emanation is, however, not useful for our purposes. It disintegrates too rapidly. It disintegrates more rapidly than one can breathe it in, in the radiation and in the nonvolatile active precipitate.

Of the other bodies of the thorium series *mesothorium-2* was the first to be selected. One used it for injections, but mesothorium-2 has also the disadvantage of an all too brief duration, and to obtain it in pure form and to use it also presents certain technical difficulties; further, as soon as it is decomposed an element is formed therefrom (radiothorium) which, on account of its very slow disintegration, must be designated as indifferent.

Medical interest has rightfully been applied almost exclusively to thorium-X. This is a solid substance with a half value interval of 87.5 hours. It belongs chemically to the alkaline earths, forming salts which are easily soluble. Itself very rich in rays, it has elements in its train which all decompose pretty rapidly. Thorium-X is eliminated only very slowly, so that a large portion—perhaps the greater part of the injected molecule—undergoes all its phases in the body itself, until there is reached a last product which is no longer radioactive, and the nature of which is for the time being still unknown. There are, therefore, at least five electrical explosions of every individual thorium-X molecule accomplished in the body. The great utilization of the individual molecule and the fact that it can be precisely dosed, make thorium-X a very strong competitor of radium emanation, in which the dosage is always somewhat uncertain, and at best controllable only with extreme difficulty. From what has been known hitherto, the biochemical activities of the radium series and the thorium series are of the same quality. Solutions of thorium-X have been used by subcutaneous injection, and also as drink cures. In principle both appear to be equivalent; the results are practically the same, what differences there are being comparable to those observed in giving morphine subcutaneously or by the mouth. One must learn which mode of application is most advantageous under the existing circumstance.

In administration by the mouth we have seen, when large doses were frequently repeated (from 300,000 to 500,000 M. U.), slight gastrointestinal disturbances, especially loss of appetite and slight nausea, but no other disadvantageous consequences. Drink cures with smaller doses, say 50,000 to 100,000 M. U. are, doubtless, well borne by the digestive canal. Some prefer the intravenous injection to the subcutaneous. There does not seem to be any noticeable difference. As appears from the communications from my clinic there is, after subcutaneous injections for the next four days, only about 28 per cent. of the injected amount of thorium excreted by the feces and urine. The greater part therefore remains up to the complete cessation of radioactivity within the body. It is interesting that thorium, as well as the common alkalin earths, is eliminated for the most part by the bowel and for much the lesser part by the kidney.

As will be remembered, the first clinically important communications upon the therapeutic applicability of thorium-X were published at exactly the same time and independently of each other from my clinic and from that of F. Kraus by W. Falta and Plesch respectively. They found valuable and instructive supplement in the simultaneous investigations of A. Bickel in animal experiments. The enormous sensitiveness of the bood, as well as of the blood-forming apparatus toward medium and even small doses of thorium-X promptly appeared. This holds for the leucocyte as well as for the erythrocyte system. The discovery led naturally forthwith to therapeutic researches in leukemia and in pernicious anemia. The communications concerning the experiments and results made to this year's Congress of Internal Medicine caused a justifiable sensation. They exceeded all hitherto known of the action of radioactive substances on the blood. Even the strongest radium injections previously applied were far behind, and still greater was the difference in comparison with the action

of radium emanation. Unfortunately in the beginning the forces and energy, innate in thorium-X, were underestimated. In the more daring procedures a fatality occurred. The unfavorable termination was caused by severe hemorrhagic diathesis. This very lamentable accident warns us certainly to caution, but we should not be frightened away from further completion of thorium-X therapy. In a very large number of injections we have had, in my clinic, no ill results and also the more recent communications of A. Bickel, H. Hirschfeld, and G. Klemperer—which only confirm those from my clinic and that of Kraus' as reported to the Wiesbaden Congress and support them with new examples—there is nothing which could frighten us from further testing thorium-X. Naturally it is a two-edged sword like any poison. It is only a practicable and profitable weapon when it is *correctly* dosed. The time seems to me not yet arrived, when we can recommend thorium-X for general practice. We are in the experimental stage with it even more than with the radium emanation therapy. The emanation therapy suffered because in the beginning the doses were probably too small. In thorium-X treatment the opposite condition was present. Even the Röntgen treatment of blood diseases had a thorny path to overcome. Certainly there have been more accidents in this field than have become known. My belief is that thorium-X treatment will eventually prove very valuable, although as yet it is inferior to Röntgen treatment and to the radium emanation treatment. The possibility of very exact dosage, the rapidity of the action, the convenient form of application, and, not least, the relative cheapness of thorium preparations, are the basis for this opinion.

### BIOLOGICO-THERAPEUTIC VIEWPOINTS.

We now turn to the enumeration of the biological activities of radioactive substances as far as these are important for treatment.

A. *Calorie Metabolism.*—Emanation in many persons increases the respiratory interchange of gases. The subjects of the experiments were left daily for two hours in the emanatorium with doses of 119 to 440 M. U. for each liter of air; the increase of the basic metabolism amounted to as much as 27 per cent. This is a result which hitherto could be obtained through thyroid feeding only. The researches have in prospect that we can use with advantage radioactive substances for the treatment of certain forms of obesity (endogenous obesity). It is probable, however, that thorium-X is better suited for this purpose than radium emanation, because therewith one can bring the organism more readily under the continued action of radiation. On the other hand the researches teach us that radium and thorium should be avoided in severe diabetes, in Basedow's disease, and in febrile affections, for in these diseases there exists already an unwelcome augmentation of metabolism.

B. *Metabolism of Albumin.*—In most of the cases thus far investigated there has been found a certain increase of the metabolism of albumin, a determination which may be made useful for the therapy of true gout and many phenomena of old age.

C. *Carbohydrate Metabolism.*—During the action of emanation the respiratory quotient increases, often indeed very notably. This indicates that carbohydrates are mobilized and oxidized in increased quantities. It does not follow, however, that radioactive therapy should be applied in diabetes mellitus, for in diabetes we have rather the duty of restricting the production of sugar, while for stimulation of sugar-oxidation no reason is present. We would probably, by radioactive therapy, excite the production of sugar instead of retarding it. Researches on diabetes justify our scruples. The excretion of sugar for the most part increases, especially in severe cases. The acetonuria also increases, probably on account of the impoverishment of the liver in glycogen.

D. *Purin Metabolism.*—Very noteworthy are the changes in purin metabolism. As the first researches of Gudzent and Löwenthal showed, emanation therapy favors in a high degree the excretion of uric acid. Small doses even suffice to demonstrate this influence. In large doses we saw the uric acid increase by more than 100 per cent. The same influence belongs, as was to be foreseen, to thorium-X and here also thorium-X may in time prove itself to be the more efficacious and the more convenient stuff.

At the present time we do not know whether the increase in the uric acid excretion rests exclusively on a facilitation of the latter or, simultaneously, upon an increased production. The latter, however, is very probable, in view of the great amounts of uric acid which in a few days amount to a larger quantity than could have been stored up in the body of a healthy person. In these changes of purin metabolism the influence of radioactivity upon the energy of fermentative processes should probably have asserted itself. On the other hand, processes in the leucocyte apparatus should also play a notable rôle. This will be considered later.

It naturally followed by reason of these determinations to apply radium therapy to uric acid gout, and Gudzent succeeded in showing that even weak emanation mixtures essentially contribute to purify the blood of uric acid. It is, indeed, difficult to determine whether in the cases reported by Gudzent the disappearance of uric acid from the blood is alone to be set down to the credit of emanation, for in all cases other proved therapeutic measures, especially feeding with purin-poor diet, have also been applied. The results of blood analysis are very interesting and important from the theoretic standpoint. From the practical standpoint, however, I must say that the significance of quantitative uric acid determinations in the blood have of late been strongly overestimated. We should not make the uric acid content of the blood a measure for the safety or danger of the gouty subject. The blood analysis has especially a diagnostic value; if one investigates for uric acid the blood of a subject with normal kidneys, who has for a long time taken a diet rich in purin bodies, the result—it is true—will not absolutely guarantee that we have to do with a gouty patient, but will give us a very valuable hold on the case. This determination is especially important in gouty myalgia and neuralgia, which often precede for a long time the typical gouty attack.

Moreover, I really doubt whether the methods of uric acid determination in the blood now in use give trustworthy results.

It is probably not unnecessary to note that experience—thus far—does not encourage us to apply radioactive therapy in so-called renal gout, that is, in uric-acid concretions. The increased determination of uric acid to the kidneys constitutes indeed a contraindication. Moreover, we have several times seen hemorrhages in the kidneys attending the ema-

nation treatment of renal lithiasis. This may be a coincidence. However, I mention it.

As to what now concerns the results actually reached in gout, I would like to express myself with reserve. Many are filled with enthusiasm, while others have criticized the results loudly. From the scanty gout material in my university clinic and from the somewhat more extensive gout material in the private clinic I learn that, before all, the pains in the chronic atypic forms of gout, including the neuralgias are very favorably influenced; and that even chronic joint swellings are in this form of gout notably diminished in size. In most cases medium amounts of emanation and above all very strong drinking cures were applied. On the other hand, I have not observed any influence on quiescent tophi. As in the case of articular rheumatism, it often happens that at first the pain and swelling increase. This is, however, a good prognostic sign for a favorable result of the treatment.

My verdict is less favorable, so far as my personal experience extends, in regard to an influence over typical gout, occurring in acute attacks. Upon the attacks themselves radioactive therapy had no curative influence. The attacks pursued even a more severe course than before. The prophylactic action was also slight.

It seems to me that patients will have to persist with the dietetic treatment of gout as the principal factor in the therapy of that disease and will at the same time, be able to greet the favorable influence of radioactive treatment upon the tormenting pain as an essential and welcome auxiliary.

As to how far in future the difficult emanation treatment can be replaced by drink and injection cures with thorium-X the future must teach. In principle both methods act in the same sense, but one is not yet in position to estimate the superiority of one over the other.

E. *Influence Upon the Blood.*—1. Erythrocytic anemia.—Under the influences of large amounts of emanation and moderate amounts of radium salts injected subcutaneously, and above all after injections of small quantities of thorium-X there occurs in healthy human beings and animals *hyperglobulia*, which persists for weeks and may last far beyond the time of treatment. The action of the emanation in this respect is much weaker than that of the radium salts and of the thorium. In persons who work much with radium in bulk or in solutions we see the same phenomena.

Upon the other hand, radioactive substances are also dangerous to the red corpuscles. This is a matter of quantity. It occurs just the same in the case of radioactive substances as that of other medicaments that we have known for ages, such as arsenic. Small doses stimulate, large ones retard formation of blood. Especially dangerous are the radioactive substances, when there exists a previous lowering of resistance of the red blood corpuscles. For example, in a case of Banti's disease, where we had shown such a lowering of resistance, the red corpuscles under the influence of thorium-X were reduced in a few days from 3.2 millions to 1.8 millions. I may recall also the Berlin mishaps in which death set in with the development of a strong hemorrhagic diathesis. On the other hand, the marked influence on the blood and the erythrocytic apparatus justifies the application of thorium-X in pernicious anemia. The number of observations is still too small to permit of a final judgment. One must also remember that rapidly favorable changes often occur unexpectedly and spontaneously. I described these rapid changes long ago when I was assistant at Gerhardt's Clinic under the name of "blood crises." Although naturally failures were not missing, experience thus far justifies us in fair hopes. However, one must be extremely careful and only feel one's way. After what we have seen, one should first restrict the treatment to cases in which the blood picture shows that the power of regeneration of the bone-marrow has not yet been exhausted to the utmost. Cases in which no longer normoblasts pass into the blood appear to be unsuited for treatment. In every case one should previously prove the capacity for resistance of the erythrocytes.

The Leucocyte Apparatus, Leukemia.—With the leucocytes the case is similar to that of the red cells. We should first, indeed, call attention to the fact that small and even medium doses of radium emanation have, as a rule, no influence whatever on the total number of leucocytes. In large doses of emanation we almost always see a certain degree of hyperleucocytosis. The number of leucocytes can increase twofold and upwards and this alteration of blood persists for a long time. Thorium-X in small doses exerts the same influence as large quantities of emanation.

As in the case of the erythrocytes the effect is reversed as soon as we further increase the doses. Leucopenia then develops. In order to reach this condition with emanation, it is indeed necessary to give doses of such size as never come in consideration in therapeutics. The dose of thorium-X, however, which can cause a marked destruction of the leucocytes is very low. It lies closely above the value, which excites the increase of leucocytes. We often see at first an increase, followed promptly by a marked decrease. In animal experiments we often saw leucocytes disappear entirely from the blood. Autopsy showed a high degree of destruction of the pulp of the spleen and a disappearance of the adenoid tissues; further a high degree of degeneration in the adrenals and in the entire chromaffin system, besides hemorrhages in the colon. Despite the dangers which threaten from lack of caution in dosage, medical art is able to utilize this quality of thorium-X. The thought of testing it in leukemia lay near. This was done in the spring of this year, simultaneously at my clinic and the Kraus clinic. As far as I can judge of the results myself, the continuation of the therapeutic studies strengthened essentially the hopes, which we expressed at the Congress of Internal Medicine for these methods of treatment. In beginning cases of leukemia, where an already marked enlargement of the spleen has existed, but the number of leucocytes has not exceeded one-half million, the thorium-X treatment has thus far not left us in the lurch. It seems that the results appear more promptly and are more permanent than with Röntgen treatment. We have in any case to state to our great satisfaction that our armamentarium against leukemia has become enriched with a powerful weapon. Naturally, however, thorium-X is no universal remedy for that disease. That processes, which have advanced very far, can be bettered or cured, is thoroughly improbble. Already there have been such failures and we, too, have seen them in far advanced cases. This, however, should not discourage us. The same thing occurs in all chronic diseases the solution must lie in: *principiis obsta.*

As you have seen, the therapeutical application

of radioactive substances, for the stimulation of the total metabolism of the obese, for combating uratic gout, for the improvement and possible cure of severe anemia and leukemia has been brought into the best harmony with what we know of the general biological action of these substances. Even in the healthy results occur which point the way to the therapy.

*Other Activities.*—The therapeutic application of radioactivity to internal medicine is, however, not yet exhausted. We have in the meantime learned of remedial activities, which cannot yet be explained by theory, or, at least, only very imperfectly.

Rheumatic Troubles.—In the first place we should mention the influence on rheumatic processes. By far the most patients, that in the course of the last two years have thronged the emanatoria for supposed gout, were not actually sufferers from uric acid diathesis, but from a subacute or chronic nonuratic arthritis; especially from arthrosis deformans. I say intentionally "arthrosis" and not "arthritis," for in my opinion this disease is due to disturbances of the internal secretion, which causes trophic and degenerative changes of the joint so that inflammation, that is arthritis, synovitis, myositis, osteitis are only secondarily added. The confusion between the rare gouty and the much more common nongouty affections of the joints, especially arthrosis deformans, is the rule with the public: but physicians often commit the same error, and, indeed, very much to the disadvantage of the patients, because the wrong diagnosis of gout very often leads to rigorous dietetic measures, which in the long run weaken the patients extremely.

This confusion has had the good effect of leading the rheumatic subjects to radioactive therapy, upon which it appeared that these patients, while not indeed regularly, but in a surprising number of cases, obtained great benefit from this treatment. The results extended to a lessening and removal of the pain, to retrogression of effusions and synovial swellings, to restoration of locomotive power. As a rule there first appears an inflammatory reaction, and it is just these cases which apparently become worse at the outset that promise the best results later. In some cases weak emanatoria suffice, but I must emphasize the fact that we did not become convinced of the great importance of radioactive therapy of chronic nongouty joint affections until we strengthened the emanation essentially. In passing to 25 M.U. per liter of air, the results were already notably more favorable than with the small doses of 4 to 8 M.U. per liter. The results further improved and were in many cases quite astonishing when we went as high as 200 to 500 M.U. in a liter. The good results were distributed quite irregularly among the different forms of subchronic and chronic nongouty affections of the joints. They included also, to some extent, cases of acute articular rheumatism and the residues of the same. I might indeed say that it was in these very cases in which an acute articular rheumatism had been essentially cured—while still leaving behind pains and thickenings of the soft part in individual joints—which showed the most satisfactory results. The same experience has been reported from the Joachimsthal Radium Kurhaus. Nevertheless, it seems premature to indicate to-day which definite clinical forms of chronic rheumatic affections are more and which are less especially adapted to radioactive therapy. We must yet collect many careful observations before we can set up such rules.

In other antirheumatic cures the case is the same. We cannot say upon certain and convincing grounds that this or that particular case of chronic rheumatism will be best treated at the indifferent warm springs, or by hot brine baths, or mud baths, or turkish baths, etc. For the most part we must experiment as to which bath is most suited to the patient. Personal experience, or I might almost say, therapeutic instinct of the experienced physician, often leads to the selection of a cure much better than scholarship and theory.

With a few words let me mention as a second group, *muscle pains and neuralgias.* In an endlessly greater number of cases than the statement of text books allow us to suppose and than the practitioner assumes, these painful affections depend upon metabolic disturbances or intoxication. In a predominating number of cases the toxins are of intestinal origin. Naturally in these cases one would obtain a much better and above all, a much more permanent result, if one ascertained and combated the cause. We may say that the greater portion of myalgias and neuralgias have not only a physical but also a chemical element which must, before all, be treated by diet. It is often necessary to make a very careful study until the causes can be clearly understood and a rational dietetic therapy founded upon them. Nevertheless such an etiological therapy will gladly accept the aid of physical measures.

Neither in combating chronic arthritis nor in combating neuralgias and myalgias should radioactive therapy seek to make superfluous the time-honored curative methods and supplant the famous nonradioactive curative springs and health resorts. Aachen, Aix-les-Bains, Franzensbad, Marienbad, Homburg, Leuk, Ragaz, Wiesbaden, Wildbad, Salzschlirf, Schlangenbad, Trenczen-Teplitz will not cease to be antirheumatic and antineuralgic health resorts of the first rank, although their waters contain only traces of radium emanation. Who would blot them out from a therapeutic register behaves like a faddist.

Besides these timehonored, curative factors radioactive therapy will, however, doubtless conquer for itself a respectable place. When we ask which form of radioactive therapy we should choose, my opinion is one should first direct one's attention to radioactive baths. At health resorts where radioactive springs flow, inhalation and drink cures can cooperate, especially in Joachimsthal; and with these different methods united with other favorable hygienic and dietetic auxiliaries of the health resort, the prospects of good results are doubled and trebled. One should not throw overboard the experience that in the above mentioned group of diseases treatment at health resorts, hospitals, and sanatoria always shows better average results than treatment at home by various physical methods. I do not believe that the emanatoria which have been erected in the large cities and which will still be erected, will succeed in the long run in overthrowing the repute of the approved health resorts. A number of indispensable auxiliaries which health resorts and sanatoria control cannot be obtained at home. On the other hand, I believe that injections of radium salts and preeminently injections and perhaps drinking cures of thorium-X, are destined to play a great part in the therapy of the said diseases. Our favorable experience with thorium-X relates to chronic articular rheumatism, sciatica, occipital neuralgia, migraine, and tabic pains. The

latter often react with astonishing promptness to the injections.

Sleeplessness, Nervous Overexcitability, etc.—In the third place I cite these also among the conditions which are often surprisingly favorably influenced, in the absence of our ability to interpret the internal mechanism of the action. Whoever has treated patients in emanatoria can confirm this experience. It impresses itself upon us with such convincing force that the thought which first comes near of a suggestive action must give way.

Sexual Potency.—Even in the beginning of radioactive therapy some favorable results were reported in reference to sexual potency. We have devoted special attention to this question, and it seems to us —if we group together our own results with those reported by others—definitely established that radioactive substances may exert an essentially stimulating influence on the generative glands and reflex apparatus, naturally provided that the functional possibilities of the latter are preserved.

In regard to the action of emanation upon the potency, we have the definite impression that permanent success (which doubtless lies beyond the confines of the possibilities of suggestion) is obtainable only through large doses (50-100 M.U. in a liter of air); and as a rule prolonged treatment is also required. Especially striking was the result in some patients with mild diabetes mellitus. Naturally these patients pursued simultaneously suitable antidiabetic measures, which caused them to be free from sugar. It is, however, well known, that in mild diabetes whenever a pronounced disturbance of potency has once appeared, the most careful dietetic and other measures must be used for a long period before the potency is essentially improved. Strong drink cures (30,000-60,000 M.U.) following the dietetic treatment seemed to hasten this improvement to an extraordinary degree. Injections of thorium-X promise to be still more favorable. One should not, however, begin with radioactive therapy until the patient has become free from sugar and has remained thus for a long period. For radioactive substances antagonize efforts to free the organism from sugar, and in severe cases increase the glycosuria.

Blood Pressure.—That high blood pressure is lowered under the influence of emanation belongs likewise to the oldest observations. This applies to arteriosclerosis and high pressure nephritis. I must express my astonishment as to the claims made that this effect regularly follows the application of weak emanation mixtures. I assume that other influences have cooperated here and that the lowering of blood pressure was incorrectly referred to emanation. According to our very extensive experience one does indeed see lowering of blood pressure during and after treatment with weak, medium, and strong doses of emanation, but we cannot reckon with certainty or even a certain degree of probability here, and we believe that almost always a certain amount of the lowering of blood pressure must be attributed to the accompanying therapeutic practices.

The state of affairs is otherwise in the much more powerful injection of thorium-X, the blood pressure lowering action of which was first shown by S. Kraus. We can fully confirm this statement. We also saw headache, pressure in the head, vertigo, and congestion (such as often accompany hypertension) disappear.

For interpretation we would recall the fact that larger doses of thorium-X injection have a bad influence upon the adrenal tissue, which governs by its secretion the blood pressure in some way.

*Contraindications to Radioactive Therapy.*—Which one of the indications that may be derived from previous experience with radioactive therapy will stand the test of future empirical and theoretic criticism, cannot naturally be reviewed as yet. However certain contraindications can even now be formulated. I will mention them here only briefly and add that I support myself essentially upon the experience of my clinic:

1. Conditions of cardiac weakness of every kind.
2. Neuroses of the vegetative nervous system, especially the sympathetic and severe neurasthenia.
3. Morbus Basdowii, diabetes, febrile conditions.
4. Tendency to hemorrhages of every kind, especially menorrhagias, metrorrhagias, hemoptysis, hemorrhagic diathesis, hemophilia.
5. Far advanced affections of the erythroblastic and the leucoblastic systems. (In contrast to early stages, which are excellently suited to this treatment.)
6. Cachexias of every kind (pronounced unfavorable influence on cancerous cachexia).
7. Senile marasmus. (In contrast to the beginning phenomena of old age, which are excellently suited to the treatment).

*Valuation of the Methods of Radioactive Therapy.*—Just as little can be said to-day to differentiate sharply the indications for radioactive therapy, so little can be said definitely as to which of the methods described will prove itself of most value. In the order of intensity we may group the methods thus far known as follows:

1. Thorium-X Injections.—These are controllable to the most delicate extent from the smallest inactive doses to those highly dangerous to life. However, the activities are so manifold and in part so violent, and the quantitative relations between dose and action have been studied so little that this therapy cannot yet be recommended for general application.

2. Thorium-X Drinking Cures.—The same may be said of thorium drinking cures. They are probably not inferior to the injections. As an unpleasant collateral effect may occur a strongly local irritation in the gastrointestinal canal. This may indeed be avoided by proper precautions.

One would not need to be much of a prohpet to predict that the powerful thorium-X treatment is the most promising of all methods thus far known. When it is better controlled it will be suitable with sufficient precaution for home treatment as well.

So far as we can survey the field its domain will be all those affections in which we can use practically large quantities of radioactive energy. These are before all the diseases of the blood, severe anemia and leukemia. Here one can accomplish nothing with the strongest emanatoria. Thorium treatment will however also extend to the treatment of chronic arthritis, arthrosis deformans, uric acid gout, myalgias and neuralgias. It will surely also gain ground in the treatment of disturbances of sexual power. The methods to be mentioned later often show themselves too weak in these affections.

3. Injections of Radium Salts.—In theory these are not inferior to thorium injections in power, but in order to attain the results which are obtained by medium thorium injections, large amounts of radium are required, which from the standpoint of the enormous expense, are for the time being out of question. In the form and dose in which radium in-

jections have thus far been used, they cannot be designated as very strong. The doses were frequently so small that very often it was rather more the name of radium than radium itself which was the bearer of the therapeutic energy.

4. Combination of Strong Radioactive Spring Baths with Emanatoria and Drinking Cure.—This appears to me to be the form which the practical physician to-day will take up by preference when he wishes to refer his patients to unobjectionable and certain measures. The most important indications here are:

(*a*) Genuine uric acid gout, with the provision that throughout all the dietetic measures are to be appraised as still higher than the radium treatment.

(*b*) Nongouty arthrosis of various causes with the provision that they are beyond the stage during which rest, antirheumatic remedies and a certain amount of patience secure excellent results.

(*c*) Myalgias and neuralgias, with the provision that they are not conditioned and maintained by disturbances of metabolism and intestinal intoxication; that is, the radioactive therapy is indicated where other physical measures also are indicated and where chemical methods are out of place.

(*d*) Disturbances of sexual power with the provision that all indications which are furnished by the original metabolic affections of the most varied kind have already been taken into account. The thorium-X methods seem, however, to be superior to the baths.

(*e*) In the beginning phenomena of old age, without actual disease. We recall that Gastein, centuries ago, enjoyed a reputation above all other localities for its rejuvenating bath. Patients returning from Joachimsthal are heard to-day to boast that the spring there is the "fountain of youth."

(*f*) In mild forms of neurasthenia and in nervous insomnia and in nervous pruritus.

5. Strong Emanatoria.—In the fourth place in this scale are to be mentioned the really strong emanatoria, that is, such as guarantee a minimum content of 25 M.U. in a liter, and which permit a still further strengthening. As the erection of such emanatoria for the time being encounters insuperable pecuniary difficulties, there comes into question as a substitute the small portable emanation apparatus, which, however, must be essentially improved before much can be expected of it. The emanation-bed (Neu Langfeld) may also be mentioned here.

6. Medium Emanatoria (12 to 25 M.U.).—These rank in the sixth place and further the drink cures with really strong solutions of radium emanation. (30,000 to 60,000 M.U. per diem). As far as we regard only a local action, I reckon here also the high priced radioactive pillows and compresses.

7. The Weak Emanatoria (8 to 12 M.U.).—The weak emanatoria, or, in other words, the mostly used form to-day of radioactive therapy, deserve to be mentioned in the seventh and last place. Much money has been squandered and what is worse, much good confidence has been imposed upon by the premature erection of many emanatoria, for there is no question that many of these have at their disposal much too weak gas mixtures, mixtures which lie notably below the minimum of their working capacity. One was at first too enthusiastic, one overlooked the quantitative relations between cause and effect, and one drew the circle of indications too wide. One stumbled upon the new methods before they were sufficiently elaborated by physiology and pharmacology.

In the meantime matters have become much better. One now is warned by the criticism, which has been brought forward against the weaker and weakest emanatoria. If now a retrograde wave sets in, this can do no harm at all. In radioactive therapy so much good lies hidden that it undoubtedly will be explained and perfected, and, as victor, will emerge from the strife of opinions. This does not lie indeed in the interest of the different mercantile companies, but the more in the interest of the new method itself, of physicians and of patients, when we demand that the entire radioactive therapy shall be elaborated and rated much more thoroughly by physiology, pharmacology, and the clinic, before it is given general application. The weak emanatoria indeed do no harm. They are often not much more than a therapeutic byplay. But it is quite otherwise with the stronger radioactive methods. With them the greatest precaution is necessary, for their healing powers on the one side, their danger on the other side, are not inferior to those of the strongest alkaloids.

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## THE PROGNOSTIC VALUE OF THE RINNE, WEBER, AND SCHWABACK TESTS.*

By A. B. BENNETT, JR., M.D.,

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For the past two years I have had a growing curiosity to know the real value of the tuning-fork tests relative to their prognostic truthfulness. In reading otological works one will find much space given to the description and interpretation of the tuning-fork tests in cases of impaired hearing, and usually at the close of the description there will be a confession on the part of the author that the tests are of little value. The tests are plausible and seem based on sound physical laws, and, what is more, they have been discovered by men of whose integrity we are assured and who have given the tests to the profession after careful study and clinical application. Therefore when I was asked to read a paper before this Society I thought that a review of these tests and an analytical study of a few cases might be of interest.

The principles of the tests of hearing are:

First. The normal range of hearing is between 16 and 48,000 double vibrations per second.

Second. When there is an interference in the conduction apparatus, hearing for lower tones is lowered or lost.

Third. When there is an interference in the perception apparatus, hearing for the higher tones is lost.

Fourth. Normal ears hear twice as long by air conduction as by bone conduction.

Fifth. When the conduction apparatus is diseased bone conduction is longer.

Sixth. When the perception apparatus is diseased bone conduction is diminished and the relative time for air conduction is lengthened.

I have found nothing in literature that contradicts these principles and many of the tests are based upon them.

*The Rinne test* is described by most writers as the comparison of the hearing of the tuning fork by air conduction and by bone conduction. If hearing by air conduction exceeds that by bone conduction in a deaf ear, it is called a Rinne positive and

*Read before the Medical Society of the District of Columbia, Oct. 16, 1912.

indicates a nerve deafness; and if hearing by bone conduction exceeds that by air conduction in a deaf ear, it is called a Rinne negative, and indicates middle-ear disease. Ballinger states that the difference must be recorded thus: "If bone conduction lasts 25 seconds and air conduction 15 seconds, it is a Rinne negative 10 seconds. If air conduction lasts 10 seconds longer than bone, it is a Rinne positive 10 seconds." Ballinger says that an A-1 fork should be used, while Politzer states that a C-1 or C-2 or C-3 fork can be used.

*The Weber test* is the using of a C-2 512 V. fork, placing it on the median line of the skull, forehead, teeth or chin. When there is disease or interference of the sound conduction apparatus, the sound of the tuning fork will be accentuated on the affected side, but if the deafness is due to labyrinthine disease the sound will be heard on the normal side. "The test is not applicable where there is both labyrinthine and middle ear disease or where both middle ears are diseased."

*The Schwaback test.* Schwaback discovered that "A fork vibrating in contact with the cranial bone was heard longer in the affected ear, referring to middle ear disease, than in a normal ear. The opposite is true when the auditory nerve is affected, the fork then being heard longer by the normal ear." For example, the fork is struck and placed on the patient's mastoid, and when the sound ceases it is transferred to the examiner's mastoid. If it is then heard it indicates labyrinthine disease in the patient. If not heard the examiner first places it on his mastoid and when the sound ceases places it on the patient's mastoid. If heard by the patient after the examiner's normal ear has ceased to hear it, an obstruction of sound conduction, but not disease of the auditory nerve, is indicated. Politzer values this test as diagnostic of nerve involvement and prognostic for recovery under treatment, when the sound perception is prolonged through the cranial bone. This test is valuable as it compares with a known normal the bone conduction power, and it can be easily and quickly performed.

These are the three most important and well known tests, and the tests that I am going to especially consider in this paper. However, I will describe two other valuable tests.

*The Gellé test* for movability of the foot-plate of the stapes, which is accomplished by compressing the air in the external auditory canal with a Politzer bag while a vibrating fork is held against the vertex or the bag, preferably the bag. At the time of the compression the perception for the tone of the fork is greatly diminished in a normal ear, owing to the increased pressure within the labyrinth. If there is ankylosis of the foot-plate there will be no increase of labyrinthine pressure and no change in the intensity of sound. On the other hand if there is marked deafness and the tone is diminished with each compression, it signifies that the foot-plate is movable and that the deafness is due to labyrinthine disease.

*Bing test No. 2* was devised for the purpose of differentiating between ankylosis of the foot-plate of the stapes and adhesive bands or other pathological conditions which hinders the malleus and incus in transmitting sound waves. It is the entotic use of the speaking tube. The test being made by comparing the hearing of a patient through a speaking tube applied to the external meatus and one applied to a eustachian catheter in place. If the sound is more distinct by the catheter, the foot-plate is movable while the other ossicles are fixed or hindered.

My desire to bring out especially the clinical relation of these tests to one another and their prognostic indications compared with the actual subsequent history of the cases, caused me to use as material the clinical histories of cases of chronic catarrhal otitis media in which I had recorded at least three tuning-fork tests with the hearing distance and after treatment at a subsequent period made another record of the hearing distance. This limited me considerably as I could not use the records of cases in which there was simply an examination record, nor cases in which I had omitted recording at least three tests.

I found fifty-three record cards that fulfilled the requirements of this paper, which means the analysis of tests upon 106 ears. There were twelve ears that presented symptoms of chronic catarrhal otitis media, but had normal hearing power. All twelve showed a Rinne positive, four showed a Schwaback middle ear, seven showed a Schwaback labyrinth, and one showed a Schwaback normal. In these six cases with normal hearing, the Weber was accentuated to one side twice and did not lateralize in four cases. In the 94 ears with impaired hearing, the Rinne test indicated middle ear disease in 23 ears, 18 of which improved and 5 were unimproved. This gives a favorable prognosis a 78 per cent. chance of being correct. The Rinne test was positive, indicating nerve deafness in 71 ears, 49 of which improved, and 22 were unimproved, giving an unfavorable prognosis a two to one chance of being wrong.

The Schwaback test indicated middle ear disease in 39 ears, 32 of which improved and 7 were unimproved, giving a favorable prognosis an 82 per cent. chance of being correct. The Schwaback indicated a labyrinthine disease in 55 ears, 35 of which improved and 20 were unimproved, giving an unfavorable prognosis almost a two to one chance of being incorrect. The Rinne agreed with the Schwaback, indicating middle ear disease in 19 ears, 16 of which improved and 3 were unimproved, giving a favorable prognosis an 84 per cent. chance of being correct. The Rinne agreed with the Schwaback, indicating labyrinthine or nerve deafness in 51 ears, 33 of which improved and 18 were unimproved, giving again an unfavorable prognosis almost a two to one chance of being wrong. The Rinne and Schwaback disagreed in 24 ears, 19 improved and 5 were unimproved.

The Weber test when applied to the cases where both ears were of impaired hearing, accentuated to one side in 35 cases and did not lateralize in 12 cases. Twenty-seven of the ears in which the sound was accentuated improved and eight were unimproved. The Weber test agreed with the Rinne test alone indicating middle ear disease in one case and that improved. It agreed with the Schwaback test alone to indicate middle ear disease in six cases and all improved. It agreed with both tests to indicate middle ear disease in six cases, five improved and one unimproved. This totals 13 cases in which the Weber agreed with either the Rinne or Schwaback or both to indicate middle ear disease and 12 improved. The Weber test disagreed with both tests in 18 cases, 14 improved and 4 were unimproved.

A glance at this analysis would certainly cause one to doubt the wisdom of relying upon tests that give such contradictory evidence, and I will admit I have only a partial defence to make for them.

A Rinne test which is negative, bone conduction being longer than air conduction, indicates middle ear disease which partly or entirely should be benefited by treatment. In this series of Rinne negative ears there was an improvement in 78 per cent. which is a good proportion when one considers that there is a certain number of catarrhal otitis media cases that will not improve owing to the long duration of the disease with presence of firm adhesive bands that resist all forms of treatment. A Rinne test which is positive, air being longer than bone, indicates nerve deafness, which with a few exceptions would mean an unfavorable prognosis. Yet in this series of 71 Rinne positive ears, 49 improved, which places little value upon the prognostic ability of this test when it indicates disease of the perception apparatus. I feel that there is an error in the description and application of the Rinne test to account for this discrepancy. The Rinne test is based upon the principle of hearing that in a normal ear air conduction is twice the length of bone conduction. Any variation from this proportion is abnormal and should indicate a nerve or middle ear condition. It then is readily seen that to simply state that a Rinne positive is better air conduction than bone conduction, and indicates a nerve deafness, is in error, for it places all normal ears as Rinne positive, and it also includes many approaching negatives as positives. I may make this clearer by supposing the total hearing time for the tuning fork to be 20 seconds, then bone 10 seconds plus air 10 seconds, would be normal. Any shortening of the time of bone conduction and relative increase of air conduction, such as bone 8 seconds plus air 12 seconds, or bone 4 seconds plus air 16 seconds, etc., would certainly be positive and indicate a nerve deafness. On the other hand a lengthening of bone conduction and a relative decreasing of air conduction, really indicating a middle ear disease, would be recorded as a positive, because air conduction was actually longer than bone. For instance, bone 12 seconds plus air 8 seconds, is really a negative, but is called a positive. Bone 18 seconds plus air 2 seconds, is really a negative, but is called a positive, air being longer than bone and under the usual description of the test would be called a positive and indicative of nerve deafness. One step further and bone conduction is longer than air conduction, for example, air 18 seconds plus bone 2 seconds, or air 8 seconds plus bone 12 seconds and we have a well recognized Rinne negative test. I will admit that the intensity of sound from the tuning fork when it ceases to be heard will be the same whether or not a hard or soft blow is given the fork, so that the most significant series of figures is the plus series, but with care and judgment a uniform blow to the fork can be adopted and an estimation made of the proportion of hearing time by bone and air conduction for that particular stroke of the fork. This in a way explains the error between the test prognosis and the results of treatment in my Rinne positive series. Doubtless in many of my recorded positives the bone conduction was lengthening although shorter than air conduction. The twelve ears that had normal hearing all gave a Rinne positive which was more than probable a Rinne normal.

*The Schwaback test* is based on the principles of hearing which state that when the conduction apparatus is diseased, bone conduction is lengthened, and when the perception apparatus is diseased, bone conduction is shortened. In this series of ears 39 showed a longer bone conduction than normal, indicating a middle ear disease, and 82 per cent. improved, showing that where the Schwaback indicated middle ear disease a favorable prognosis was justifiable, though a small number were past help. In 55 ears the bone conduction was shorter than normal, indicating disease of the perception apparatus with an unfavorable prognosis: 35 improved notwithstanding the indications and 20 fulfilled an unfavorable prognosis. This evident unreliability can be explained by first admitting that the tuning fork tests in relation to the perception apparatus do seem to be uniformly unreliable, and, secondly, stating that the impaired hearing in many of these cases was probably due principally to a diseased perception apparatus, and partly also to a middle ear disease. Therefore, treatment directed to the middle ear disease increased the hearing to the extent that the middle ear disease was relieved and a limited miprovement was obtained.

Considering the Rinne and Schwaback tests as they compare with each other it is evident that where they agreed in indicating the part diseased the proportion of ears that fulfilled the prognosis was about the same as with the tests separately, but in 24 out of 94 ears they differed absolutely in their indications.

In regard to the Weber test I have only considered the ear in which the sound was accentuated, as it is that side which is diseased in the middle ear and which would receive a favorable prognosis The Weber test is only valuable in indicating disease of the perception apparatus in unilateral deafness when the sound is accentuated in the normal ear. In 47 cases of bilateral impaired hearing, the Weber accentuated in 35, and of these 27 improved on the accentuated side. This gives about the same proportion of improved over unimproved when the test indicated a middle ear disease as from the other tests under the same conditions. However the Weber disagreed with both the other tests in 18 cases.

If I may draw conclusions from such a small number, they are these: That the study of even this short series of cases seems to show that tuning-fork tests are of value as aids in prognosis when their indications point to middle ear disease. That even with indications of a diseased perception apparatus supported by many tests, we should be guarded in giving an unfavorable prognosis until treatment has been administered and found to be useless, and that probably it is wrong to record the Rinne test as positive or negative, but that the record should show the proportion of time for the plus figure thus: Rinne—Right Air + 10/30; Left, Bone + 5/20. The numerator tells the number of seconds air or bone conduction exceeded the other and the denominator indicates the total time of hearing for the stroke of the fork.

THE FARRAGUT.

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**Atropine in Tinnitus Aurium.**—Weissenberg calls attention to the good results occasionally obtained from atropine in this affection when its origin is unknown. The author used it empirically and having seen a good result continued its employment with very few negative experiences. Wittmaack has recently stated that some cases of tinnitus ought to yield to remedies which modify the circulation. Atropine has of course an affinity for the blood vessels, which is exhibited in several well known ways. The author prescribes the drug as follows: ℞ Sol. atropinæ sulp., 0.01; aquæ, 15.00. S. Ten to fifteen drops three times daily.—*Deutsche medizinische Wochenschrift.*

# OBSERVATIONS OF THE ATYPICAL CHILDREN IN DR. GROSZMANN'S SCHOOL FROM THE STANDPOINT OF THE NEUROLOGIST.*

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Having studied a great many children in New York public schools for a number of years I have come to the conclusion that physical defects *per se*, such as hypertrophied tonsils and adenoids, carious teeth, a deflected nasal septum, if not accompanied by brain defects or disturbances in secretion of the ductless glands, cannot be held responsible for the production of the atypical child. Nor can it be said that this or that particular physical ailment is the only one responsible for the retardation of the child's mentality, for the correction of such only defect has never in my experience yielded any appreciable results so far as the mentality of the child was concerned. I have pointed out again and again that the brightest pupils of school show a ratio of about 12 per cent. without any physical defects, and 88 per cent. have one or more physical defects. In my opinion each atypical child is an entity by itself, and must be individually studied from every point of view, and it will invariably be found that there is more than one factor responsible for its defective mentality. And this statement cannot be made too strong, for the physical defects pale into insignificance beside bad hygienic and social surroundings, bad or improper food, hereditary influences, and brain lesions.

One other factor must be taken into account, namely, the proper teacher. He must not be the one who specializes in any given subject, but rather the one who individualizes and is trained to observe the shortcomings of the child in respect to memory, attention, and imagination. With the aid of the physician such a teacher can bring order out of chaos. And this must be attempted early if success is to be attained, for as the child grows the brain cells adjust themselves to their environment.

They, like any other cell, possess three properties, namely, formative, nutritive and functional. If the first two are interfered with the function of the cell will be impaired. The primary factors that can interfere with such processes are direct influences, such as bad food and faulty hygienic surroundings. Of course, other physical defects may indirectly interfere with the proper nutrition or be a source of irritation, and for that reason should be dealt with, but I do maintain that in every case of the atypical child we must look to the ideational part of the organism, to a brain defect. When carefully examined, we will invariably find that there is one. These defects may be of an organic nature or simply functional. The organic defects may be congenital or acquired, while the functional defects are acquired constantly from postnatal influences. So that in all these cases of retarded ideational function we also note in a greater or lesser degree sensoriomotor defects with corresponding focal symptoms.

In order to explain more fully my thesis and be able to discuss a rational mode of treatment of these cases, let me go over some of the cases examined in Dr. Groszmann's school.

Case I.—R. W., æt. 17; male. Father had venereal disease. An older sister is in an institution for feebleminded; a younger brother has hydrocephalus. Patient was breast fed. Began teething at 9 months; a history of convulsions at that time not available. Had pneumonia, whooping cough, and measles; enuresis nocturna for a long time. Has not complete control over his muscular coordination; his speech is somewhat indistinct, and rather slow and protracted. Was difficult to manage at home, was deceitful, untruthful, and had a proclivity to steal. Was far behind children of his age in school work. In this school he improved considerably in skill and schoolwork.

Physical examination: Pupils unequal and irregular, responding to light sluggishly, but well to accommodation. There is lateral nystagmus, with some divergent strabismus. Spasticity and motor weakness in all extremities. Superficial and deep reflexes exaggerated; Babinski sign present in left foot, and ankle clonus in both limbs. This is evidently a case of cerebral syphilis.

Case II.—W. W., æt. 8; male. A brother of R. W. Is a mixed breast and bottle fed child. Began teething at 7 months; no history of convulsions at this time; learned to walk at 18 months and to talk at 5 years. Language developed slowly, and is still defective. Enuresis noctuna still present. No diseases of childhood so far. Cannot dress and undress completely, and his movements are rather clumsy. Is possessed by phobias. Could neither read, write, nor count when admitted 6 months ago, but makes good progress now.

Physical examination: Pupils are irregular and react very slowly to light and accommodation. There is an old neuro-retinitis with dilated and tortuous veins, and contracted arteries. His head is rather large, of the hydrocephalic type. Superficial and deep reflexes rather sluggish; there is slight ataxia present in all extremities. This is a case of cerebral syphilis with hydrocephalus.

Case III.—D. T., æt. 18; male. Family history given as negative. He is one of three, the other two are normal. Was breast fed. Date of beginning of teething not given. Began to walk and talk at 14 months of age, and very slowly at that. Enuresis nocturna up to 15 years of age. Had whooping cough, but no other disease of childhood. Was very backward. Though slow, is progressing steadily in education.

Physical signs: Pupils irregular and reaction sluggish to light, but well to accommodation. Vertical nystagmus present. Has a right facial paralysis embracing the lower part of the face. There is a partial paresis with spasticity in all extremities, impaired motor power, and athetosis in right hand. Superficial and deep reflexes exaggerated with the Babinski sign in both feet, but no clonus. Case is one of cerebral syphilis.

Case IV.—E. E., æt. 17; female. Father of a nervous temperament; mother died of apoplexy. Paternal grandfather died of tuberculosis; paternal grandmother died of cancer. Patient is the last of eight children. The history of the others is not given. She was born after normal labor and was breast fed. Began teething, walking, and talking at the usual age. At the age of about three years had pneumonia, followed by convulsions. Had measles and whooping cough. Was always and is now undersized. Was somewhat rickety. An *x*-

*Read before the Annual Meeting of the National Association for the Education of the Exceptional Children, at the New York City College, November 1, 1912.

ray of her extremities was never taken. Began to menstruate at 15 years, and rather scantily. Was always constipated. Is rather affectionate and obedient. According to the Binet test a year ago she would be of the intelligence of an 8-year-old child.

Physical examination: Pupils markedly dilated, and do not respond to light and accommodation. Fundi normal, but extremely hypermetropic. Superficial and deep reflexes are exaggerated. The slant of the eyelids gives the characteristic almond-shape appearance to the eyes. The skin is dry and the hair coarse. It seems to be a case of infantilism—a type of cretinism.

Case V.—D. L., æt. 14; male. Family history not obtained. Was a bottle-fed baby, began teething at 8 months, walking at 1 year, and talking at about 3 years. Language developed very slowly. He was operated upon for appendectomy; his tonsils and adenoids were also removed prior to 1911. He is an underweight, and was rather backward in school work, but makes rapid progress.

Physical examination: Right spastic hemiplegia, superficial and deep reflexes exaggerated on right side, with Babinski sign present on that side, but no ankle clonus. There is athetosis with slight astereognosis in the right hand. Ocular fundi normal in both eyes, but there is a hypermetropia of a high degree, different in each eye. This is a case of infantile cerebral paralysis.

Case VI.—H. B., æt. 14; male. Mother neurotic. Patient is first and only child, and was born after a premature labor; was breast fed. He began teething at 6 months, walking and talking at 2 years. He had attacks of convulsions from the age of 3 months up to 3 years. In 1902 he had pneumonia, and made an uneventful recovery. In 1906 he had scarlet fever and diphtheria, from which he also promptly recovered. He is an habitual nail-biter and stammers somewhat. Upon admission was rather backward, but does well now.

On physical examination he presents only lateral nystagmus. In view of the convulsions I should class this case as one of meningo-encephalitis.

Case VII.—H. R., æt. 13; male. Mother neurotic. Patient was bottle fed. Learned to walk and talk rather slowly. He had pneumonia and typhoid fever between the ages of 2 and 3 years. Is somewhat backward, but doing fairly well.

Physical examination: Left spastic hemiplegia with exaggerated reflexes on that side, a diminution of the motor power, ankle clonus, and Babinski. He is a case of infantile cerebral paralysis.

Case VIII.—C. S., æt. 17; male. Father died of general paresis. Patient is one of two children; the other is said to be normal. He was breast fed for the first few weeks, and then bottle fed. Began teething at 6 months. No history of convulsions given. At the age of 18 months he first stood up and at 2 years he walked. At 2 years of age he began to talk. Up to that age he looked like a rickety child. He had whooping cough, measles, scarlet fever, and pneumonia, and recovered from these affections completely. He has masturbated for a time, was backward in school work, and scatter brained. Makes fair progress in school work now.

Physical examination: He is very talkative, but perfectly rational. His pupils are small and irregular, and do not react to light and accommodation. He is hypermetropic. His teeth are typically of the Hutchinson type. There is a motor weakness in the right arm and leg, the tongue deflects to right on protrusion from mouth. There is a right facial paralysis. The deep and superficial reflexes are lively, but there is no clonus and no Babinski. We evidently are dealing here with a case of cerebral syphilis.

Case IX.—J. S. M., æt. 16; male. Father was insane. Mother is dead; cause not given. He is an adopted child, and his history is not known definitely beyond the fact that he learned to talk at the age of 3 years, and that he had scarlet fever. Was markedly backward, but is improving since his admission.

Physical examination: Pupils irregular and sluggishly reacting to light, but well to accommodation, with hypermetropia. There is a slight right facial paralysis embracing the lower part of the face. The tongue deviates to right on protrusion. The motility of the right arm and leg is somewhat impaired, superficial and deep reflexes livelier on the right side than on the left. There is slight athetosis in the right hand, a tendency to the Babinski sign in the right foot, with ankle clonus. He has fits of temper and stammers. It looks like a case of infantile cerebral paralysis and of cerebral syphilis.

Case X.—F. K., æt. 15; female. Mother and father neurotics. Paternal grandmother died insane; maternal grandfather died of tuberculosis; maternal grandparents were related to each other as first cousins. A maternal grandaunt was feeble-minded. No teething history obtainable. Patient was a breast-fed baby. She started to walk at 1 year and to talk at 3 years. Language developed slowly. She had measles, diphtheria, and whooping cough, and recovered from these perfectly. Has not yet menstruated. The child is somewhat backward, but progressing well in her studies.

Physical examination: Pupils are unequal and irregular, the right reacts sluggishly to light, the left not at all, while both react to accommodation well. She has considerable hypermetropia. The superficial and deep reflexes are exaggerated. There is considerable spasticity in both lower extremities, as well as in the upper ones. The Babinski sign and ankle clonus are present on both sides. The teeth are of the Hutchinson type. This is a case of cerebral syphilis.

Case XI.—H. H., æt. 9; female. Family history negative. Was bottle fed. There is no history of teething. She began to walk at 18 months, and to talk at the same time. Between her second and third year she had three convulsive seizures, with loss of consciousness. In 1909 and 1910 she had two more seizures, after which she was listless and feverish for three days. She had measles and whooping cough, and made an uneventful recovery. Four years ago her adenoids were removed. Until then she was a mouth breather. At times she suffers from incoordination in gait, and is unsteady in posture, and would walk up and down stairs on hands and knees. She is very restless and very difficult to handle; is subject to frequent fits of temper, during which she would throw herself upon the floor, kick and scream. She is an habitual masturbator. In school work she is rather bright, far beyond her age, somewhat precocious.

Physical examination: She is hypermetropic, but otherwise her eyes are normal. The tongue protrudes slightly to right. There is a slight facial paralysis on the left side. The motor power in left upper and lower extremities is slightly diminished. There are associated movements in both hands; re-

flexes are lively; there is no ankle clonus, but a tendency to the Babinski sign in both feet. Here we are dealing with a case of psychical epilepsy probably as a result of an old encephalitis.

Case XII.—E. K., æt. 15; female. Maternal grandmother died of pulmonary tuberculosis. Mother neurotic. Her firstborn child has congenital infantile paralysis on the left side. The patient was breast fed; learned to walk and talk early. No history of teething is given. She had measles, scarlet fever, whooping cough, and typhoid fever. There is a history of convulsions at the age of five years and epileptiform attacks a year ago. These attacks come on in intervals of a few months. She is somewhat backward, but progresses favorably.

Physical examination: She is hypermetropic, but otherwise the eyes are normal. There is a slight left facial paralysis, a spastic hemiparesis on the left side with diminution of the motor power on that side. The Babinski sign is present in the left foot, but no clonus. This is a case of infantile cerebral paralysis with epileptiform convulsions. The Wassermann reaction was not obtainable in any case.

These children are living under most ideal conditions. The air is of the purest, their rooms of not less than 1,800 cubic feet capacity are very light and well ventilated; their diet is carefully regulated, and their vegetative functions jealously guarded. Under such condition it is no wonder that the individualizing and observing pedagogue accomplishes good work.

Take for example the cases with epileptiform seizures. It is a well established fact that we can accomplish very little, if anything, with medication, while a great deal is attained with a suitable bland and nonirritating diet. Bad food yields toxic products in its decomposition, which permeate the whole system, producing a mental aberration, and through their irritating influence upon the motor brain cells produce convulsions. The simplest way out of this difficulty is proper food. Habitual constipation, even with proper diet, will produce the same effect as though bad food were ingested. A careful attention to the vegetative functions will obviate the difficulty. Along with this medical attention becomes a valuable adjuvant. And this is true of every other case of the atypical child irrespective of what the character of the lesion may be.

The results attained in Dr. Groszmann's school are due to the combined efforts of the individualizing teacher and the painstaking erudition of the medical examiners whose advice they seek and follow.

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## BEAUTY DOCTORING.

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While familiarity with our imperfections produces an increasing toleration, which often even grows into admiration, "mine" assuming values in units not thought applicable to another, or even appreciable by him, the realism of comparative views frequently prompts a desire to moderate some of the more glaring defects, and leads many to lend ear to even the most extravagant claims of special ability to effect the wished for transformation.

As pretension is the chief asset of the incompetent, it is by them exploited to the utmost, and seems to be the most effective lure for the would-be-beautiful, as nothing short of a promise of as complete and as wonderful a transformation as Medea effected upon old Æson seems sufficient to content or even to induce them to submit to treatment, which, of the proper kind, intelligently applied, might, in some cases, effect great improvement. But no, as usual the fool by folly led is caught by the greatest glare, and commits that which she is most concerned about to the bungling hands of some ignoramus, who rarely learns enough, even after extended "practice," either to paint a face or dye a coiffure acceptably.

Manicures, hairdressers, barbers, bath-rubbers, masseuses, and even actresses, whose vanity, tempted by trashy newspapers, leads them into ridiculous explanations of how they attained and maintain what is frequently a supposititious beauty, furnish the most recruits to the ranks of these so-called beauty-doctors. It may seem strange that any one should be permitted to do what is actually practising medicine, as defined by the law, without either education or license; yet the public's attitude of indifference, together with the State's recognition and licensing of various procedures encroaching upon this sphere, and the toleration of the prescribing druggist and patent medicine man have so lowered the lay estimation of the healing art as to permit sympathy with, toleration, and even patronage of these people who are really somewhat justified in the claim that their work is thrust upon them. The manicure is required to produce pink, smooth, rounded, tapering nails, and even fingers out of the most unpromising material; to whiten hands, remove freckles, hair, etc., and, unless she at least supplies "hopeful" treatment, is condemned to business failure. Woe to the hairdresser or the aspiring barber who knows no sure method of rejuvenating, tinting, and even of restoring the hair. If a bath-rubber and a masseuse do not confess to a touch sufficiently magic to stroke away a wrinkle, a double chin, or an overplusage of avoirdupois, no matter where located, how may they hope to rise? And so on; the experience of one temptation after another finally turning out a complete "beauty specialist" with claims to suit all comers.

Some will ask why are there no regularly licensed practitioners who do this work? Of course, but their advice and methods, when consulted, are too simple, and their promise not great enough to suit the clientele. In fact, ethical medical men avoid such work, so much has it been brought into disrepute by these people, and are very diffident in giving advice in cosmetics.

In proceeding we will try to show all real possibilities of this work, and both by exclusion and direct consideration demonstrate the baselessness of some of the most far-fetched pretensions.

*The Hair-coloring.*—If one must have a remedy for grayness, there is no other recourse than to artificial staining, notwithstanding a recorded instance of the natural change from black to gray, gray to black, and then again to gray in the case of a man during a period of some five years, and a few other similar though less remarkable suggestive instances. The only effective dyes are those by the use of which a precipitate is formed on the hair, practically a plating or coating; and, as those who have had experience know so well, they never give a satisfactory result; at best a dead, unnatural color is obtained, and very frequently undesirable shading, where sufficient has not been applied or the coating has worn off, leaving a purple, or even a red tint. It has been said that "Indignant Nature

hides her lash in the purple hues of a dyed mustache."

As a preliminary to any staining of the hair it must be washed with an alkali, such as ammonia, and this, especially when applied in strong solution or too frequently, causes it to become very brittle, and consequently soon reduces its bulk greatly. Subsequent to the alkaline wash a solution of nitrate of silver is brushed on, carefully avoiding the scalp (yet for a good result the hair nearest the skin must be thoroughly covered) and allowed to dry in the direct sunlight, during which process it changes into silver oxide—a black. A red tinge or a brown is reached by varying the strength of the silver solution. The same results may be obtained by similarly precipitating an oxide or a sulphide of lead or mercury; but these last named have, when carelessly brushed on the scalp in some quantity, occasionally given rise to symptoms of poisoning. A red tinge is also sometimes given to light hair by the use of an infusion of henna leaves or of logwood. Brown, more or less fugitive, may be imparted by a solution of the coloring matter from the outer husks of the native black walnut, such as the country small boy has such difficulty in removing from his hands in the fall. A light shade of the same is sometimes produced by a preparation of tannic acid which, for the color in question, usually gives better results than the other dyes.

To tinge dark hair, a degree of bleaching must be effected, always by the use of peroxide of hydrogen, and, by varying the number of applications, after the preliminary removal of the oil by the alkaline wash aforementioned, this is made a brown, dark or light according to wish, or even a reddish shade may be left by adroit management. Of course, apart from the tendency to extreme brittleness produced by the alkali, no actual harm is done, if, in the case of the dyes, the scalp is avoided, and we can tolerate the blend of color so frequently obtained. Bleaching is not so troublesome, and can be effected fairly well by oneself without danger, except the resulting brittleness. Yet nine out of ten fail to reach the back and more inaccessible portions of the hair, and always overbleach the front and ends. We often hear blondes complain that their hair is growing darker at the roots or in the back, when nothing but their own unequal applications or failures first to remove the oil from the hair are to blame.

Of course there is no such thing as a hair restorer, and, when once a hair has dropped out from the changes incident to advancing age (and this is the only cause for general falling of the scalp hair, except severe acute illness) nothing will replace it. It is very much like pouring water on a rotten stump, expecting to regrow the tree, to dump the various tonics on one's scalp. Most of them contain nothing possessing even a good pretence of action when applied to the scalp, although some have irritating properties which are supposed to stimulate the local circulation of blood, but for what? The hair-root died before the hair fell out, and there is no known method of reviving it. Recently, however, an enterprising Frenchman has found a way of seeming replacement wherein, as in a child's garden planting, the broken off tops are stuck in. He fastens a hair to a bit of gold wire, and pushes the wire beneath the skin, allowing the hair to protrude, and repeats the procedure till the required number have been placed, or, perhaps, till he or his pin-cushion patient is exhausted. Of course they do not grow and are not expected to do so, and all will soon break off, so that such frequent repetitions of the process are necessary as to make it improbable that anyone except a widower on the trail of the teens would submit.

Quinine, much vaunted as a hair restorer, has no effect whatever, unless in large quantities, when it acts as a mild antiseptic, none in the proportion used in the so-called "tonics"; and the popular egg-shampoo is a poor substitute for soap and water.

Although dandruff is part of a general skin disorder, usually dependent upon general ill health or poor digestion, and is best got rid of by removing the cause, some temporary good may be accomplished by the use of mild antiseptic washes (usually a solution of resorcin), but the sure-cure advertised as due to such preparations is very slow and uncertain in materializing. As the underlying conditions improve the dandruff disappears, and no permanent cure is possible otherwise.

Preparations claimed to curl the hair contain gum-arabic, and those to straighten it, wax; so how each of these might feebly act in the indicated direction is readily appreciated. The plantation darky's corn-silk and grape-vine decoction has never become popular, perhaps only because our hair is inclined to be straight, and our sighs are all for curls. I know a woman who regularly uses the ashes of wood-shavings (secured in long spirals) and who cannot be convinced that those of a fence-rail would do as well, as it is only the lye obtained which, by removing the oil, encourages her curly locks. I hardly think any reader would try a hair-oil, which, if ever used, is best made of castor-oil and alcohol. The much vaunted singeing of hair, to stop splitting, only burns off what a pair of scissors would more easily remove without doing the damage wrought by the heat, which chars or renders very brittle the remaining part of the hair for an inch or more below, and actually does harm.

The face, however, supplies what the French call the *point d'appui* of the "beauty doctor's" prentice-hand, and on it most of his pretensions are lavished. Nearly all the measures employed are both harmless and totally ineffective, comprising applications of lotions of glycerin and water flavored and colored in infinite variety; creams, greasy and greaseless; both lotions and creams variously fortified with one or more of the subterfuges with which empiricism has endowed the pharmacopeia. The glycerin contained in the lotions, while some remains on the skin, acts as a lubricant and, by making it temporarily slightly more pliable, conveys the impression that it may permanently modify it in this direction. Some lotions contain carmine and consequently impart a pink tinge. The grease creams, such as cold-cream, a composition, principally of oil of almonds, flavored with rose-water (although cheaper fats are commonly used), are either modifications of this, or made with a base of wool-fat, vaseline, cocoa-butter, castor-oil, all with varying proportions of wax to add consistency, and frequently a little whale-fat (spermaceti) is thrown in without any good reason. Flavors are given to suit, and many are colored, as "cucumber-cream," which sometimes, besides being dyed light green, has some cucumber juice added to supply the appropriate odor. Why this vegetable is used is hard to tell, unless as it is said to have the odor of rattlesnakes, in imitation of the savages who superstitiously anoint their bodies with snake oil, to make them supple.

Greaseless creams contain gelatin or starch appropriately flavored and colored, and their only use is as a substitute for water when one has an intuitive dislike to familiar contact with that so-called element—of primary education—and so enable her ladyship to cultivate a superficial hydrophobia; but, as they carry away with them, when rubbed off, much of the dirt, they are useful.

A "skin-food" is one of these creams, and is of course nothing but an absolute fraud, having no action in the direction implied, as it is as reasonable to try to fill a pitcher by setting it in a basin of water as to expect an appreciable amount of the fat rubbed on to penetrate the cuticle. Anyway the skin as it is popularly known is not nourished by fatty materials.

"Toilet-milks" are emulsions (suspensions in water) of the various creams, and of course are similar in effect. "Jellies" consist of gelatin, gum-arabic, or starch added to one of the lotions, and are equivalent to greaseless creams.

*Freckles,* which are but points of greater skin color-production stimulated by the increased need of protection from the strong light of summer, are commonly treated by the application of a corrosive lotion, universally a dilute solution of bichloride of mercury, which is usually repeated at intervals of several days until the most superficial layers of the outer skin become detached. The greater smoothness and less stained character of the remainder, together with an effect of the mild irritation, an increased blood supply, produce a slight temporary improvement in skin finish and coloring which lasts for some days. Of course the seat of pigment production lies beyond reach of the method, but at least the superficial coat is removed, and the rest is partially concealed as stated. If such a procedure be used too frequently, and it can rarely be repeated more than once a month, marked actual harm may be done—the skin becoming much roughened and possibly discolored. Really, under the best circumstances, the result is hardly sufficient to save the whole thing from being decried as an absolute fraud. It, however, furnishes a means whereby the customer may be deluded into further patronage, thinking that, as with the imperfect pearl, peeling may reveal a luster unknown before; and although the attempt may not, as with some of these gems, be disastrous, yet, were her ladyship's expectations to be realized, she would have to be all skin like an onion, and would be finally peeled away by the repeated efforts to reach the peach-blow she fondly imagines lies somewhere beneath. Some bleaching of the surface of the skin may be effected by long continued use of peroxide of hydrogen, each time after a good soaping. So called blackheads, large-mouthed skin glands whose oily discharging secretion has become darkened by dirt, may be made to disappear with a good scrubbing with soap and water, although a fat dissolving lotion frequently used will do the work.

*Wrinkles* are due to two causes: One the increasing loss of elasticity from which the skin suffers in common with articles made of rubber, which the more extensively and more frequently they are stretched the less complete their return to their former state and size, and changes in the skin bed, such as the absorption of fat therefrom, alterations in the shape and size of muscles and bones, which latter of course only affect the larger furrows. As there is normally great individual variation in skin elasticity the tendency to wrinkle varies accordingly. The treatment of this condition, apart from the peeling process above detailed, which in the temporary glow and freshness resulting conceals, as spring the ravages of the passing winter, the furrows and ridges beneath, is attempted by applying adhesive plaster, collodion, or even bandages, all of which act by temporarily protecting the skin from the creasing action of the underlying muscles till body fluids have distended the underneath tissue interstices, or have produced this last effect by inducing capillary dilatation, as a plaster does through increase of warmth, or by withholding some of the air pressure, or both. As will be understood from the foregoing it is extremely doubtful whether permanent results can be attained by anything short of permanent treatment, but one thing, however, is certain, and that is that the nuisance involved is never justified by the result, for the improvement is barely noticeable. Some of these special "specialists" "cure" wrinkles by covering all with a nasty smear of paint and powder or the so-called enamel —a suspension of various powders (calamine, a pink, talcum-like substance is a favorite) in glycerin —which is painted on, and, as the glycerin does not dry, neither blows away nor cracks if reasonable thickness is not passed.

Grease paints are combinations of olive or of sweet-almond oil with wax and various colors; often the cheaper kinds are made of other fats with paraffin instead of wax.

All good rouge is prepared in France from the safflower, a plant grown in the East, and its precipitation upon the little china disks on which it is sold is so much of an art that attempts at imitation in this country have been too costly to make competition profitable. Still more is sold than of any other cosmetic, and, even if we decry its use as removing some of the incentive to improve one's health, we cannot pretend that it has any harmful effect whatever on the skin. So let us be content with proclaiming that here a crime is committed only when the criminal is detectible, as is sometimes the case in much graver matters.

A great many face preparations are denominated cerates, which implies a content of beeswax, used to stiffen the ordinary grease-cream, and so act similarly, the only difference being that their greater consistency permits more to be rubbed on, and then not to be so easily rubbed off.

Certain procedures applied to the hands come under our subject, for, in addition to the use of the various lotions, creams, etc., to small or to no purpose, some pretenders claim to be able to remodel the hand, and do it up in bandages or plaster. They are able, for a while at least, to delude some shallow wits into the belief that the joints are becoming smaller and the fingers more tapering, which seems to be the goal of hand-beauty, unless we recognize the demand of some for sharpened nails, a development that they can hardly expect to use either for offense, defense, or convenience; although I did know an individual who avowedly grew the left little finger-nail to special length for toilet uses, and the famous Lady Mary Whortley Montague, when reproached by a friend for her dirty nails, replied that she must scratch. In reality, nothing except protection from the effects of work in enlarging the joints or in roughening the skin will add to the existing symmetry of the individual hand, so that hand rest and the constant use of gloves will accomplish more than the most pretentious beautifier advertised in print or by reference.

As to the nails, one's own ordinary care in trimming and cleaning gives results fully equal in attractiveness to the *chef d'œuvres* of the manicure, whose tinting and waxing so interfere with the natural color-blending with the adjoining skin as to make the exhibit as unpleasing as the varnished hoofs of the Central Park hackney.

Since we have got so far in our subject it would seem incomplete did we not mention some of the methods not usually undertaken by others than licensed practitioners. There are many so-called depilatories on the market, all having as a base one of several substances similar to calcium sulphide (popularly unidentified except by its odor) which, when made into a paste with water and spread and allowed to remain on the offending hairy area for a minute or two, will destroy that part of the hairs above the skin surface. This, of course, requires repetition every few days, in fact oftener than the method of pulling the hairs out with a pair of tweezers, and is only better than the daily pumice-stone rub, to grind off the previous twenty-four hour's growth, or the regular shave. Possibly the regrowing hair is stronger than before, but it is more than probable that it is so in appearance only, as what was previously a part of the stump has been pushed out till it has become the tip, and the softening effect of the original taper has been lost. Of course after a time each hair would be worn to a point by friction, which is the natural cause of the original taper. There is great sale for many of these depilatory preparations, although, if one is not satisfied with the result of daily applications of peroxide of hydrogen, which bleaches even quite large hairs into comparative invisibility, the electric needle of an expert—actual, and not in name only, lest disaster be courted—had better be sought.

By this method, one sitting a week of an hour's length enables the operator to attack about fifty hairs by thrusting his little needle along each of their shafts, and then having the patient touch the other electrode, which, by a contact of about half a minute, causes destruction of the hairbulb or root—in those cases where the needle has accurately reached it—in about two-thirds of all careful attempts. Repeated sittings are of course required, and all failures necessitate a reattack. Of course all this is tedious, expensive, and somewhat painful, but there is no easier thorough way. The *x*-ray has been used, but is very dangerous, and usually the growth returns somewhat stronger than before.

Of course there are many congenital and accidental defects that may be remedied by plastic surgery, but the paraffin injection idea, popularly so well known, is not feasible, and I know of no one so reckless as to think of its employment.

Moles and warts on most of us who are not as ugly as Oliver Cromwell are such distinct detractions that it is surprising how many make pets of theirs, refusing even entreaties to allow a clip of the scissors, if not to make classical, at least to generalize their features.

While individual muscles may be enlarged by special exercise, local fat deposits cannot be influenced, except in common with the general padding of the entire body, notwithstanding all the gyrations and regimens, as ridiculous as the pretensions of those who recommend them, propounded by the professional beauty claimants of the day.

As a most horrible warning against the antifats of the advertisers, I quote the case of a 235-pound woman who told me to-day that she recently sent $25 to one of them for their "specific," but was so worried by the appearance of one of the capsules received, which was labeled "special," to be taken last, that she sent it to a laboratory for examination, and, I think, was permanently cured of her "reducing" mania when it was reported to contain the head of a tapeworm.

Many "antifats" have been found to contain thyroid-gland substance, and are fortunately rarely taken by anyone for a long period, as careless administration of this drug is thought to be dangerous, although in at least some cases, and to some degree, it is undoubtedly effective.

The foregoing covers at least most of the real cosmetic possibilities, though, of course, as analysis has so frequently disclosed, many of the advertised nostrums contain nothing pharmacodynamically effective, and sell on their label, their color, and their flavor, trusting for credit to what may be called the innate Christian Science of their purchasers.

140 Clinton Street.

## THREE IMPORTANT DON'TS IN BONE PLATING.

By G. P. COOPERNAIL, M.D.,

BEDFORD, N. Y.

1. Don't plate a compound fracture until the wound has healed and all danger of infection is past.

2. Don't plate a fracture that fails to unite where there is good apposition and no tissues between the ends of the bone. The plate will not help you get a good strong callus. Try injecting blood between the ends of the bone (Bier) or glycerite of tannin (Dawbarn).

3. Don't put your fingers in the wound if you *do* wear gloves, and it is better to boil the instruments after being used in the wound before using them the second time.

**Acute Osteomyelitis of the Upper Jaw.**—H. Fliess reports a case of this condition occurring in an infant three weeks old. The symptoms were as follows: swelling of the left molar region, edema of the eyelids, bulging of the hard palate and alveolar process, the escape of pus through an incision, the detection of exposed bone by means of a probe, and the escape of the rudiments of two molar teeth. The infant made an uneventful recovery.—*Archiv für Kinderheilkunde.*

**The Painful Symptoms of Poliomyelitis.**—E. Tezner states that these symptoms include the cutaneous hyperesthesia; the spontaneous pains in the affected limbs; the pains along the spine, particularly on motion; and the pains on pressure along the peripheral nerve trunks and over the muscles. To these is added by the author a fifth symptom, namely, the pains arising on active and passive motion, which causes a stretching of the larger peripheral nerves. These pains are detected among the initial symptoms and even as late as the second month of the disease.—*Monatsschrift für Kinderheilkunde.*

**Influence of Ions Upon the Action of Digitalis.**—A. J. Clark states that the action of digitoxin depends entirely upon the concentration of the drug, except when very small quantities of fluid are used. Digitoxin and strophanthin have no diastolic action upon a frog's heart perfused in the manner described by the author. When digitoxin and strophanthin act on the frog's heart only minute quantities are absorbed, but the quantity is not so minute as to exclude the possibility of chemical combination between the drug and the heart muscle. The systolic action of digitoxin upon the frog's heart is dependent upon the presence of calcium. Diminution in the quantity of calcium in the Ringer's fluid diminishes the systolic action of digitoxin. The presence of excess of alkali or the absence of potassium slightly increases the systolic action of digitoxin. The presence of excess of calcium or of blood serum, does not influence the systolic action of digitoxin.—*Proceedings of the Royal Society of Medicine.*

# MEDICAL RECORD.

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## DORSAL PERCUSSION IN THE DIAGNOSIS OF APPENDICITIS.

THE importance of making an early diagnosis in a case of appendicitis and the obscurity in the physical signs and symptoms that occasionally renders a diagnosis at any stage of the disease well nigh impossible, impart considerable importance to any new physical sign that may, if only to a slight degree, assist in the diagnosis. Such new physical sign is probably that which has been demonstrated in the method of dorsal percussion as practised by William Ewart (*British Medical Journal*, December 28, 1912). This observer, who within recent years has called attention to a number of the hidden possibilities of plessimetric percussion, notes that in normal individuals, over the posterior aspect of the sacrum and ilium, the percussion note is one of resonance. Between the sacral area and that covering the ilium there is a patch on each side, oblong in shape, lying at the junction of the sacrum and ilium, and corresponding to the crest of the posterior iliac tuberosity. This area may be easily mapped out with the aid of a Sansom's plessimeter. These two so-called "posterior iliac patches" present a note of subresonant dullness in contrast to the resonant note over the ilium and over the sacrum. The right patch is somewhat duller than the left. In cases of appendicitis the dullness is no longer confined to the right normal patch, but extends outward over the right iliac surface. In rare instances the dullness may extend over the surface of the sacrum.

The value of the dorsal method of percussion, according to Ewart, is revealed in the fact that there are acute cases of appendicitis without localizing physical signs in the abdomen. In these cases dorsal percussion almost invariably provides the characteristic evidence. Cases of retrocecal appendicitis, in which the abdominal signs are less apt to be in evidence, and particularly cases of retrocecal appendicular abscess, cannot escape observation if the dorsal method of percussion is employed. Cases of suspected appendicitis when subjected to the test of this method pass into the group of positive cases, as has been confirmed in a number of instances by the subsequent operation.

Transfixion experiments have shown that the normal right dorsal patch corresponds to the thick intestinal structures of the ileocecal junction, of the valve, and of the root of the appendix. Any pathological thickenings tend to intensify the dullness. Following an operation for appendicitis, providing the result is a perfectly clean one, the posterior right dorsal patch of dullness disappears entirely.

The dorsal method of percussion furnishes three diagnostic criteria. When the results of percussion are negative one may be assured of the absence of any inflammatory lesion in or about the appendix. If the method gives positive results then a suspicion that appendicitis exists is confirmed. It provides definite localizing evidences in a small group of cases with severe symptoms in which the lesions are deep-seated and consequently "latent."

It may be difficult for most observers whose ears are not adept in the discrimination of delicate shades of dullness, to avail themselves of this novel method of diagnosis. Nevertheless, the extraordinary claims made for the latter justify an extended employment of the dorsal method of percussion in all physical examinations, if only for the purpose of training the examiner to appreciate any differences, however slight, in the dorsal percussion note. Undoubtedly further extended trial will enable one more definitely to estimate the validity of the dorsal sign in the diagnosis of appendicitis.

## ATHLETICS IN GERMANY.

GERMANY has taken up athletics, not as a fad or craze, but as an institution for which the time is evidently ripe. Hitherto the place of athletics has been occupied by gymnastics, and the former is in no wise to displace the latter, for each is to represent an arm of the same service. It is conceded that gymnastics furnishes no element of enthusiasm. That such an adoption of national athletics is assured for the future well appears in the formation of a new society for the scientific study of sports which recently assembled for the first time (*Muenchener medizinische Wochenschrift*, December 3). The membership appears to be limited to medical men. Of a large number of papers read, there were several on athletic heart, which, according to Kraus of Berlin, is very largely an affection of the right heart. Though to a certain degree physiological, it often represents a lesion. Electrocardiograms of great value have been obtained which characterize a threefold condition—"youth, health, and the state of training." Data concerning physiological hypertrophy have been collected which show a distinct relationship between relative size of heart and relative activity. The stag has the largest heart and the phlegmatic domestic pig the smallest. Wild animals have larger hearts than their domestic representatives. Next to the athletic heart, athletics for women seems to be the most vital topic and one member seeks to explode the heresy that housework for women is able to replace athletics and gymnastics. Swimming, rowing, golf, and tennis are suited to women, while for a steady diet, walking and gymnastics should be depended upon. One author believes that girls should not take up athletics until after puberty. One day's rest just before menstruation is imperative.

Among the recommendations made were the following: Olympic competitions should be international, not merely national; six-day contests should not be tolerated; there should be an Imperial Commission for the supervision of all exercises; the wholesale athletic awakening will tend to develop new instruments and methods for anthropometry; and finally of great economic value are the winter sports which take people out of doors when their natural disposition would be to become more sedentary.

## NEPHRITIS FOLLOWING TONSILLITIS.

Idiopathic nephritis, whether acute or chronic, has always presented an added element of mystery when contrasted with idiopathic inflammation of certain other organs. Young subjects in the apparent prime of vigor and in the absence of any causal nexus, such as is usually necessary for the development of affections of this kind, are stricken down and either perish in a short time or become hopeless invalids. The questions most frequently asked under the circumstances have reference to the impossibility of foreseeing and preventing the lesions. Certain remote factors are grasped at which are, perhaps, not at all concerned in the etiology. We must assume that the organs represented a weak point in the economy and perhaps had been damaged by scarlatina in early childhood. Or investigation may show a familial tendency to nephritis. For corresponding exciting factors we have recourse to hypothetical toxins, exogenous or endogenous, such as are abundantly evident in secondary nephritis.

It is plain that any positive association of an idiopathic nephritis with any causal factor whatever, however slight this may be, may be made to throw reflected light on the entire question of etiology. At a medical meeting during the present year (*Münchener medizinische Wochenschrift,* No. 50, p. 2764) Geiger reports a series of cases in young subjects, from 12 to 25 years of age, who with year-long tendency to ordinary lacunar tonsillitis finally developed attacks of acute nephritis in immediate sequence to acute anginas. One patient was dead of uremia at the end of three weeks, while the others came off easily. Such cases are by no means rare. In the absence of elaborate studies we do not know how the kidney lesions originate, but the supposition of a so-called septic rheumatoid infection is not unwarranted. Much of the nephritis in scarlatina doubtless originates in a similar fashion.

The lesson to be derived from such cases, if any is needed, is the necessity of extirpating chronically infected tonsils. From analogy we might expect that other cases may occasionally arise from intranasal and sinus disease.

## The Relative Importance of Aerial and Contact Infection.

In a paper read before the International Congress of Hygiene and Demography, held at Washington last September, Dr. Charles V. Chapin called attention to the diminishing belief in the importance of infection by means of contaminated air. Formerly it was thought that yellow fever, influenza, cholera, scarlet fever, typhoid fever, smallpox, diphtheria, and tuberculosis were all air-borne diseases. Experiments establishing the insect origin of yellow fever and malaria have proven that at least these two diseases are not in the air-borne group. There is no good evidence of the air carriage of typhoid fever or cholera and the rapid diffusion of influenza can be explained by the ubiquity of carriers. Observations around hospitals and dwellings show that diphtheria and scarlet fever are not carried by the outer air and the consensus of opinion of the bacteriologists is that tuberculosis is probably not transmitted in this way. The view of certain English observers that smallpox may be carried long distances through the medium of air alone has not stood the test of careful analysis. The existence of carriers and mixed cases affords such ample opportunity for infection by contact that the theory of aerial transmission is no longer required to explain the origin of hitherto unexplainable cases of contagious diseases. However, it is theoretically possible that the contaminated air of houses and hospital wards may transfer the disease from one part of the infected building to another, although the virus may be too diluted in the outer air to do any harm. But even in the case of indoor infection the evidence for air transmission is not strong. The bubonic type of plague, Mediterranean fever, cerebrospinal meningitis, and poliomyelitis do not spread in hospital wards. When hospital infection occurs in cholera and typhoid fever it can invariably be traced to a contact infection. Typhus fever is transferred by insects, and the experience of Mexico and England with this disease shows that infection by air does not occur in hospital. By a study of conditions in Providence, Chapin found that scarlet fever and diphtheria are not air-borne from family to family in the same dwelling. An identical opinion has been reached by independent observers in other parts of the United States as well as in France and England. Finally it would seem that it has been definitely proven that air is practically a negligible factor in the transmission of all the contagious diseases except measles, whooping-cough, smallpox, chickenpox, and rubella. In regard to these opinion is still divided.

## Alcoholism and Tuberculosis.

Within the memory of most of us alcohol was considered the natural enemy of tuberculosis. A barrel of whiskey, a barrel of cod liver oil, and a life on the open plain was an old fashioned cure for consumption. But the evidence accumulates that the advocates of alcohol were mistaken in their views. In a recent paper Dr. Jacques Bertillon, Chief of the Bureau of Municipal Statistics in Paris, gave it as his opinion that alcohol may be called the principle cause of phthisis. In support of this contention he cites the mortality statistics of 100,000 men of all ages (England, 1900-02), which show the death rate from phthisis to be twice as great among innkeepers as among shopkeepers. Innkeepers he considers to be professional alcoholics, whereas other shopkeepers are not: *ergo,* alcohol causes the phthisis in England! Again he says that all France is divided in two sections—that north of the river Loire where the grape vine does not thrive and where the favorite beverages are cider and beer. There much alcohol is consumed and phthisis is of very frequent occurrence. The other section of France is south of the Loire and

here the grape thrives and the principal beverage is claret. Here phthisis is of rare occurrence. So he considers that in France the distribution of phthisis bears an inverse relation to the prevalence of light wine drinking habits as contrasted with the custom of imbibing the stronger alcoholic beverages. While the argument in the particular instance seems to be a little far fetched, the general principle is fairly universally now admitted that tuberculosis in common with all other diseases develops most rapidly in those whose constitutions are weakened by excessive indulgence in alcoholic beverages.

### Hospital Noise.

The importance of maintaining quiet in the wards and halls of the hospital is so obvious that one may be surprised that any comment upon it nowadays is at all necessary. Yet there is no hospital in which the ideal of quiet is attained. Apart from the unavoidable noise emanating from the patients themselves there are a large number of sources of noise that may be effectively controlled. Not sufficient effort is made to enforce upon the medical and nursing staff the importance of carrying on all conversation in a whisper, of moving noiselessly through the wards and other parts of the hospital building, and of supervising the removal of patients as from the wards to the operating room, or vice versa, in such manner that the least amount of noise is created. There is no reason why the same quiet that is maintained in the reading rooms of public libraries should not also be observed in the hospital. The harsh ring of the electric bell is one of the constant sources of annoyance to patients. The substitution of the buzz for the ring, or even the entire elimination of the bell by the introduction of a system of flash signals, would be a vast improvement over the present system.

## News of the Week.

**To Revise Health Laws.**—Governor Sulzer of New York recently announced the appointment of a commission of eight persons who will make an investigation of the health conditions in this State, with the view of recommending changes in the public health law and methods by which epidemics of disease prevalent in some portions of the State may be stamped out. The commission will also probably be called upon to advise the Governor in the selection of a State Commissioner of Health to succeed Dr. Eugene H. Porter, whose term of office expired on January 1. The members of the commission are Dr. Hermann M. Biggs, New York, chairman; Mr. Homer Folks, New York, secretary; Mr. John Kingsbury, Yonkers, assistant secretary; Dr. Edward R. Baldwin, Saranac Lake; Mr. Ansley Wilcox, Buffalo; Miss Adelaide Nutting, New York; Dr. John C. Otis, Poughkeepsie, and Dr. W. E. Milbank, Albany. The Governor quotes the statistics of 1911, which show that during that year there were in the State a total of 145,338 deaths, of which 14,179 were due to pulmonary tuberculosis and 1,310 to typhoid fever, as proof that the health laws require change. The recommendations of the committee will be transmitted to the Legislature by the Governor in a special message.

**The Board of Food and Drug Inspection.**—Willard D. Bigelow, Ph. D., has been appointed a member of the board of food and drug inspection, filling the vacancy on the board caused by the retirement of R. E. Doolittle, the recent acting chief of the bureau. The other members of the board are Dr. Carl L. Alsberg, chairman, and A. S. Mitchell, formerly chief of the St. Paul food and drug laboratory. The board of food and drug inspection has the function of weighing the evidence presented against foods and drugs collected by inspectors and investigators of the bureau, and of considering the arguments of the manufacturer.

**Immigration of Insane and Defectives.**—The following resolutions regarding the exclusion of insane and mentally defective immigrants have been sent to the Hon. Henry Cabot Lodge, chairman of the Senate Committee on Immigration, and to the Hon. John L. Burnett, chairman of the House Committee on Immigration and Naturalization, by the members of a conference of alienists and social workers which met in New York City on November 16, 1912. After several preambles rehearsing the evils resulting from the admission of insane immigrants it was resolved that the members of the conference urge upon Congress the necessity of providing facilities for the adequate examination of immigrants for mental diseases and defects, and also urge the enactment of the following amendments to the present immigration laws: (1) A provision making it an offense, punishable by a fine of not less than $100, for transportation companies to bring to this country any insane or mentally defective immigrants, whose condition could have been detected by a competent medical examination at the time of foreign embarkation. (2) A provision authorizing the detail of commissioned medical officers of the United States Public Health Service to any vessels bringing immigrants to the United States, such medical officers being required to examine immigrants, with special reference to their mental condition, on the voyage to this country, and being empowered to see that the provisions of the "passenger act," which apply to the care and to the safety of immigrants at sea, are enforced. (3) A provision requiring that a sufficient number of commissioned medical officers of the United States Public Health Service, with especial training and experience in the detection of insanity and mental defectiveness, shall be detailed for duty at Ellis Island at all times, and that at least one such medical officer shall be detailed at every other large port of entry. (4) A provision requiring that medical officers engaged in the mental examination of immigrants shall be provided at all times with the necessary facilities for the detention and examination of immigrants, including the exclusive services of interpreters. (5) A provision requiring that insane or mentally defective aliens, who gain admission to the United States in violation of law, or who become a public charge within five years, shall be deported, unless it is shown that their mental disease or defect was due to causes arising subsequent to their landing in this country. (6) A provision requiring that suitable attendants of the same sex shall accompany insane or mentally defective aliens who are being deported from this country in all cases in which it is certified by a medical officer of the United States Public Health Service or by the chief medical officer of an institution in which such aliens are confined that their mental or physical condition is such as to require personal care and attendance, and also requiring that the attendance provided shall be for the final destination of each such alient deported. It was further resolved that the members of the conference express themselves in favor of

any measures which will make it possible to conduct a medical examination of immigrants at ports of foreign embarkation.

**Need for Surgical Instruments.**—The American Board of Commissioners for Foreign Missions, which conducts extensive medical work in Turkey, India, China, Africa, and the Islands of the Far East, appeals to the surgeons of the United States for their discarded but serviceable surgical instruments. Instruments of this sort, never used because they have been displaced by more modern forms, are in the possession of almost every practitioner, and would be of immeasurable value to those physicians who are out beyond the frontiers of civilization, striving under most hampering conditions to meet the medical and surgical needs of people who would otherwise have no modern aid whatever. If given to the American Board such instruments would at once be sent to places where the need is greatest and would be put into immediate service. They would be gladly received for distribution by any of the following: John G. Hosmer, 14 Beacon street, Boston; Edward Lincoln Smith, D. D., Fourth avenue and Twenty-second street, New York; A. N. Hitchcock, D. D., 19 South LaSalle street, Chicago; H. M. Tenney, D. D., Mechanics' Bank Building, San Francisco.

**Russian Dentists Jailed.**—An interesting trial involving fraud in connection with the obtaining of dentists' certificates in Moscow, Russia, was concluded recently with the sentencing of a number of Jewish dentists to spend a year each in prison. Until a short time ago the Jews in Moscow were allowed to practise dentistry after serving an apprenticeship, various other much coveted privileges also being granted to the dentists, but this procedure was abandoned and a diploma from the University of Moscow was made a requirement for a license. A fraudulent scheme was then inaugurated by which the Jews could obtain certificates dated back before the holding of a diploma was made necessary, and the uncovering of this fraud resulted in the arrest of over five hundred persons and the final conviction of two hundred and one dentists and nine physicians and officials who had aided in the scheme.

**Riot over Doctor.**—In the village of Roccagorga near Rome, Italy, two persons were killed and four wounded in a riot on January 6, following a demonstration in the town against a physician who was accused of neglecting his poor patients in favor of those who would pay him large fees. Such conduct, evidently regarded by the simple villagers as most unusual and improper, caused bitter feeling, and a parade of protest was organized. A clash between the paraders and the soldiers followed with fatal results. In the midst of the excitement the population of the town was decreased by the quiet departure of the physician.

**Mary Putnam Jacobi Fellowship.** — The Women's Medical Association of New York City offers the Mary Putnam Jacobi Fellowship of $800 available for post-graduate study, which is open to any woman graduate of medicine and is awarded upon proof of ability and promise of success in the chosen line of work, not upon competitive examination. Applications for the next award, which will be made on June 1, to cover the year from October 1, 1913, to October 1, 1914, must be in the hands of the committee by the first of next April and must be accompanied by testimonials as to the health, ability, character, and educational qualifications of the applicant, as well as a statement of the work in which she proposes to engage and of work she has already done. All communications may be addressed to Dr. Emily Lewi, chairman, 35 Mt. Morris Park W., New York.

**Congress for Physiotherapy.**—The Fourth International Congress for Physiotherapy will be held in Berlin from March 26 to 30, 1913, under the protection of Prince August Wilhelm of Prussia and the presidency of Prof. Dr. His and of Prof. Dr. Brieger of Berlin. The work of the congress will be conducted under four heads: I. Hydrotherapy, thallassotherapy, balneotherapy, and climatotherapy. II. Electrotherapy and radiotherapy. III. Kinesitherapy. IV. Diathetics. American physicians proposing to attend the congress should communicate promptly with the chairman of the American members of the Permanent Committee, Dr. G. Betton Massey, 903 Professional Building, Philadelphia.

**Information Regarding Clinics.**—A Bureau of Information has been opened at the New York Academy of Medicine, under the direction of The Society for the Advancement of Clinical Study in New York, the object of which is to furnish to visitors and to the local profession information on medical subjects, so as to make use of the large clinical opportunities that are always here. Medical men of New York and Brooklyn are requested to furnish the bureau with information regarding such of their clinical work as they are willing any physician should see. Information as to autopsies, laboratory demonstrations, lectures, medical clinics, and operations is desired. An attendant in charge of the bureau will be at the Academy daily after nine o'clock, for the express purpose of receiving all information, and promptly posting the same on a special bulletin board. The attendant is ready to give every assistance in furnishing information.

**City Deaths.**—For the week ending January 4, the deaths in New York City numbered 1,519, an increase of 114 as compared with the same week a year ago.

**Low Death Rate.**—East Orange, N. J., which has enjoyed the distinction of being the healthiest town in the United States, has taken another point off its annual death rate, bringing it down to 8.21.

**Infant Death Rate.**—During the year 1912, the infant mortality in New York City decreased 6 per cent., the total number of deaths being 14,289 as compared with 15,053 in 1911. At the same time the number of births increased by 1,081.

**Personals.**—Dr Archibald L. Muirhead, professor of physiology and pharmacology in the John A. Creighton Medical College of Omaha, Neb., has recently been appointed dean of the college to succeed Dr. Dewitt C. Bryant, resigned.

On January 11, the Senate confirmed the nomination of Brigadier-General George H. Torney to be Surgeon-General of the United States Army.

**Surgeon Held Liable.**—In the Supreme Court of New York on January 10, damages amounting to $11,700 were awarded by a jury to a woman patient who had sued a physician of Old Westbury, charging unskilful treatment for a fracture of the leg. The plaintiff was treated for injuries received in an automobile accident, and she contended that the failure to use the *x*-rays and to place the fractured bones properly were acts of negligence for which the physician was responsible.

**Northern Medical Society.**—A meeting of this Society will be held at 12 Mt. Morris Park West,

New York, on Monday, January 20, 8.45 P. M., at which the following papers will be read: Dr. Alexander Goldman, "A Plea for Early Operation in Abdominal Cases"; Dr. A. L. Soresi, "Unsatisfactory Coitus as a Cause of Neurasthenia and Other Disorders in Women." All members of the profession are cordially invited to attend.

**American Institute of Homeopathy.**—The next convention of this organization will be held in Denver, Col., in July, 1913.

**The New York Psychiatrical Society.**—At a recent meeting of this society the following officers were elected to serve during the ensuing year: *President,* Dr. Charles L. Dana; *Vice-President,* Dr. William L. Russell; *Secretary and Treasurer,* Dr. Swepson J. Brooks.

**Obituary Notes.**—Dr. Willard Ide Pierce of New York, professor of materia medica in the New York Homeopathic Medical College and Hospital, New York, from which institution he was graduated in 1891, a member of the American Institute of Homeopathy, the New York State Homeopathic Medical Society, and the New York Academy of Pathological Science, and for many years attending physician at the Flower Hospital, died at his home on January 8, aged 56 years.

Dr. Herbert W. Morehouse of Danville, Ill., a graduate of Rush Medical College, Chicago, in 1870, a member of the American Medical Association and of the Illinois State and Vermilion County Medical Societies, and for twenty-one years chief surgeon of the Wabash Railroad, died at his home of cancer of the esophagus, on December 21, aged 68 years.

Dr. Robert Young Rudicil of Trion, Ga., a graduate of the Medical College of the State of South Carolina, Charleston, in 1855, died at his home from pneumonia, on December 24, aged 80 years.

Dr. John Guerin of Chicago, Ill., a graduate of the Rush Medical College, Chicago, in 1866, and a member of the American Medical Association and the Illinois State and Cook County Medical Societies, and of the Board of Education of Chicago, died suddenly on a train near Memphis, Tenn., on January 2. Dr. Guerin had been in poor health for some time and was journeying to the South in the hope of receiving benefit.

Dr. L. Haines Crothers of Chester, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1899, and formerly a member of the surgical staff of the Chester Hospital, died at his home on January 2, aged 36 years.

Dr. John A. Burlington of Duryea, Pa., a graduate of the Baltimore Medical College in 1890, and a member of the Pennsylvania State and Luzerne County Medical Societies, died at his home on January 2, aged 55 years.

Dr. William Patch of Coleta, Ill., a graduate of the Western Reserve University, Medical Department, Cleveland, Ohio, in 1885, and a member of the American Medical Association and the Illinois State and Whiteside County Medical Societies, died in the Watertown State Hospital on December 26.

Dr. William M. Gross of Gillespie, Ill., a graduate of the College of Physicians and Surgeons, Keokuk, Iowa, in 1875, and a member of the Illinois State and Macoupin County Medical Societies, died at his home, on December 18, aged 70 years.

Dr. Ralph F. Sommerkamp of Philadelphia, Pa., a graduate of the Medico-Chirurgical College of Philadelphia in 1899, and a member of the Pennsylvania State and Philadelphia County Medical Societies and of the American Medical Association, died at his home, on December 23, aged 47 years.

Dr. Robert Bradler Welton of Brooklyn, N. Y., a graduate of the Harvard Medical School, Boston, in 1868, and a member of the New York State and Kings County Medical Societies and the Brooklyn Pathological Society, died at his home on January 7, aged 69 years.

Dr. Keran O'Brien of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1901, and a member of the New York State and Kings County Medical Societies, died at his home on January 6.

Dr. Royston Ford of Greenville, O., a graduate of the Cincinnati College of Medicine and Surgery in 1880, while in his automobile crossing the tracks of the Pittsburg-St. Louis Railroad, was struck by a freight train and instantly killed, on January 3, aged 66 years.

Dr. Robert Eddy Bell of Lowell, Mass., a graduate of the New York Medical College in 1883, a member of the American Medical Association and of the Massachusetts State and Middlesex County Medical Societies, and a volunteer surgeon in the United States Army during the Spanish War, died at his home on January 4, aged 52 years.

Dr. Edgar C. Syrett of West Springfield, Mass., a graduate of the University of Vermont College of Medicine, Burlington, in 1898, and chairman of the West Springfield Board of Health, died at his home on January 5, aged 40 years.

Dr. Waine Sims of Crosskeys, Ga., a graduate of the Reform Medical College of Georgia, Macon, in 1857, died at his home on January 3, aged 83 years.

Dr. Ben Kissinger Clifford of Denver, Col., a graduate of the Denver and Gross College of Medicine, Denver, in 1909, died at his home from Bright's disease, on December 29, aged 27 years.

Dr. N. G. Mothershead of Earlington, Ky., a graduate of the Hospital College of Medicine, Louisville, in 1879, died suddenly at his home on December 30, aged 68 years.

Dr. James H. Owsley, retired, of Sonora, Ky., died at his home after a short illness, on December 28, aged 74 years.

Dr. Thomas Spec Jones of Baton Rouge, La., a graduate of the Pennsylvania Medical College, Gettysburg, in 1848, died suddenly at his home on December 31, aged 85 years.

Dr. James Bosley of Baltimore, Md., a graduate of the University of Virginia, Department of Medicine, Charlottesville, in 1874, a member of the American Medical Association, the Maryland State and Baltimore City Medical Societies, and the Maryland Psychiatric Society, and Commissioner of Health of the City of Baltimore, died at his home after a short illness on January 5.

Dr. A. T. Henton of Bloomington, Ill., died at his home on January 6, aged 64 years.

Dr. Franklin G. Humiston of East Jaffrey, N. H., a graduate of the University of Pennsylvania, Department of Medicine, in 1886, and a member of the New Hampshire State and Cheshire County Medical Societies, died at the Eliot Hospital, Boston, on December 30, aged 57 years.

Mr. Ewen McIntyre, said to be the oldest pharmacist in New York City and the oldest living graduate of the College of Pharmacy, of which he was for many years president, died at his home on January 9, aged 88 years.

# Correspondence.

## INFLATION OF STATISTICS.

To the Editor of the Medical Record:

Sir:—I have read the letter in your journal of January 11 by Dr. Herman B. Sheffield, complaining of the "Inflation of Statistics" as emphasized by a recent publication of mine on Primary Splenomegaly. The facts are so inconsistent with his contentions that I feel constrained to lay them before you.

On November 4, 1911, Dr. Sheffield recorded two cases in the Medical Record under the caption of "Primary Splenohepatomegaly in Brother and Sister." Until the last paragraph is reached there is no suggestion in the article that these cases may belong to the group of Primary Splenomegaly as described by Gaucher. Indeed, Dr. Sheffield closes his article, after having received an intimation from an eminent consultant as to the nature of the disease, as follows: "Disappointed in the diagnosis as well as treatment, I directed the mother to go with the child to the country."

So, as far as the literature is concerned, Dr. Sheffield's report adds no case to the small list of those which have been recorded and proven. This same case was, however, recognized and described by Dr. Mark S. Reuben as a case of "Splenomegaly (Gaucher)," in the *American Journal of Diseases of Children*, January, 1912. The patient subsequently was admitted to Mount Sinai Hospital, was operated upon by Dr. J. Wiener, died, and an autopsy was performed at the hospital, definitely establishing the diagnosis anatomically and histologically.

Reference to my article in *The Journal of Experimental Medicine*, Vol. XVI, No. 6, will show that I have included in my report, which represents entirely a pathological study of the disease, only such cases as have been shown anatomically to belong to the Gaucher type. A perusal of Dr. Sheffield's report discloses that Dr. Flexner called his attention to a previous paper by Drs. Brill, Mandlebaum, and Libman, and in referring to this fact, he states that our cases "bear a close resemblance to those under consideration." This is the only reference in Dr. Sheffield's report to the Gaucher type of splenomegaly. For obvious reasons, therefore, no reference was made to his report, though I was thoroughly familiar with it.

It is, however, solely in a scientific interest that I write to you. Far from desiring to "inflate statistics" my desire to do the reverse is specifically stated in my paper now under criticism by Dr. Sheffield. This particular case is now recorded in literature as primary splenomegaly of the Gaucher type but *once*, clinically by Dr. Reuben, anatomically by me. And I have credited Dr. Reuben with the case because he distinctly and specifically described it as a case of Splenomegaly (Gaucher).

F. S. Mandlebaum, M.D.

New York.

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## OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE—DISSENTIENTS—INTESTINAL STASIS—TROPICAL EXPEDITION—KING EDWARD'S HOSPITAL FUND—OBITUARY.

London, Dec. 27, 1912.

Christmas week brings no peace and good will in the profession. As far as the insurance question is concerned, the dissension is acute, and Mr. Lloyd George may plume himself on having divided his opponents. The voting conducted by the B. M. A. showed an overwhelming majority for refusing to work the Act, but the minority broke away, organized itself, and is ready to take service under the State. The socialists are, of course, delighted, and their organs in the public press are repeating abuse and insult on the profession which hesitates to sell its independence. So-called liberal papers are following the lead of the extremists, although they can scarcely help seeing that it is in direct contradiction to their traditional policy of individual freedom. The B. M. A. is now committed to a scheme of its own which will ensure freedom for both the profession and the public and can be worked by local committees. But the government is forming its panels in some places and making great efforts to do so in others. Where they fail they declare they will adopt other means to give medical attendance to insured persons, and they have no doubt they can get whole-time doctors to fill their panels and threaten to introduce such practitioners, allowing them also to compete for private practice. Such is the spirit with which the fight is to be fought. In some places the panels are already practically filled; in others there seems little chance of this being done—certainly for some time—but with an active hostile minority it is not easy to forecast the probable end, which begins to look like a reorganization of the profession being accomplished. The B. M. A. made a mistake in consenting to a conference with the chancellor. It was certain that the deputation could not deal with so domineering a man, who had the power of the sovereign behind him as well as long experience in confusing issues in various controversies.

"Chronic Intestinal Stasis" was the title of a paper read by Mr. Arbuthnot Lane at the Medical Society of London, and which led to an interesting discussion extending over two evenings. Mr. Lane included in the tour any abnormal delay in the passage of the intestinal contents through any part of the gastrointestinal tract which results in the absorption of toxic materials in greater quantity than can be treated effectually by the organs whose function it is to convert them into products as innocuous as possible to the body tissues. Excess of these products, as of the poisons themselves, sets up changes in all the tissues—probably most of all in those organs whose business it is to convert or eliminate them, say the liver for conversion and the kidneys and skin for elimination. But the part taken by the thyroid, pituitary body, and the suprarenals may prove to be more important than our present information indicates. Operations on the drainage scheme have demonstrated the damage done by these poisons and the remarkable power of repair the tissues show when freed from them. Mr. Lane referred to Carrel's magnificent work, which shows the wisdom of attending to the drainage scheme of the body, and presents points of interest as to the growth of malignant disease. He holds that intestinal stasis results in autointoxication, which inhibits the capacity of the tissues to resist the entry of organisms such as those of tubercle and rheumatoid arthritis. So he adopts means to improve the drainage system, either mechanical or operative, and he reports excellent results—such as rapid disappearance of tubercular glandular masses from the abdomen after disconnection of the large bowel. Cases of pigmentation of the skin diagnosed

as Addison's disease by competent physicians have been rapidly restored in the same way. Bright's disease, cancer of the breast, or liver, or pancreas, he seems to regard as the products of the toxins of the stasis. The influence on the nervous system must naturally be very great, and he cited typical cases. Adenoma of the thyroid and exophthalmic goiter associated with symptoms of intestinal stasis had disappeared rapidly after removal of the large bowel. The site of absorption is not only the lower bowel, as too many have supposed since Metchnikoff said we should live longer if we had not one, which saying Mr. Lane said was tried, as evidenced by the improved health following its removal. But, he added, this does not show the chief absorption is from the colon; on the contrary, he places the bulk of it in the small intestine, but here it is secondary to that in the large. If the cecum did not become overloaded, the obstruction at the ileum would not occur, the contents would not get infected, and the other sequelæ follow. The extraordinary improvement which follows short-circuiting, or disconnection or removal of the lower bowel, is due largely to facilitation of the escape from the small intestine of its infected contents and of organisms which only grow in stagnant material. Mr. Lane said he had just returned from the United States, where he had found the subject was dealt with in a practical manner by the most progressive surgeons in the world.

Mr. H. G. Plummer related his experience of the post-mortem appearances in animals. In enteritis suppuration of the germs was always present or he regarded it as a cause. He found no relationship between cancer and obstruction or constipation. Dr. A. C. Jordan showed a number of lantern slides illustrating the relation between the duodenum and ileum in such cases of stasis as congestion, ulceration, and cicatrization of the duodenum; also the simple stasis of ileum, or that with a kink setting up the obstruction, or that set up by the appendix, and further, one showing the upright posture in the presence of such kink might cause obstruction. He found the duodenum the most sensitive part. A characteristic writhing of it was often seen by *x*-rays, with great difficulty in the passage through it of a bismuth meal. Liquid paraffin had abolished stasis in some cases for a time; so had rest in bed, as also in dilatation of the stomach. In both cases there was hypertrophy from undue effort to force the contents forward.

Dr. Carson said great advances had followed the use of *x*-rays and bismuth meals. It was difficult to distinguish kinks of ileum from appendicitis. In operations full exposure of the parts likely to be involved should be made. Mr. H. H. Sampson said at St. Peter's Hospital bacilluria was so often seen with signs of intestinal stasis that he regarded this as a prime factor, and he related good successes in intractable cases with subacute exacerbations, not that the stasis was the only cause, for pyelitis was often an underlying condition. Dr. Leslie, at first skeptical, became a convert to Mr. Lane's views six years ago as the result of a case of twelve years' duration, sinking rapidly, for whom he advised trial of the operation by Mr. Lane, which being done, recovery took place at once. Many cases since with *x*-ray proofs satisfy him that the operation will become universally accepted. Mr. P. Daniel did not think the bands found primary causes, but infection and reinfection of the gastrointestinal tract, and the effects described by Mr. Lane, might occur apart from stasis. If infection were got rid of the stasis would disappear. He differed also as to treatment, especially for arthritic cases, and behind that the case for stasis remained improved. Dr. F. J. Smith could not think mammary cancer due to intestinal stasis, nor even pyorrhea alveolaris. Adhesions were common in the post-mortem room, too common to be the cause of symptoms demanding operation. Dr. Jordan's radiograms must be compared with an equal number from normal persons. In some cases with toxemia and all usual treatment failed, appendicostomy might suffice.

Dr. E. B. Ward said in children delay was more harmful in the small than in the large bowel. In advanced tubercular arthritis he had seen short-circuiting effectual. One case of rheumatoid arthritis had been greatly benefited. In severe chronic constipation, intractable to both drugs and diet, the operation was not risky, and mostly effectual. Dr. von Ofenheim commented on the antagonism between the different groups of organisms met with in the bowels. He thought treatment should be based on that, but unfortunately we do not yet possess sufficient knowledge of these organisms. Nor are we able to acclimatize the beneficial strains of bacteria.

The Liverpool School of Tropical Medicine has despatched its thirtieth expedition. This, under Dr. Seidelin, goes to Jamaica. It is the second expedition of the school to that island, and has been promised cordial support by the king's government, as well as by that of Jamaica.

King Edward's Hospital Fund has experienced its first check in the steady rise of its amount for distribution, due to a fall in the income of £50,000. To meet the case a sum has been drawn from former fat years' accumulation—a method of making both ends meet which cannot go on.

Dr. Peter Redfern, M.D., (Lond.), F.R.C.S.E., D.Sc., formerly Regius Professor of Anatomy and Physiology of Queen's College, Belfast, died on December 22, aged ninety-one. He wrote on the nutrition of articular cartilages in 1850, and as late as 1897 on the development of bone and cartilage in the *Journal of Anatomy and Physiology*.

Dr. Siordet, M.D. (Lond.), F.R.C.P. (Lond.), died at Mentone, where he practised many years, on December 22, in his eighty-fourth year.

## OUR LETTER FROM CUBA.

(From Our Regular Correspondent.)

CUBAN ASSOCIATION OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY—BREAKFAST FOR SCHOOL CHILDREN—MONUMENT TO THE LATE DR. RIJO—CUBAN ASSOCIATION OF THE MEDICAL PRESS—THIRD CUBAN MEDICAL CONGRESS—MEDICAL MEN IN CONGRESS.

HAVANA, December 31, 1912.

THE Association of Ophthalmology and Oto-Laryngology of Cuba celebrated its second anniversary with a banquet at the "Carabanchel" on Dec. 29, the same being well attended. This medical society recently held its election of officers for the next year, with the following results: *President*, Dr. Emilio Martinez, Professor of Diseases of Ear, Nose and Throat in Havana; *Vice-President*, Dr. C. E. Finlay, Professor of Ophthalmology, Havana University; *Secretary*, Dr. J. M. Penichot; *Vice-Secretary*, Dr. E. R. Arrelano.

A wide and enthusiastic movement has been started in order to provide free breakfasts for poor

school children. About a thousand dollars has been obtained in the first week, and the *Figaro,* a well-known review, has offered to pay the expenses of one day each month. The problem is a big one, but it is hoped to obtain sufficient funds in order to give free breakfasts to all poor school children over the island.

The Cuban Association of the Medical Press has been recently formed through the cordial cooperation of all medical journalists in this city. The following officers have been elected for 1913: *President,* Dr. Juan Santos-Fernandez; *Vice-Presidents,* Drs. J. A. Presne and E. Nuñez; *Secretary,* Dr. J. F. Arteaga; *Vice-Secretary,* Dr. L. J. Cañizares; *Treasurer,* Dr. A. Gonzales Curquejo; *Vice-Treasurer,* Dr. Oscar Jaime. The association has a membership of over sixty.

In the city of Sancti-Spiritus the Municipal Council has voted a fund of $500 to open a public subscription in order to erect a monument to Dr. Rudesindo García Rijo, a famous philanthropist and medical man of that city, who was assassinated in his country home some months ago. Dr. García Rijo was a much beloved general practitioner and was very well known in our leading medical and social circles.

The third Cuban National Medical Congress, which will be held in the autumn of 1914, is about to commence its work. The Executive Committee is composed of the following officers: *President,* Dr. Gabriel Casuso; Dean of the Faculty of Medicine, Havana University; *Vice-Presidents,* Drs. F. Mendez Capote, J. Ortiz, José Guell, R. García Rijo, F. Sirven, and M. Weiss; *General Secretary,* Dr. Francisco M. Fernández; *Vice-Secretaries,* Drs. R. Nogueiras, A. Barreras, R. Perez Vento, and José de Cubas; *Treasurer,* Dr. G. Fernandez Abreu.

Several medical men have been recently elected to serve in the National Congress, and among them are the following: Pinar del Rio Province, Dr. A. Cabada and Dr. M. Gomez Rubie; Havana Province, Dr. Carlos Guas, Dr. Cecilio Acosta, and Dr. E. Porto; Matanzas Province, Dr. Francisco M. Fernandez; Las Villas Province, Dr. J. Mulkay, Dr. A. Calleja, Dr. Carlos Mendieta; Camaguey Province, Dr. J. R. Xiques, Dr. A. Hernandez, and Dr. Castillo; Oriente Province, Dr. J. Manduley. To the Senate have been elected Dr. E. Sanches Agramonte from Camaguey and Dr. Rubio from Pinar del Rio. Besides, Dr. Alfredo Carnot, a dentist, and Dr. A. Figueroa, a pharmacist, have also been elected to the Senate from Matanzas and Las Villas respectively, and Dr. J. Castillo, also a Doctor in Pharmacy from Camaguey, to the House of Representatives. With this large number of medical men in the Congress—about 20 per cent. of the total—measures of health and hygiene ought to receive respectful attention.

## OXIDATION IN CANCER.

To the Editor of the Medical Record:

Sir: Drs. Leo Loeb, McClurg, and Sweet publish in the *Interstate Medical Journal* the treatment of cancer by colloidal copper, thus producing fever or oxidation. Now, in the *Medical Council,* May, 1912, I stated any substance that would produce oxidation but not destroy normal tissue would overcome cancer. The above gentlemen have the same idea, and have proven my theory correct. (As a coincidence, they began the treatment of human cancer in May, 1912.) My formula is

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|---|---|
| Sod. chloridi | 2.00 |
| Pot. sulphatis | 0.070 |
| Sod. sulphatis | 0.063 |
| Cal. phos. | 0.075 |
| Magnesii phos. | 0.055 |
| Hemoglobin | 3.25 |
| Aquæ bullient. | 250. c.c. |

Dissolve the NaCl in boiling water, filtering when cool; add rest of salts and hemoglobin. This dose by mouth an hour to an hour and a half before meals, more often if case is severe (of course on an empty stomach). With this formula I have cured two cases, one scirrhus of right breast in 1907, the other one this summer, a cancerous sore at fourchette, with a small tumor in right abdominal region. The second case got well in a month; the ulcer at the fourchette scabbed over in a week.

Charles F. d'Artois Francis, M.D.
951 St. Marks Avenue, Brooklyn, N. Y.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*January 2, 1913.*

1. Orthopedic Principles for Use in General Practice. J. W. Sever.
2. Six Years' Treatment of Pulmonary Tuberculosis by the Class Method. N. K. Wood.
3. The Rôle of Ptosis in Gynecology. R. M. Green.
4. Marine Hospital, Berck-Sur-Mer, Principally for Crippled Children. The Largest Institution of Its Type in the World. D. C. McMurtrie.

**2. Treatment of Pulmonary Tuberculosis by Means of the Class Method.**—N. K. Wood states that the results with this method show that 72½ per cent. of the patients are living at the end of six years. The class system of treatment furnishes a means by which patients can be kept under observation for periods of one to five years. It cultivates in the patients a spirit of great faithfulness toward the treatment after discharge from the class, which is evidenced by their continuance of outdoor sleeping and their marked after-improvement. A large proportion, 57 per cent., of the cases have returned to useful occupations for an average of 26½ months; and in some cases the tuberculous processes have been arrested without the patient losing a day's work.

**3. Rôle of Ptosis in Gynecology.**—R. M. Green points out that the rôle of ptosis in gynecology is primarily in the production of pelvic displacements, secondarily in association with and as a result of intrinsic disease of the pelvic viscera. In the one case it is a cause, in the other a symptom. When the ptosis is primary it may be congenital, in subjects of a depraved general physique, or acquired either by static errors or as a result of the fatigue and trauma incident to life. In any event, it should be considered as a possible cause of gynecological symptoms, especially backache, and the proper measures should be adopted for its cure or relief.

### New York Medical Journal.

*January 4, 1913.*

1. The Doctor's Future. C. L. Dana.
2. National Medical Insurance as Affecting the Future of the Doctor. A. T. Bristow.
3. Cancer of the Uterus. H. J. Boldt.
4. A Contribution to the Study of Aphasia. A. Gordon.
5. An Unusual Indication of Cesarean Section. J. D. Whitall.
6. The Etiology of Rabies. F. Proescher.
7. Treatment of Hemorrhage by Means of Precipitated Blood Sera. G. H. A. Clowes and F. C. Busch.
8. Suspension Laryngoscopy. L. C. Kaempfer.
9. Infected Knee Joint. H. Shoemaker.
10. A Cheap and Efficient Electric Headlight. J. Wagner.

**1. The Doctor's Future.**—By C. L. Dana. (See Medical Record, December 21, 1912, page 1144.)

**2. The Doctor's Future and National Medical Insur-**

ance.—By A. T. Bristow. (See MEDICAL RECORD, December 21, 1912, page 1144.)

3. **Cancer of the Uterus.**—By H. J. Boldt. (See MEDICAL RECORD.)

4. **Aphasia.**—A. Gordon notes that not one special area alone is involved in the faculty of speech and in the various manifestations of the latter, but very probably several anatomical elements are concerned simultaneously, as the multiplicity of lesions ordinarily encountered in cases of aphasia is certainly striking. Marie's great merit consisted in calling attention to a chapter of pathological physiology which could no longer remain unchallenged. If Marie did not solve the question of localization of aphasia, he nevertheless demonstrated the necessity of looking for pathological data other than Broca's and Wernicke's areas.

7. **Blood Serum in the Treatment of Hemorrhage.**—G. H. A. Clowes and F. C. Busch emphasize the fact that blood serum is of considerable value in the treatment of all forms of hemorrhage due to low blood coagulability resulting from a diminished thrombin content. Human serum is in no wise superior to that of a variety of animals. Blood serum precipitated by means of a suitable mixture of acetone and ether is fully as effective as fresh serum, if not superior to it. Precipitated serum is freely soluble and possesses the advantage over fluid serum of being sterile, always available, and retaining indefinitely its capacity to stimulate coagulation of the blood. The product obtained from horse serum appears to yield more uniformly satisfactory results than that obtained from the sera of other animals, and exerts no deleterious effect. The determination of the rapidity with which sera and solutions of precipitated sera at comparable concentrations cause coagulation of citrated blood plasma affords a simple means of estimating the relative activity of the preparations in question, and consequently of standardizing precipitated sera for clinical purposes.

8. **Suspension Laryngoscopy.**—L. G. Kaempfer states that the two main points in favor of suspension laryngoscopy as a rational procedure are: first, the larynx is brought so near to the operator that manipulations are permitted that would be impossible with any other method of approach; second, the operator has both hands free with which to work instead of one as in all other methods. Another great advantage of suspension laryngoscopy is that secretions and blood tend to flow toward the pharyngeal roof which is the most dependent part. The opening of the larynx being in direct line of vision can easily be sponged free of blood and secretions. This enables the operator to make a longer and more thorough examination and to do more complete operations. He can, for instance, remove in one sitting small and not easily accessible growths or curette the larynx entirely free of tuberculous granulations.

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## Journal of the American Medical Association.

*January 4, 1913.*

1. Pancreatic Lymphangitis and Chronic Pancreatitis. J. B. Deaver.
2. Moderate Degrees of Pelvic Contraction and Their Obstetric Problems. F. E. Leavitt.
3. The Control of Typhoid Infection C. T. Nesbitt.
4. Unusual Exposure to Light Followed by Seborrheic Keratosis. D. W. Montgomery.
5. The Treatment of Dysentery Cases in State Institutions. H. A. Jones.
6. The Etiology of Unilateral Renal Hematuria. A. Randall.
7. The Influence of the Operation of Resection of the Kidney on the Function of the Organ. A Report of Experimental Work on Rabbits. J. H. Cunningham, Jr.
8. The Diagnosis and Indications for Operation in Early Hydronephrosis. H. Cabot.
9. The Function of the Ureterovesical Valve. An Experimental Study of the Feasibility of Ureteral Meatotomy in Human Beings. J. W. Draper and W. F. Braasch.
10. Three Cases of Family Dystrophy of the Hair and Nails. J. S. Eisenstaedt.
11. A Simple Method of Introducing the Purse-String Suture for Covering the Stump of the Appendix. C. H. Parkes.
12. Sarcoma of Left Frontal Lobe of Brain without Definite Symptoms Until Shortly Before Death. B. M. Randolph.
13. The Elimination of the Midwife. C. E. Ziegler.
14. Treatment of Dysentery Due to Infection with Entamœba Histolytica. W. E. Deeks.
15. A Note on the Cultivation of Malarial Plasmodia After the Method of Bass and Jones. C. H. Lavinder.
16. Paralysis Agitans in Negroes. C. W. Burr.
17. Hemophilia Treated by Human Blood Serum. A. H. Traver.
18. The Ruhemann Uricometer for Uric Acid Estimation. H. C. Bradley and E. Bunta.

1. **Pancreatic Lymphangitis and Chronic Pancreatitis.**—J. B. Deaver alludes to the frequency of pancreatic involvement in disease of the biliary tract. In ninety-nine cases of cholelithiasis operated on by him in 1911 there was some alteration of the pancreas in forty-five, and from this experience and that of others it would seem a natural inference that the pancreatic disease was secondary to the biliary disorder. There are certain objections, however, to this. Pancreatitis is more common in males and gallstone disease in females, though the anatomy and mechanism of the parts are identical in both. Again, the pancreas is often diseased without demonstrable disease in the biliary tract. This was the case in 36 per cent. of the cases of chronic pancreatitis and 25 per cent. of the acute cases in a series analyzed by the author. There are three other possible avenues of pancreatic infection: through the general circulation, by contiguity from adjoining tissues, and through the lymphatics. Infection through the systemic circulation is not often observed. It is rare in the systemic and pyemic processes and the conditions are not characteristic of bacteriemia. Infections by direct contiguity occur often in slowly perforating ulcers of the stomach and duodenum and the infection is then usually only local. It is to the lymphatics that one must look for the real source of pancreatic infection. Unlike certain other organs, the pancreas possesses no great hilum through which pass the blood-vessels and lymphatics. The lymphatics emerge through various points along its surface, and this accounts for the diffuse inflammation and irregular inflammatory swellings so often observed. This pancreatic lymphangitis (Arnsperger) is probably a forerunner of serious alterations in the parenchyma and stroma. When chronic pancreatitis has reached the stage of interlobular and intracinar fibrous deposits it is practically incurable, but in its incipiency, like lymphangitis elsewhere, it may be cured by the removal of the primary source of infection. The treatment is promising in the early stages, when it can be directed to the organs primarily involved. Pancreatitis is common and not rare; its presence should be suspected in all cases of obscure upper abdominal indigestion and, like other chronic inflammatory lesions of the abdomen, when it is uninfluenced in a reasonable length of time by medical measures it should receive surgical attention.

6. **Unilateral Renal Hematuria.**—A. Randall refers to the fact that in a majority of cases of unilateral renal hematuria nephritis with its concomitant congestion plays the leading rôle. In the second group the bleeding is from varicosities in the pelvis secondary to congestion resulting from certain of the extrinsic conditions. In a third group the hemorrhage is due to either rupture of a vessel or diapedesis of red blood-vessels, again secondary to congestion. While from the point of view of the patient who desires to be rid of this constant drain on the system, and from the point of view of the surgeon who is consulted, whatever the ultimate pathological condition is (and it may be one of a large category), the actual etiological factor causing the hematuria is a renal congestion, and this is most surely and successfully relieved by the performance of a nephrotomy.

8. **Hydronephrosis.**—H. Cabot defines hydronephrosis as a condition in which there exists a dilatation of the renal pelvis due to obstruction. It is this class of cases, not the advanced ones calling for nephrectomy, that he considers in his paper. The chief causes of obstruction are two: mobility of the kidney without corresponding

mobility of the ureter, and abnormalities of the renal vessels running to the lower pole of the kidney which are found in 2 to 4 per cent. of the cases. While some abnormality of the renal arteries has been shown to exist in about 25 per cent. of the cases, as has been pointed out by Kelly, these should be regarded as potential cases, becoming active only when the mobility of the kidney causes them to cut sharply across the pelvis. The symptoms in these early cases may suggest lithiasis, with or without abnormality of the urine, and, in rather rare cases, acute infection, but with persistently sterile urine. Diagnosis must be based first on convincing evidence of obstruction. Though this may be slight, the other possible causes of the symptoms must be excluded. Nothing of importance can be learned without the use of the cystoscope and ureteral catheter. The former alone is of little use, and ureteral catheterization will allow a positive diagnosis only after considerable dilatation has occurred. *X*-ray is of value only on the negative side. Pyelography is the mainstay of diagnosis. In this the important point is the question of the relation of the pelvis to its outlet. The ureter should leave the pelvis at its lowest point and not too abruptly. There should be proof that an obstruction of intermittent character exists to the outflow of urine from the pelvis, and that this obstruction is the cause of symptoms which are not caused by some other coexisting condition. Mere mobility of the kidney is wholly unimportant. In many of the cases, particularly those occurring on the left side and in strong muscular men, no mobility of the kidney can be demonstrated by ordinary methods. Convincing evidence can only be obtained by the radiogram taken after injection, the reproduction of the symptoms by the distention of the renal pelvis, and the exclusion of the other conditions which could cause the symptoms, chiefly, renal infections, renal calculus, and gallstones.

9. **The Ureterovesical Valve.**—J. W. Draper and W. F. Braash report the results and conclusions of a study of the function of the ureterovesical valve, with special reference to the question of the feasibility of ureteral meatotomy in human beings. The problem of safety of this operation resolves itself into the question whether there is special danger of hemorrhage or sepsis from accidental perforation of the bladder and whether its mechanical function will be so affected as to be dangerous to the patient. From the anatomy of the part they find these dangers minimized and practically negligible. The ill results of transplantation of the ureters into the bowel are attributed largely to the mechanical injury of the ureter and not to the destruction of the ureteral valve, the possibility of reflux being prevented much more by the ureter than by the obliquity of the valve itself. In experienced hands there is little or no danger in human beings from the operation of meatotomy through the operative cystoscope either as regards immediate hemorrhage or sepsis or as regards late results from injury to the kidney. The protection from reflux is affected at least as much by the physiological function of the ureter as by the check valve action at the meatus. These together, rather than the ureterovesical valve alone, constitute the "factor of safety" which prevents reflux. The ureter alone, almost without exception, sufficed experimentally to prevent reflux even if the ureterovesical valve had been destroyed. Section of the valve appeared to leave the protective ureteric function intact. The above data would confirm the opinion expressed by others that infections are seldom if ever ascending, but are rather hematogenous.

## The Lancet.

*December* 28, 1912.

1. A Short Review of Obstetrics and Gynecology, 1887-1912. E. Malins.
2. The Complete Removal of Pleural Effusions by the Regulation of Intrathoracic Pressure During Aspiration (Oxygen Replacement). H. M. Davies.
3. A Case of Empyema in an Infant Aged Five Weeks, with Operation and Recovery. F. G. Chandler.
4. Is Anatomical Description Sufficiently Constructive? W. C. Morton.

1. **Progress in Obstetrics and Gynecology.**—E. Malins notes that perhaps in no other direction has the modern advance in obstetrics been more strongly marked than in the explanation of puerperal infections. In 1901 the total number of certified deaths in England from puerperal fever was 478; in 1910 the number fell to 161. For the prevention of puerperal infection the author has taught the following rules: Vaginal examinations are very seldom necessary; the size and shape of the pelvis and the position and movements of the child in the great majority of cases can be determined by external examination; all tears should be repaired at once, all douches avoided, and, lastly, rubber gloves, kept for this purpose only, should be constantly used. Blundell was not far from speaking the truth when he said that "he is the best accoucheur who keeps his hands in his pockets." The operation of cesarean section represents another great advance in obstetrics. In 1870 this operation was looked upon as the last desperate resource for the mother, with scarcely any hope of saving the child. Ten years later the maternal mortality was 85 per cent. During the period from 1906 to 1910 inclusive the maternal mortality was 8.1 per cent. A large opportunity has been offered for the radical treatment of fibroid tumors of the uterus. It has been clearly demonstrated that these growths are liable to changes of a degenerative kind which affect their growth, structure, and function. Consequently there is a greater risk in adopting a passive attitude toward them than formerly believed. The remarkably successful results of early operative treatment have been attended with a record that bids fair to emulate the history of ovariotomy.

2. **Complete Removal of Pleural Effusions with Oxygen Replacements.**—H. M. Davies states that although paracentesis of the chest is such a common procedure it does not seem to be at all fully realized that the ordinary method of withdrawing the fluid by aspiration is most unsatisfactory. Aspiration in itself is not devoid of danger, and it is frequently the cause of considerable discomfort to the patient. It may be said, moreover, that as a general rule never more than 50 per cent. of the fluid present can be withdrawn at a single tapping; and when, therefore, aspiration is used for the purpose of getting rid of an effusion, so as to allow of an examination of the lung by radioscopy and radiography, it is practically useless. Symptoms of distress—*e.g.* cough and pain—often appear when only 1 or 1½ liters of fluid have been withdrawn, yet the desire to take out as much fluid as possible does not infrequently tempt the operator to continue the aspiration after these symptoms have first appeared, thereby increasing the risks of edema or of cardiac embarrassment. When one side of the chest is full of fluid the removal of 1,500 c.c. is regarded as most satisfactory, but skiagrams will show that there is still an astonishing amount of fluid left behind. As the chest is a closed chamber it is obvious that if fluid is withdrawn, either a rapidly increasing negative pressure must be produced or the fluid must be replaced by some other substance. In paracentesis both mechanisms are brought into play, but there is a limit to the rapid alteration in the position of the mediastinum and to the expansion of the lungs when these are the seat of fibrotic changes or are surrounded by a thickened or adherent pleura, and when the traction exerted on these by the increasing negative pressure exceeds a certain grade the symptoms of distress so constantly seen during paracentesis are produced. The clear recognition of these facts suggests that if it were possible, during the process of

withdrawing fluid, to modify the intrathoracic changes produced by the increasing negative pressure, by introducing from without some non-irritating sterile substitute, the whole of the fluid could be withdrawn. The most obvious substitute is air, but it is found that of the three principal gases of the atmosphere, oxygen when in contact with the pleura is absorbed rapidly, while the nitrogen and carbon dioxide are absorbed at a much slower rate. Since, however, it is desirable that the pneumothorax produced should be absorbed as quickly as possible, the author has used oxygen instead of air for the replacement of the fluid in all cases. Under local anesthesia a needle connected with an aspirating apparatus is introduced into the fluid in the eighth intercostal space in the midaxillary line, and a needle connected with an oxygen apparatus is introduced in the fifth intercostal space in the same line. When the needles have been introduced it is absolutely essential that the manometer connected with the upper needle should show respiratory movements, and until these movements are obtained no oxygen must be allowed to escape through the needle. Fluid is now aspirated from the chest and the aspiration is continued until the patient either coughs or experiences the slightest pain. The aspiration is then immediately stopped, and 50 to 100 c.c. of oxygen are allowed to run in slowly. The pain or cough will at once disappear, and the aspiration is continued until the recurrence of some symptom demands the introduction of more oxygen. This process is continued until no more fluid can be withdrawn. Toward the end of the process oxygen will be found to escape with the fluid, and the proportion of oxygen introduced to fluid withdrawn must be increased.

## British Medical Journal.

*December* 28, 1912.

1. The Preoperative Diagnosis of Appendicitis: Demonstration of a New Method by Dorsal Examination. W. Ewart.
2. Theories with Regard to Secondary Growths in Carcinoma of the Breast. M. Thorne.
3. Foreign Body in the Abdominal Cavity. L. B. Greene.

**1. Preoperative Diagnosis of Appendicitis.**—By W. Ewart. (See page 112.)

**2. Secondary Growths in Carcinoma of the Breast.**—M. Thorne presents an account of some of the theories that have been held from time to time with regard to the secondary growths of carcinoma of the breast. The embolic theory was the first to be advanced. According to this theory, cancer cells are carried by the blood stream from the primary growth to distant parts, where the cells are deposited, grow and multiply, and give rise to a tumor in all respects identical with that of the primary growth. This theory was a reasonable one. Sir James Paget suggested that cancer cells carried by the blood stream have a selective action with reference to the part to be attacked. Sir Watson Cheyne, in reviewing his cases, says that internal metastatic deposits are apparently more frequent now than formerly, due to the fact that patients escape local recurrence and live longer, and that thus the internal deposits have time to grow and attract attention. S. Handley, in his researches on cancer of the breast, quotes Goldmann's and Schmidt's work to show the degeneration which cancer cells undergo in the blood stream due to the inflammatory reaction set up by their presence, and thinks that the spread of cancer is due to the permeation of lymphatics by cancer cells. Handley, describing the spread of cancer in the parietes, says it occurs by the permeation of the lymphatic system like the spread of an invisible annular ringworm. The theory of infection, even of distal parts, by way of the lymphatics, commends itself strongly, but the question still is whether this is the only source of infection. G. L. Cheatle calls attention to the fact that there seems to be a certain relation between nerve supply and the growth of cancer, and that there seems a greater tendency for the disease to spread along the area of the particular nerve distribution in which it first occurred rather than independently into neighboring areas.

## Berliner klinische Wochenschrift.

*December* 23, 1912.

**On the Inheritance of Acquired Qualities.**—Meyer states the attitudes of Weismann and Semon on this subject. The former teachings as to parallel induction have recently received notable support from the experiments of Tower. Others had indeed shown that at certain stages of development heat and other forms of irritation had caused hereditary color changes in beetles and butterflies. Tower showed that experiments in the pupa stage alone resulted negatively; but if repeated at the periods of growth and maturity of the sexual cells the color alterations appeared in the progeny although not in the parents. Semon denied the claim that the action of the heat was confined to the germ cells alone, and asserted that the action upon the soma was latent. Semon has never gone very deeply into the inheritance of psychic characters, yet the human intellect appears to be the very best subject for study of the inheritance of acquired qualities. Semon admits that the subject is quite practicable. In this connection it may be mentioned that Przibram, having succeeded in taming some extremely wild grasshoppers which belong to the sphodromantes, their descendants in captivity showed an increasing disposition to tameness. The various excitabilities or "engrams" may also be modified by crossing or by "mendelizing" a strain of animals. The general tendency of all recent experiments is to show that the germ cells may be modified through the soma, much depending on the stage of development of the cells and the nature of the irritant. At the same time it is not desired that the germ cells may be directly stimulated by certain irritants, the soma being uninfluenced thereby.

**Therapy of Psychoneuroses.**—Vogt places under psychoneuroses neurasthenia, hysteria, hypochondria, psychasthenia, and certain cases of psychic degeneration and mild melancholia. All are characterized by absence of organic alterations and extreme subjective suffering. Failure of medical men to find lesions does not of course imply that somatic derangements do not exist. The treatment must be both bodily and mental. The psychic treatment must be regarded as causal, not symptomatic; we have to unravel the mental processes through which the mental states are produced and these processes do not much concern the intellect, for it is the affectivity which is disturbed in one or the other direction. This affectivity may be profoundly modified by a mere idea. The temper of the subject is naturally highly unstable and oscillating in character. A diagnosis must be made of the affect life and the emotional characteristics and the choice of treatment is regulated by the indications thereby furnished. The author repudiates the so-called intellectual method. All other methods, however unlike one another as they may appear, come under the head of suggestibility, whether produced by hypnotism or any mode whatever which overcomes the internal resistance. Here plain enlightenment, reasoning, and the like may cooperate in many cases, but not in the sense intended by advocates of the intellectual method. The greater the internal resistance the greater the probability that we shall have to overcome it eventually by hypnosis. The treatment is indeed educational but it is an education of the feelings.

**Paraldehyde Poisoning.**—Fornaco and Quarelli describe a case in detail. The drug was taken for insomnia, and patient had become addicted to its use so that the dosage was increased to almost incredible amounts. While taking it at the rate of over one pint a week a certain train of alarming symptoms developed for which he took a

single dose of nearly four ounces, and soon after was removed to the hospital half comatose and delirious. For the next eight days he lay in a condition exactly parallel with delirium tremens. A turn for the better occurred at the fifth day and by the tenth day he had become normal. As far as could be ascertained his recovery was permanent and he did not return to the habit. The picture of the intoxication was as follows: delirium, motor excitement (patient had one convulsion) escape of urine and feces, abundant diaphoresis, fever, thirst, etc. On the day of admission patient had to be restrained from jumping from the window. Of various measures tried the best appeared to be morphine hypodermics and pantopon internally.

## Münchener medizinische Wochenschrift.

*December* 24, 1912.

**Alimentary Angiorrhexis.**—Pick describes a form of acute acquired hemorrhagic diathesis of epidemic incidence. There were thirty-four patients, but one of whom was a female. All ages were involved and a number of occupations. There was some tendency to cumulation in certain houses. The author had opportunity of studying five cases in the clinic. The affection began for the most part *d'emblée* with pains in the legs which were followed by edema and extravasations of blood, especially marked about the knees. Naturally there was a suggestion of both peliosis rheumatica and Barlow's disease. Throughout, the affection was largely limited to the lower limbs. Involvement of the upper extremities was both inconstant and feeble. As the affection developed it became more and more localized about the knees, extending up the thighs and down the legs. The patients meanwhile took on an anemic and cachectic look much like that which accompanies true scurvy. The author cites Schönlein's original description of peliosis rheumatica in order to show that the two have little in common. There was no rheumatic element in his cases but a very pronounced scorbutus-like acquired hemorrhagic diathesis. To avoid the reproach of hastily postulating the existence of a new disease the author chooses to regard it as either a true scorbutus or Barlow's disease, since it partakes of the nature of both and also represents a transition form. An infectious element can be excluded, so that the etiology must be regarded as intimately bound up with the potash poor diet. The latter was notably poor in vegetables, and when it was corrected most of the patients showed marked improvement.

**Military Efficiency and Enteroptosis.**—Röder believes that enteroptotic subjects have a notable intolerance toward alcohol. The evidence comes to the front in the fact that when recruits admit or exhibit an alcohol intolerance they are found almost invariably to be enteroptotics; while *vice versa* the latter when questioned are found to be alcohol-intolerant. There should be certain criteria of enteroptosis. One of these is relatively low position of the navel. A normal relationship should exist between the stature and the distance between the superior sternal notch and navel. Another criterion consists of the fact that when a subject stands up he measures more about the waist than when lying down. Enteroptotics suffer from a variety of affections which impair their efficiency—cardiac anomalies, digestive disorders, headache, insomnia, moodiness. On a peace footing such subjects might well be rejected, on account of constant disabilities. The author is moved to ask whether or not enteroptosis solves, to a certain degree, the riddle of alcoholism. One person uses alcohol throughout life with relative immunity, while another quickly succumbs to its malign influence. In other words does enteroptosis as an expression of degeneracy, enable alcoholism to play the rôle of a decimating disease?

**For and Against Pituitrin.**—Rieck makes a short contribution to this subject. The good effects of the new remedy have received due heed so that whatever may be said of adverse significance will be timely. This, however, affects the status of the drug only in the individual case, for generalizations are not to be expected. The author relates a case of retained placenta following abortion, in the fourth month. In this case both ergotin and pituitrin failed to dilate the os, so that it was necessary to dilate artificially and use the curette. Now in this instance pituitrin was far from being inert, for it apparently contracted the cervix and thereby interfered with the normal course of delivery. This untoward result, however, is contrasted with one in which exhibition of pituitrin in a case of placenta previa did away with the usual procedure of rupture of membranes, metreurysis and tamponade with attendant risk of infection.

## Deutsche medizinische Wochenschrift.

*December* 26, 1912.

**General Infection with the Bacillus Pyocyaneus.**—Klieneberger relates the following case: male, aged 47, with long history of urinary lithiasis, and one operation of nephrotomy for stone. *X*-rays show that he still has renal calculi on both sides. Urine infected. Also has pulmonary symptoms—cough and purulent sputum. Upon admission to the hospital was found to have evidences of bronchopneumonia, with tubercle bacilli absent. Pneumococci were cultivated from the sputum. Under mild measures his chest findings improved greatly and he was out of bed, when he was suddenly stricken with a chill and other evidences of a toxemia. Fever over 40 deg. C. Blood smears were at once made and the *Bacillus pyocyaneus* was found to be present. After a series of chills at irregular intervals the symptoms ceased abruptly and he was left in good physical shape. The Widal reaction had been negative. Pneumococci still persisted in the sputum. The urine, which had originally contained staphylococci only was now rich in the *Bacillus pyocyaneus*. The latter germ was virulent to guinea pigs.

**Treatment of Mnemasthenia.**—Rauschberg concludes a serial article on this subject in part as follows. He refers naturally to idiopathic or neuropathic memory failure. There has never been a somatic treatment recommended for this condition. In acute severe cases patients should enter sanatoria, there to receive dietetic and physical treatment, the latter comprising head massage, galvanization, sinusoidal voltaization, the franklinic douche and hydrotherapy. Of internal remedies the author can only vouch for substances which contain phosphorus—glycerophosphates, hypophosphites, lecithin, and spermin. When there are evidences of general cerebrasthenia life in the country with farming and gardening or a moderate amount of sport in the open air are to be recommended. In mild but obstinate cases, mountain sojourn or seashore life, or a sea voyage may be tested.

**The Specific Treatment of Tuberculosis.**—Levy refers incidentally to the Friedmann method of immunizing with nonvirulent living cultures. The use of dead cultures is already held by many to be insufficient for cure, despite its advocacy by Koch. Both living and dead cultures possess advantages and disadvantages. It has been sought to make use of dying cultures which in a measure combine the qualities of the living and the dead bacilli. The slow death of the cultures is effected artificially by chemically indifferent substances. The author holds that the specific treatment of the future must consist of active immunization, but that the latter should be regarded as only relative and temporary. After from six to twelve months the resistance which has developed should begin to decline, and should be developed anew, as in the case of revaccination for smallpox. The idea must be paramount that we are to set up an artificial vaccination-tuberculosis which will protect the patient for a time from the natural disease.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### THE APPLICATION FOR INSURANCE.

The application blank is usually divided into three parts, namely, the application for insurance to be signed by the applicant and witnessed by the agent, the statements to the medical examiner to be signed by the applicant and witnessed by the examiner, and the medical report of the physical examination by the examiner. As the applicant only takes a passive part in the report of the physical examination, no further reference to it will appear in the discussion of this subject. The statements in the application and the statements to the medical examiner, however, constitute a declaration which forms the basis of a proposed contract for insurance. As the transaction is conducted for the purpose of making this an actual binding contract, the blanks are made as brief and definite as possible, but comprehensive enough to preclude any justification for the omission or distortion of relevant information. In order that the legality of the proceeding may be strictly observed it is imperative to have every question in the blank fully, clearly, and truthfully answered, to avoid striking out printed words, and making erasures, and to refrain from the employment of dashes, lines, ditto marks or any other mark in the place of written answers. If any change is demanded in the written answers, a line must be drawn through the part to be altered and the change must be attested by the initials of the applicant with the date of the attestation affixed. Even with these precautions faithfully followed, a company will have a hard struggle to secure a favorable judgment in a suit instigated in the case of fraud.

Under the older laws applicants for life insurance were required to warrant the truth of all statements made by them in the application and to the medical examiners. Any misstatement of fact, whether material or not, was held under the law of warranty to give the company legal grounds upon which to avoid payment. These were harsh provisions and were created through a feeling of defenselessness against fraud at a time when the companies were in their youth, with meager facilities for investigation and inspection of risks. No reliable company, however, took advantage of this right unless intolerable fraud was practiced. On the contrary, life insurance companies have been criticised, not for seeking to avoid the payment of just claims, but for too frequently paying claims which should have been resisted. Under the latest insurance laws, in a number of the states, all statements made by the applicant in the absence of fraud, are deemed to be representations and not warranties. The distinction between these terms is that a warranted statement must be true regardless of materiality, while a representation need only be true substantially in all matters material to the risk. According to these recent laws no statement can avert or be used in defense of a claim unless it is contained in the written application. If any material statements therein are found to be untrue the contract according to its terms may become null and void.

It would seem, with well-defined laws, that the companies are amply protected. The truth is, however, that a company usually feels itself open to congratulations if it succeeds in getting a favorable verdict in a case even where there is glaring misrepresentation. Public sentiment, as reflected in the average jury, is too apt to regard the companies as immensely rich corporations and to ignore the fact that life insurance is effected by the money belonging entirely to the policyholders of the company and that the officers are merely managers, this being especially true in the case of the mutual and mixed companies and these companies write the great bulk of the life insurance. In consequence of this feeling the companies are compelled at times to pay unjust claims and the expense of litigation, every dollar of which must come out of the money belonging to innocent and honest policyholders. These losses will be largely prevented by straightforward, truthful and unreserved answers to the questions on the application blank.

In view of the preceding remarks it will be apparent that both the applicant and examiner should fully understand every phrase and term appearing in the application blank. In general experience it is found that a very small percentage of applicants take the trouble to inform themselves of the stipulations which are printed plainly on the blanks or to even read the photographed copy of the application which is usually attached to the policy. This is found to be true even with important business men and lawyers who scrutinize the terms of their usual business transactions with infinite care and yet who affix their signatures to applications for insurance with scarcely a glance at the contents.

*The Application.*—The duty of directing the attention of the applicant to the stipulations in the application, as well as having the questions properly answered, belongs to the agent, but the latter will rarely volunteer to elucidate restrictions or obligations of any sort which might cause hesitation or doubt in the mind of the former. The examiner will often be regarded in the light of an adviser by the applicant at the time of the examination, and a knowledge of the terms and their meaning will be found useful. The most important points to remember are as follows:

1—The usual stipulation that all the statements and answers in the application, and all those made to the company's medical examiner in continuation of the application are true and are offered to the company as an inducement to issue the proposed policy, which shall not take effect unless and until after the first premium shall have been paid during the continuation in good health of the applicant, and unless also the policy shall have been issued during the applicant's continuance in good health. The only exception to this condition is the issuance of a binding receipt which puts the insurance in force on the date of the said receipt, provided the application is subsequently approved and the policy issued.

2—The restrictions in regard to hazardous occupations or employments which are clearly set forth in the blanks.

3—The suicide clause, whereby it is understood and agreed that the risk will not be covered by the policy if death by suicide takes place within a stated period of time, whether the policyholder is sane or insane. It may be added here that it has been satisfactorily demonstrated from experience that sane persons will commit suicide when there is no suicide clause, so that their beneficiaries may collect the insurance. In other words, there is a consider-

ably greater mortality from deaths by suicide in the first few policy years when there is no restriction clause in the application.

4—War clause. Restrictions in reference to military and naval service during war have been removed from the applications and policies of many companies. This liberality was actuated by the experience of the companies during the civil and contemporaneous European wars, in which no disastrous results were encountered. Since then, however, a much larger proportion of the population has become accustomed to carry life insurance, and it is questioned in the minds of some whether the complete removal of the war clause would prove to be a wise procedure in the event of a prolonged and extensive war.

*The Statements to the Medical Examiner.*—The duty of seeing that all the statements of the applicant to the medical examiner are duly set forth in a form which will meet the legal requirements devolves upon the medical examiner. These requirements have been described and emphasized in the preceding lines. A carelessly framed report has fairly often proved costly to the companies. Misunderstandings and loopholes for the dodging of obligations will be largely prevented when the examiner insists on a frank, clearly defined, unreserved answer to every question and the avoidance of vague and ambiguous terms. Every question should be answered even when the information has already been given in another part of the application, as a repetition will do no harm, whereas some unanswered question often gives the desired chance to the acute lawyer to make a point against the company.

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**Simple and Exact Uranalysis.**—Lichtenstein calls attention to the great importance of thorough examination of the urine of applicants for life insurance. Uranalysis gives us knowledge of the condition of the genitourinary passages, of metabolism, of the work of the heart and blood vessels. The following things must be had by every insurance examiner: a good microscope, a centrifuge (hand, water, or electric), good fresh chemical reagents. The urine should be passed into two vessels, a small portion into the first and the rest into the second glass. The first glass shows the condition of the urethra; if urethritis is present, this glass contains pus and the urine may give reactions for albumin, even when filtered. The second glass is the important one to exclude such local conditions. The specific gravity should always be taken; it normally ranges between 1015 and 1020. Color should be noted. It should be yellowish, the urine being clear and transparent. Dark urine, which may contain bile pigments, gives yellow foam on shaking. To be sure of their existence pure nitric acid with admixture of fuming nitric acid should be used, the urine being layered over the reagent. A ring showing a play of colors—green, blue, violet, red, reddish yellow—forms at the junction of the two.

Litmus paper should be used to test reaction. Normal urine reacts faintly acid. After much vegetable food alkaline reaction may be noted. Occasionally, it is amphoteric. Constant alkalinity shows that fermentation is going on, which usually accompanies disease of bladder, ureter, or pelvis of the kidney. The following tables give a review of the tests that should follow:

| Urine cloudy. Upper portion of urine in test tube boiled. | | | |
|---|---|---|---|
| Cloudiness disappears | Cloudiness increases in the boiled portion | | Cloudiness does not change |
| | and remains on addition of acetic acid | and disappears on addition of acetic acid | |
| Signifies the presence of urates | Signifies pyuria | Signifies phosphaturia or "carbonaturia" | Signifies presence of mucin, bacteria or semen. Microscopic examination decides between these |
| | If cloudiness decreases but does not disappear pyuria and phosphaturia are present | | |

| Urine Clear. Upper Portion of Urine in Test Tube Boiled | | |
|---|---|---|
| The boiled urine becomes cloudy | The boiled portion remains clear | |
| and the cloudiness remains on addition of acetic acid | and the cloudiness disappears on addition of acetic acid | But becomes cloudy on addition of acetic acid |
| Signifies albuminuria | Signifies phosphaturia | Signifies albuminuria |

The urine should always be filtered before the following tests are carried out.

1. Albumin (a) Boiling test: A few centimeters of urine are placed in a test tube and its upper portion heated to boiling. Then acetic acid is added drop by drop. Increasing cloudiness means presence of albumin. (b) Layer test: Urine is layered over a few centimeters of pure nitric acid in an obliquely held test tube. In the presence of albumin a sharply defined milky "albumin ring" is formed at the junction of the two fluids. If the test is doubtful (c) McWilliam's solution (20 per cent. sulphosalicylic acid) is used. This solution is added drop by drop to a few centimeters of unboiled urine, and very definite cloudiness appears in the presence of albumin.

2. Sugar. Two methods are sufficient, but both should be used. (a) Nylander's reagent (½ to 1 cm.) is added to four or five centimeters of urine and the mixture is boiled. Black precipitate appears in the presence of sugar. (b) Three volumes of Haines' solution are added to one volume of urine and the mixture boiled. A yellowish red precipitate means the presence of sugar. Haines' reagent: Copper sulphate 2.0, distilled water 15.0, glycerin 15.0, 5 per cent. solution of potassium hydrate 150.0. This solution keeps for a long time.

The sediment must then be examined, leucocytes, epithelial cells, crystals, formed kidney elements, casts, etc., being carefully searched for. Examination with high, dry power should follow inspection of the sediment with a low power lens.—*Blätter für Vertrauensärzte der Lebensversicherung*, Vol. III, No. 4.

**Life Insurance of the Future.**—George W. Hopkins predicts a glowing future for life insurance. It will not be government insurance so long as the purchase of insurance is optional with the citizen, as it probably always will be. According to the author, the companies of the future will be mutual companies. "Investment insurance" will be abolished by compelling the companies to separate their savings, or investment business, from their insurance business.—*Medical Review of Reviews.*

# Book Reviews.

THE CARE OF THE SKIN AND HAIR. By WILLIAM ALLEN PUSEY, A.M., M.D. Professor of Dermatology in the University of Illinois. New York and London: D. Appleton and Company, 1912.

THE branch of medicine, commonly called cosmetic treatment, has so long been under the ban that it is a boon to those interested to find a book of this kind written by so eminent an authority as Dr. Pusey. The general purpose of the book is well expressed by the author in his preface in which he says that the skin and its commoner disorders are here considered from the standpoint of the intelligent person both because of the practical personal importance of these subjects "and as a part of one's general knowledge." The writer's aim, so well realized has been to present "a book chiefly on the hygiene of the skin, not a book on the self-treatment of skin diseases, and certainly not one to fasten the mischievous habit of self-medication." The text is "sane and interesting" and should be in the hands not only of the dermatologist but of the general practitioner. It is equally suitable for the layman who is anxious to know how to care for the skin. Among the subjects considered are the structure, nutrition, and functions of the skin; the care of the general health in relation to the skin; hygiene of the skin; diet, bathing, soaps, powders, creams; the care of the face; inflammation of the skin; disorders of the face such as acne and blackheads; certain defects in the skin; the structure and care of the hair, and certain of its disorders. The value of the book is enhanced by a good index.

THE CARE OF THE SKIN IN HEALTH. By W. ALLAN JAMIESON, M.D., F.R.C.P.E. Knight of Grace of St. John of Jerusalem. Surgeon The King's Body-guard for Scotland, The Royal Company of Archers. Consulting Physician for Diseases of the Skin, Edinburgh Royal Infirmary. London: Oxford University Press, 1912.

THE writer from his long experience in the study of diseases of the skin has been impressed with the fact that considerable ignorance obtains regarding the proper care of the skin in health. In this handbook he considers first the structure of the skin. This section is followed by one devoted to the care of the skin. The subject of bathing is treated in a most interesting manner. The writer sets forth the two purposes of the bath—cleansing and tonic action. The varying effects of the cold bath are pointed out. Friction alone can cleanse the skin and no soap except for the hands is advised for the morning ablution. Hot and warm baths are then considered. Final chapters deal with the care of the hair and nails, clothing, and diet. This little volume of 109 pages abounds in helpful suggestions and can scarcely fail to accomplish the purpose for which it was written.

MAKING GOOD ON PRIVATE DUTY. Practical Hints to Graduate Nurses. By HARRIET CAMP LOUNSBURY, R.N., President West Virginia State Nurses' Association; Sanitary School Inspector for Charleston Independent School District. "Not to be ministered unto, but to minister." Price, $1.00 net. Philadelphia & London: J. B. Lippincott Company.

IN spite of the continuous improvement in methods and change in technique, nevertheless the writer of this helpful volume realizes the need of counsel, help, and guidance felt by the young beginner in the nursing world. In these pages are presented many hints that are the fruit of experience not only of the author but of many other graduate nurses as well. Little or nothing commonly taught in the classroom is treated in the chapter on obstetrical nursing. Suggestions about the layette, the baby's bath, and a table for calculating the date of confinement are given. Not the least helpful suggestion is that concerning the tactful treatment of the family cook. Some of the topics considered in the thirteen chapters are the nurse and her patient, the nurse and the doctor, the nurse herself, the nurse and her patient's family, friends, and servants; general remarks on foods and feeding; why do nurses complain; the nurse as a teacher; convalescence; how shall a nurse occupy her days of waiting; bathing the baby; the valley of the shadow. The book is sure to prove useful, practical, and inspiring to nurses.

THE KALLIKAK FAMILY. A Study in Feeble-Mindedness. By HENRY HERBERT GODDARD, Ph.D., Director of the Research Laboratory of the Training School at Vineland, New Jersey, for Feeble-Minded Girls and Boys. Price, $1.50 net. New York: The Macmillan Company, 1912.

THE Vineland research laboratory has made a study of the families of more than 300 feeble-minded children by means of field workers. The results of this study show that 65 per cent. of these children have the hereditary taint. The "Kallikak" family was one of the families studied, and the book is a story of real people. It reveals a condition of things truly astounding, and illustrates the working of the Mendelian law as applied to human beings. The Kallikak family, says the author of the book, presents a natural experiment in heredity. A young man of good family becomes through two women the ancestor of two lines of descendants—the one characterized by thoroughly good, respectable, normal citizenship, with almost no exceptions; the other equally characterized by mental defect in every generation. On the good side were traced 496 people more or less prominent in all walks of life, without a single example of mental defect. On the bad side, 480 direct descendants were traced; and from marriage with other families 1,146 were recorded. Of the 480 descendants on the bad side 143 were feeble-minded, 36 illegitimate, 33 prostitutes, 24 drunkards, 3 epileptics, 3 criminals, 8 kept houses of prostitution, and 46 were reputed to be normal. Of the larger group (1,146) on the bad side, 262 were feeble-minded, 197 normal, the remainder undetermined. This carefully worked out analysis and painstaking study of a concrete example of the workings of the laws of heredity as related to feeble-mindedness, is highly praiseworthy, and raises the question of "What is to be done?" The author replies: "We cannot successfully cope with these conditions until we recognize feeble-mindedness and its hereditary nature, recognize it early, and take care of it." We recommend the story of the Kallikak Family to the careful consideration of both the medical and the lay reader. It is a story as interesting as a romance, written in a pleasing style. At the same time it is a real biography of people who have lived. It conveys a moral and a great lesson.

PATHFINDERS IN MEDICINE. By VICTOR ROBINSON. With a letter from Ernst Haeckel and an Introduction by Abraham Jacobi. Price, $2.50. New York: Medical Review of Reviews, 1912.

MR. VICTOR ROBINSON in this work has entered an almost untrodden field of literature. The poets of the great dead and gone physicians have been few and far between. The term poet is used advisedly with regard to Mr. Robinson's latest writing, for although it is not in verse the work in question is not the less poetry. Perhaps the most distinctive feature of the book is the language employed; the author has a fine choice of words and a happy knack of phrasing while at times he is shrewdly epigrammatic; indeed, he is amply endowed with what is usually termed the literary instinct. The roll of great physicians is a long one, so great and so long, in truth, that it must severely tax the discriminating faculties of an author to choose those most worthy of having the tale of their lives and deeds handed down to posterity. There are always in every calling some three or four who stand head and shoulders above their fellows, but after these giants there is a good deal of difficulty in selecting discreetly. While the author's selection of "pathfinders" on the whole is good, there are yet notable omissions, and one or two of those included can hardly be described as great pathfinders in medicine. For example, Pasteur assuredly merits a place in a list of the greatest pioneers of medicine, and to a lesser extent Harvey and Lister, and although Darwin was pre-eminent in science it was not in medical science that he shone so brightly. However, in spite of these and certain other blemishes in the work, Mr. Robinson has done the medical profession a good service by depicting this gallery of its noted members, and it is to be hoped that in the near future the author will add to the gallery and earn the further gratitude of medical readers.

DER PRIMÄRE LUNGENHERD BEI DER TUBERKULOSE DER KINDER. Von Dr. ANTON GHON. a. ö. Professor der pathologischen Anatomie an der deutschen Universität in Prag. Mit 72 Textabbildungen, 1 schwarzen und 1 farbigen Tafel. Price 8.50 marks ($2.15). Berlin und Wien: Urban & Schwarzenberg; New York: Rebman Company, 1912.

IN this monograph of 144 pages there is presented a review of the author's pathological experience in confirmation of Parrot's law, namely, that in children there occurs no pulmonary tuberculous affection without an accompanying affection of the neighboring bronchial lymph nodes; and vice versa, there is no tuberculous affection of the bronchial lymph nodes without an accompanying lesion in the lungs. The author's material consisted of 747 cases, certainly an ample number, from which valid inductions may be drawn. His conclusions confirm those previously announced by Küss and Albrecht.

# Society Reports.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held December 5, 1912.*

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

**Resolutions on a Commission to Report on the Waters of the Hot Springs of Arkansas.**—Dr. SIMON BARUCH presented this resolution, which was seconded and unanimously carried: *Whereas:* A bill has been introduced in Congress to authorize the appointment of a Commission to determine the physiological and therapeutic action of the hot water of the springs on the U. S. Reservation at Hot Springs, Arkansas, and *Whereas:* The waters of these springs have hitherto been used empirically with more or less success and it is important that their real therapeutic properties be ascertained with absolute impartiality, it is hereby *Resolved:* That the New York Academy of Medicine desires to express its approval of the Commission proposed and of any appropriation necessary for the conduct of its investigations. *Resolved:* That it is the sense of this Academy that the unbiased report of a Commission appointed under the auspices of the Surgeon-General of the United States Army may stimulate similar investigations of the numerous mineral springs in our country and diminish the annual exodus of health and recreation seekers to foreign lands by access to reliable information on the health-giving properties of the springs of the United States of America. *Resolved:* That a copy of these resolutions be transmitted to the Surgeon-General of the Army and to Medical Director Harry W. Hallock, in charge of the Hot Springs Reservation.

**A Discussion of Bone Transplantation (without Periosteum), with Lantern Slides of Cases and Experiments Showing the Necessity of Preserving the Periosteum.**—Dr. CLARENCE A. MCWILLIAMS presented this communication. He said that for a proper understanding of the subject it seemed advisable to review the conclusions reached by Axhausen, Macewen, and Murphy. To put it briefly Axhausen, in his classical work on this subject, claimed that the best results were obtained when living, autogenous, periosteum-covered transplants were used. Macewen held that the bone cells of the fully developed bone could produce new osteoblasts and so form new bone whether covered with periosteum or not. Murphy, in an article on "Bone Transplantation" in the *Journal of the American Medical Association*, April 6, 1912, concluded that the following laws should be followed if the best results were to be obtained from bone transplantation: (1) The periosteum fully detached from the bone and transplanted into a fatty or muscular tissue bed in the same individual, if he were young, might produce a lasting bone deposit; transplanted into another individual or animal of the same species and under the same conditions, rarely, if ever, produced a permanent bone deposit; transplanted into another species it never produced a permanent bone deposit. (2) Periosteal strips elevated at one end from the bone and attached at the other, if turned out into muscle or fat, reproduced regularly bone on their under surfaces for the greater portion of their entire length. (3) Transplanted into other individuals or animals of the same species and contacting at one end with exposed or freshened bone a graft rarely produced permanent bone even for a small extent of its basal attachment, and never produced bone for its full length. (4) Bone transplanted with its periosteum into muscle fat, etc., in the same individual, and free from bony contact practically always died and was absorbed, except in the case of very young children or infants. (5) Bone transplanted without its periosteum into muscular or fatty cellular tissue always died and was absorbed. (6) Bone with or without periosteum transplanted in the same individual and contacted with other living osteogenetic bone at one or both ends of the transplant always became united to the living fragment and acted as a scaffolding for the reproduction of new bone of the same size and shape as the transplanted fragment if asepsis was attained. (7) The transplanted fragment, no matter how large or how small, was always ultimately absorbed. The rôle it played was to give mechanical support to the capillaries and blood vessels with their living osteogenetic cells, as they advanced from the living bone at both ends of the transplanted fragment. Bony union and much support was given by the new growth long before the transplant was absorbed. Bone covered at the ends by cartilage and on the sides by periosteum, even when contacted with living bone denuded of its periosteum, died and was wholly absorbed. Dr. McWilliams thought that Dr. Murphy did not make it exactly clear in regard to the function of the periosteum in these grafts. From his investigations Macewen seemed to think that the periosteum was unnecessary. But in three cases out of four in which he himself had grafted bone without periosteum, the grafts had been absorbed and this taught him that the periosteum was important and should be included in the graft. If the periosteum was removed entirely no new bone formed to any extent, and the deformity in the bone persisted; if the periosteum was preserved the cavity filled up and the defect was corrected. Some periosteum should always be left in the site of the lesions to be corrected. While the graft must be in contact with living bone its subsequent life depended largely on its getting sufficient nourishment. One could never be quite sure that some of the cells in the graft did not die, and if there was periosteum these cells could be replaced from the inner osteogenetic layer. The question in his mind was whether success was not dependent on the blood supply. He had had the opportunity to experiment with animals in the surgical experimental laboratory of Cornell University and his observations had shown that a defect in bone could be corrected by a graft irrespective of periosteum. He had not done this on the human being and there was a question whether the same thing held true for human beings as for animals. If the filling of a gap in bone by a bony graft was dependent on the blood supply, then the smaller the graft the better would be the success. The three points to be especially emphasized in making a bone graft were avoidance of the Esmarck's bandage, avoidance of drainage, and the preservation of a rigid asepsis. Dr. McWilliams then described four cases in which he had made bone transplantations. In one of the first of these he had made a subperiosteal resection of four inches of a rib which he used to repair a defect in the half of a lower jaw in the same individual; the rib was sutured in place with chromatized gut and seemed as though it would live for a time, but disappeared entirely by the end of five months. The gap in the rib was filled in by a mass of fibrous tissue. This seemed to be in direct contradiction to Murphy's second conclusion. If the rib had been split longitudinally and half covered with periosteum the result would have been better. In the second case, in operating on an inguinal hernia, he had strengthened the hernia with a piece of rib. The *x*-ray, four months after the operation, showed that the rib had been entirely absorbed and that fibrous tissue was left which would materially strengthen the hernial repair. The third case was instructive, as it showed what should not be done. The patient was a man who had sustained a fracture of the humerus which refused to unite and in the course of a month two sequestra had separated. The fragments were freshened and a Lane's plate applied. Two months later the plate had to be removed because of a fistula. He then freshened the ends of the bone, inserted a portion of rib, and applied the Lane's plate, because the section of rib did not fit closely. Perfect primary union had followed and there was no sinus. The *x*-ray showed a growth of new bone from the fragments and the periosteum and the rib were not absorbed. He attributed this result to the fact that the rib was in an osteogenetic bed. A bone graft was better than a Lane's plate, since union of fragments did not take place at times because of lack of osteogenetic power, and a Lane's plate retarded rather than helped osteogenesis. The fourth case was that of a birth fracture of the tibia and fibula which had not united at the end of seventeen months, when Dr. McWilliams transplanted a piece from the other tibia. The graft was tightly wedged between the fragments in the medullary cavity, the lower part of the fragment being sutured with chromic gut. There was primary union. *X*-rays taken at times during the following six months showed the graft gradually disappearing. This was due to lack of periosteum or a deficient blood supply. He then did another operation, transplanting a piece of tibia covered with periosteum on three sides. This case seemed to contradict the first statement made by Dr. Murphy in his conclusions. Dr. McWilliams exhibited lantern slides showing the various stages in an operation by which a finger was transplanted to replace the nose in a man who had suffered an accident tearing off the nose from the frontal bone down. Following the plan of Finney and McGraw, he had placed the man in a plaste-of-Paris jacket with the hand in position for the operation the night previous. Not only was the entire bony structure of the nose gone but the soft parts as well, with the exception of a portion of the left nostril. At the operation the finger nail was removed and the phalanx scraped; this was sutured to the frontal bone.

The skin and flesh of the finger and the wound in the face were united. When circulation of the blood had been established, the finger was amputated under novocaine anesthesia and the first phalanx sutured to the face. The top of the last phalanx seemed to be solidly united to the frontal bone. The result was a very creditable nose, showing some irregularity at the lower portion which the speaker said he intended to correct later. The tendons had not been disturbed and were still in place. The experiments on dogs seemed at first sight to contradict the facts brought out in bone transplantation in human beings. He had transplanted sections of the rib into the muscular tissue of the abdomen of the same dog and the *x*-ray showed that the bone lived and grew if there was sufficient blood supply. A small graft stood a better chance of getting a sufficient blood supply than a larger one and was therefore more likely to continue to live. Of course it was possible that some osteoblasts might have been taken with the graft, but there was no way of finding this out. In one instance the periosteum of a corpse after being in cold storage for one hundred and sixty-eight hours produced new bone after transplantation, and after eight months there was not the slightest sign of absorption. Large grafts if broken into pieces would live in the soft parts if the blood supply was sufficient. A section of rib without periosteum could be grafted on another rib in a dog and would live, but a graft on a graft without periosteum would not live. The pathologist's report in regard to these grafts in dogs showed the presence of many osteoblasts and that new bone was being formed. This seemed to show that in dogs bone was formed from bone independent from periosteum, endosteum, or marrow. The new bone seemed to come from the cortex itself. This was due to the blood supply. If this happened in the dog, why not in the human being? He thought because the blood supply was insufficient and not because the bone was without periosteum. Perhaps the point might be made that if the periosteum was present the blood supply was apt to be more active. In summing up his observations, Dr. McWilliams said that in order that a bone graft might be successful it should be living and from the same individual; it should have wide contact with its new bed; if it was a small graft the periosteum might be disregarded; if it was larger the periosteum must be left; the periosteum survived because of the blood supply; the graft should be transplanted quickly in order that as few cells as possible should die; grafts from different species did not live because of serological differences, and usually grafts from different individuals of the same species suffered the same fate.

Dr. George E. Brewer said that this question of the repair of lost tissues in the bones of the extremities was a most important one, one of the most important that was being considered by the surgeons to-day. They all remembered the famous experiments of Dr. Phelps made twenty-five years ago in which he attempted to repair the tissues in the arm of a patient by engrafting part of the tibia of a dog. The proximal extremity was connected with the distal; this was carried on for weeks and the result was a failure. Dr. Murray had attached the skin of a pig to an individual who had lost much tissue because of a burn and this was also a failure. Both of these failures demonstrated what was now generally understood, that grafts from another species could not be successful. In the repair of these bone injuries certain questions were brought up: (1) Did we secure much from the little bone graft that had been transplanted? (2) Was the foreign body tolerated? (3) Was there a certain amount of new bone formation? The experimental work done showed that all three processes might take place. In the first place the question arose, could they obtain a living graft of bone? It was easy to assume that the graft was living if functionally it gave good results, but they should have autopsies, *x*-ray pictures, and demonstrations to prove this. Tuffier of Paris had transplanted the fibula to where the femur had been removed because of the existence of gangrene; the leg of this patient had been removed because of gangrene and the fibula was transplanted into the cleft left. Amputation was found to be required afterwards when it was seen that the union was fairly good and that the transplantated bone had not been entirely absorbed. In this instance they had a living graft. At the meeting of the Clinical Surgical Society of Paris many interesting reports were made. In one instance there was transplanted a portion of the fibula from a limb that had been amputated for sarcoma. The periosteal cuff of the bone he believed to be essential for its preservation. After a number of months the *x*-ray gave evidences of necrosis, but at the end of eighteen months the results of the operation were perfect. Another reported case was that in which there was an autogenous graft and there was not the slightest change to indicate necrosis, absorption, or rarification. At the end of one year the results were perfect. Dr. Brewer thought they could say after these experiences, as well as after a number of other experiences that had been reported, that they had every reason to believe that the autogenous graft, placed between the two fragment of bone where there was tissue that had been lost, could complete the graft without any following absorption of the tissues, without any deposition of new bone. Another case was recalled in which a patient lost the radius as the result of osteomyelitis. A portion of the ulna from the same arm was turned over on a hinge and fitted into the gap. When they could get a good blood supply in these cases the results were surprising. To obtain good and complete results it should be remembered that the periosteum should be kept intact and the bones should be approximated, periosteum to periosteum, cortex to cortex, and medulla to medulla, and then the bone graft would live and the parts unite. With regard to grafting bone from one individual to another, Dr. Brewer referred to a certain German surgeon who had done this and examined his case at autopsy; the result of this examination showed that not much was to be expected in these cases. The patient referred to had a sarcoma of the upper portion of the tibia and one-third of it had been removed. It seemed to the surgeon that this was a case requiring amputation. He made, however, a careful implantation with the wound healing primarily. The results in this case were apparently satisfactory. No irritation followed this procedure. At the end of nine months there was a recurrence of the sarcoma and the limb was removed. Multiple sections showed that the bone was covered with a complete periosteum and that the growth which was or had been introduced was absolutely dead. However, this graft remained in place without serious disturbances for nine months. One year ago he reported the case of a patient with a sarcoma at the lower end of the radius. From the *x*-ray it was shown that there only remained a shell. The tumor was removed and was found to be a mixed celled sarcoma and not a myeloma. The wound was closed. Within forty-eight hours a man was brought to the hospital because of a gun-shot wound and died. A portion of his radius, the same size and shape, was removed and transplanted. The patient was kept in splints for several weeks and left the hospital two months later in good condition. The *x*-ray at the end of one month showed no change in the bone; at the end of two months there was a slight rarefaction; at the end of three months a greater rarefaction. He was then lost sight of for six months. Nine months or more after the operation there was found to be a considerable amount of rarefaction, but there was a considerable amount of bony union, especially of the proximal extremity and surrounding the upper portion of the extremity. To-day the man was dispensing papers in his ordinary way. There was but slight evidence of motion at the junction of the fragments. The motion at the wrist was by no means perfect. Dr. Brewer believed in leaving the graft in place; foreign bodies in the arm would be tolerated by the tissues. Within one, two, or three years there might occur complete absorption and then a regeneration of bone might take place. One should not expect bone transplanted from one individual to another to become a living bone but only a foreign substance that was tolerated. He believed that it was, in obtaining successes in these cases, more a question of blood supply. It was also wrong to argue that what was obtained from animal experimentation should apply to the human being; they might have a living bone in animals but, under the same conditions, this would fail when applied to the human being.

Dr. Frank Hartley believed that but very little was known regarding the actual processes that were going on and in these instances of bone transplantation one should endeavor to make the graft as nearly like the normal bone as was possible, *i.e.* to take the periosteum along with the bone. One could not get the same results in experiments upon dogs as they could in their work upon the human subject. Macewen's work had been very accurately done and his conclusions were accepted by the general surgeon that they could take the graft from an animal, splitting the periosteum, implant it, and that it would grow. Bone-grafting was comparatively easy so long as they recognized the importance of asepsis. He believed that the essential thing in these cases was the maintenance of the blood supply and this could be better accomplished by leaving the periosteum attached to the bone. The best kind of bone graft was that of Dr. Fred Albee's, cutting a gutter out of the

bone in the medullary cavity and then simply mortising in, bringing the parts in good contact. There would be then a contact of the periosteum with the cortical substance and with the medullary canal.

Dr. Albert Ashton Berg said that he was specially interested in Dr. McWilliams' report as it had brought out the ideas of Macewen, *i.e.* that the bone could be grafted without periosteum attached. The history of these cases had showed what a tremendous and triumphal progress had been made in this work. The function of the periosteum had come more and more into its own. The periosteum was the most important part in transplantation of bone that was to be considered. A very important fact was that in the regeneration of bone certain rules should be followed such as were followed in the growth of bone in its early development in the fetus. Certain deposits were made in the fetus in the center of ossification which extended towards the periphery. At the point of ossification there was a deposition of bone cells which began at the cortex and went toward the center. This was preceded by sprouts which were lined by osteogenetic cells. The younger the animal, or the younger the individual, the more numerous were these osteogenetic cells. Therefore, any experimental work undertaken in young animals would show that the fragments were filled with these osteogenetic cells either in the substance of the bones or beneath. It might be that this applied to the old as well as the young animals. Dr. Berg said that he always endeavored to preserve the periosteum in making transplantations. He had transplanted sections the whole length of the tibia and, on one occasion, the entire humerus. He had much faith in the results of bone transplantation and believed that living, healthy bone would survive.

Dr. Frederic W. Bancroft said that it had been his good fortune to see a great deal of Dr. McWilliams' work and it had been most instructive. His results had been remarkably good. The question of bone growth was one that had bothered histologists and pathologists for years. As they all knew the skeleton was first formed in cartilage it was thought at one time that there was a direct transition of cartilage cells into bone cells. Later the pendulum swung the other way and it was decided that the cartilage cells were destroyed and new bone cells were built up in their places. This was at present the accepted theory, although those who were working in the laboratories admitted that it was a possibility for cartilage cells to turn into bone cells, both being of mesenchymal origin. Then, also the question arose, was it in reality a creator of bone, or did it simply furnish the blood supply to the peripheral bone and tend to conform its shape? During the past year he had been working upon bone repair in the laboratory of Experimental Research of Columbia University and he mentioned briefly some of the results obtained.

Dr. Fred H. Albee said he would like to emphasize some of the statements that had already been made and one was the reliability of the bone graft in the human being. He said he had made as many as 110 bone grafts and 85 of these were for Pott's disease of the spine. Eight were done for ununited fractures. The others were because of deformed feet, etc. With regard to animal experimentation, at the Cornell Medical College, he had been given the opportunity of working during the past two years. He was struck with the fact that these grafts could stand so well when sepsis appeared. Even when the wound became unavoidably septic in grafting the spinous processes there would come out later a sliver, it being sequestrated. In ununited fractures the results had been, in his experience, very gratifying, and he had in mind eight cases in which he had obtained perfect results. In regard to the periosteum he said he did not catch from what the reader of the paper said, whether it was attacked with the blunt or the sharp dissector. They should endeavor to get the osteogenetic cells with the periosteum; then the bone would grow rapidly. With regard to the blood supply he agreed with the statements made by Dr. McWilliams. He recalled one case which was seen seven weeks after implantation, where he found the graft firmly grown in. In another case four weeks after the implant was entered the patient was examined and it was found that it had slipped up and the ends of the bones were not in proper contact.

**Election of Officers.**—*President*, Dr. William M. Polk; *Vice-President*, Dr. L. Emmett Holt; *Trustee* (full term), Dr. John H. Huddleston; *Trustee* (unexpired term of two years), Dr. Wisner R. Townsend; *Recording Secretary*, Dr. Charles F. Adams; *Corresponding Secretary*, Dr. Egbert Le Fevre; *Member Committee on Admissions*, Dr. Linsey R. Williams; *Member Committee on Library*, Dr. Haven Emerson.

*Stated Meeting, Held December 19, 1912.*

The President, Dr. William M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Medicine.

**Resolution.**—This was presented by Dr. Linsey R. Williams, the incoming Chairman of the Section: *Whereas,* It is clearly shown that there is a wide divergence of opinion among physicians, hospital authorities, and nurses concerning the education and training of nurses and also concerning their duties, responsibilities, and status, and *Whereas,* The present system makes the training school also the nursing staff of the hospital, and therefore a peculiarly important factor in hospital administration, and the center of many interests other than educational, thereby causing confusion as to the purposes and functions of the school, and *Whereas,* It is of the highest public importance that the education of this large and necessary body of public servants be properly conducted, and that, for the public good, conditions be removed which are destructive of harmonious and efficient co-operation in this matter between hospitals, training schools, physicians, and nurses, Therefore be it *Resolved*, That this question be referred to the Council of the New York Academy of Medicine, urging that body to co-operate with other suitable agencies in bringing about a full investigation of the entire situation in order that the facts may be ascertained, presented and studied, and made to serve as a basis for remedying existing abuses, for defining and establishing the function of a training school, and for a better adjustment of relationship between training schools and hospitals.

**Some Problems of Nursing; a Plea for Grading.**—Dr. Henry Dwight Chapin read this paper. (See page 93.)

**Some Ways in Which the Hospital Training May Unfit the Nurse for Private Duty.**—Dr. Harlow Brooks read this paper, in which he first called attention to the growing prejudice against the trained nurse in many families and not exclusively those of the least intelligent classes. He said that he had sought to solve this problem, for to his mind this attitude was inexcusable and not justified by the personality of the average nurse. The fault did not lie inherently in the nurse, nor did he believe that it lay entirely with the dissatisfied family. It seemed that perhaps the fault might lie in the preparation of the nurse. One of the most frequent complaints was that the nurse made trouble with the servants or that the servants made trouble with the nurse. One woman had said to him that she could get plenty of trained nurses but that it was very difficult to get an efficient cook or chambermaid. She might have added that it was easier to get plenty of good doctors, for it seemed quite certain that this would be an easier task in New York than to fill the position of a really good cook. There could be no doubt but that nurses were too apt to forget these facts and as a result they might demand too much. One of the most primary qualifications of an efficient nurse in private practice was the ability to adapt herself to varying conditions and to carry out her important functions without producing jar and discord in the household. The hospital training as now conducted did not teach this. The nature of the nurse's work in the hospital was such that she must demand and receive attention and subservience in the wards from the orderlies, scrubwomen, and the like, without thought of their standpoint. The same methods could not be carried out in private practice. In the hospital the nurse was taught to be a commander; in the private family she must be a conciliator, a coaxer, and a consummate diplomat in her relations with the household personnel. Complaints were often registered even in the families of the wealthy that the nurse was wasteful in her use of alcohol, of disinfectants, of drugs, and of dressings. The doctors, themselves, who furnished these things in their offices, were likely to make this same complaint. This unfortunate trait was not due to inherent wastefulness, but was because the nurse was not taught to consider these things in the hospital. It was rare to find a nurse who was familiar with the cost of dressings or of the numerous accessories and conveniences of the sick room. More attention should be paid to instruction in these matters. In the hospital the nurses grew to look upon the patients as "cases," as problems, not as persons. In the private family the case was no longer a patient, but the mother, the son, the daughter, not only whose life, but whose pain and suffering, whose likes and dislikes, were matters of crucial importance. Did the hospital properly equip the nurse to assume this attitude? Perhaps it did if it had a private service, and some training schools had incorporated such a service into their course and their graduates had been

very satisfactory, especially in this important bearing. In private nursing it became necessary for the nurse to prepare articles of apparel or of food; this was true not only of the houses of the poor but also of the rich. It was impossible with the crowded curriculum to teach these things in the training school, but some other subjects might be dropped and these substituted. It would be preferable to have a nurse skilled in the preparation of a sick diet rather than in an intimate knowledge of bacteriology and physiology. There was still another way in which the hospital training might unfit a nurse for private work and in speaking of this he criticized himself and his professional brethren as well as the nurse. In the hospital it was right and proper that cases be discussed *pro* and *con* before the interne and students, that the diagnosis should be continually held in debate, that the treatment should be daily and pessimistically discussed, and that the prognosis should be frankly considered, but nothing more calamitous could be imagined than that the nurse or doctor should enter the private sick room as he or she would enter the public ward and air all the possibilities of diagnosis and prognosis. The doctor soon learned his lesson in this regard; the nurse seemed to learn it rather more slowly. Worst of all was the woman who discussed with the patient or before him those intricacies of previous cases or interesting autopsies which had been witnessed. It would be quite as proper and not nearly as disastrous to incite the public to have their discussions here in the Academy, but he doubted if they could hold their private patients if these heard them doubt and question diagnosis, method, and results as frankly as they did; they would no doubt then prefer the quack who was always right and who needed no consultation. Another point in the hospital training which unfitted the nurse for private work was the division of responsibility inherent and necessary in hospital work. Time and again, a nurse whom he had found thoroughly reliable, accurate in her observations, attentive in attitude, serene and industrious in the hospital accepted her responsibility too lightly in private practice. Most women, however, who seriously took up nursing soon lost this attitude and became sympathetic, conscientious women upon whom one could rely and whom they all admired. Dr. Brooks said he was prepared to say that he would prefer that the nurse should receive less theoretical training in medicine if this must be sacrificed for increased and more valuable efficiency.

**The Training School Problem and Its Solution.**—Miss Sara E. Parsons, Superintendent of Nurses, Massachusetts General Hospital, Boston, Mass., presented this paper, which was read by Miss Clara D. Noyes. She said that training schools for nurses were not doing the greatest good to the community as at present conducted, but that the reasons for this were not easily stated. The problem appeared to be the need of cheap service for the sick public and in the hospitals a sufficient number of suitable applicants for the nursing staff. The fact that pupil nursing had been so satisfactory to the doctors and to the patients where it had been tried appeared to prove that expert nursing was not absolutely necessary in the majority of cases. Nurses themselves who should be the best judges were rightly opposed to this way of meeting the public need because of the injustice to the pupil. A system of grading nurses did not appear, in her opinion, to strike at the root of the defects in their schools. Things had come to such a pass in many of the hospitals that applicants were not available out of which to make any grade of nurses. When they scanned the records of the first schools of training they found a liberal ideal of what a school should be compared with the standards which existed in many of the so-called schools which had been established of late years, and it was not a question of large or small, special or general hospitals, because they found examples of each that were running perfectly successful schools. When schools were first organized it was considered necessary to give the pupils a thorough general training, including medical, surgical, and obstetrical training at least. The success of these schools had been such that hospitals of all kinds regardless of what they were prepared to offer had started so-called schools, and in many instances practically a nonpayment system and a three years' course. Very little account had been taken of the direful consequences of graduating an army of incompetent, dissatisfied women. Were these people after their long years of hard work with no adequate recompense in either money or education going to recommend others to follow their footsteps? They had, through these so-called schools, lost the confidence of the public and this confidence should be restored by making the schools what they ought to be. Not only were the graduates of these so-called schools unfortunate but the public as well, for it was forced to pay graduate charges and was woefully humbugged. When hospitals changed from the old system of paid attendants to pupil nursing they assumed an educational responsibility in place of a business arrangement. Some hospitals met it more fairly than others and their schools had deservedly won good reputations. These were not the schools that were complaining of the nursing situation. Injustice had unconsciously been done the nurse owing to the traditional idea that hardship was an indispensable part of a nurse's life. It was the belief of the speaker that before the nursing situation could be any better the hospitals would have to reform their nursing system effectually by searching out the fault in each system and doing what was needful at any cost. There was no justice in doing charity for some at the expense of others, nor in spending time and money alleviating pain and poverty while deliberately impoverishing the physical resources and professional efficiency of another class. The effects of false standards in relation to nursing work could be seen in some of the European countries. In some countries the popular sentiment was so against a living remuneration that it was a long and desperate struggle for the nurses to wrest themselves from the mother houses and to win proper training and a living wage. The day had come when they saw the folly of work done under religious enthusiasm and without practical thought of its worth or the ultimate effect upon the community that permitted it. Hospitals must face the necessity of regulating their affairs after ordinary business methods in relation to the nursing department and there were two alternatives—financial or educational equivalent for services rendered. The minimum educational requirement for the kind of nursing that was demanded today was a full high school course or a good equivalent, with an elementary knowledge of Latin, chemistry, anatomy and physiology, and bacteriology. Given this foundation the hospital could build upon it a consistent structure of theory and practice that would produce satisfactory results. The pupil who knew less than was indicated above was a dangerous person to intrust with drugs or diets as now prescribed. It was possible for both high school and college graduates to fail dismally at nursing as tact and common sense were absolutely essential in the successful nurse. The college woman needed as much practical experience in nursing as the less educated woman since she had always been a student and had not learned to use her hands, or to put her theory to practical use. When one considered the ground to be covered the three years' course was none too long. As to those who needed trained attendants, there was a class of women who could never qualify as trained nurses who might make invaluable attendants where no resopsibility must be assumed. Such women might be trained in elementary nursing and domestic science and certified to work as "attendants" or "home halpers." The training schools might train such a class of workers. This solution would be simpler than grading nurses.

**The Efficient Nurse.**—Mrs. C. V. Twiss, president New York State Nurses' Association, read this paper, which she said she supposed she had been asked to present because she was the presiding officer of the New York State Nurses' Association. During the past eight years she had been continuously an officer of either her alumnæ, the County, the State, or the National Association, and was therefore familiar with the feelings and opinions of a large majority of the members of these associations. The strongest desire of these women as a body was to improve their efficiency in every possible way, not for the benefit which might accrue to them financially, but that they might be of greater service to the sick and dying upon whom they were called to minister. The nurse of to-day was no more the nurse of the olden time than the doctor of to-day was the doctor of fifty years ago. It was her belief that the nurse should strive to increase her efficiency and to improve her methods of work, just as the doctor was doing. The fact should be emphasized that in order to increase her efficiency the nurse should possess certain qualifications other than those with which she was naturally endowed. It went without saying that the doctor and nurse should have certain natural capacities for their work. It was possible for a man to become a good doctor without a college education, but such a course was intended to make him a better one, and likewise a woman might become an efficient nurse without a high school education, but she should somehow be in possession of the knowledge she would acquire in such a school. It had been stated by members of the medical profession that the nurse of the present time was too highly trained and the proposal had been made to encourage persons who had less education to enter the training schools for nurses, that provision be made by these schools for courses of one or

two years, and that these persons be called trained attendants. The drudgery that should be delegated to maids was discouraging to the student and unfitted her for study and it was no more reasonable to expect women entering training school to perform such work than to expect the medical student to perform the duties of watchman, coal-heaver, etc., because the hospital could not afford to pay men for such work. Under present conditions a three years' course was none too long to impart the instruction that was necessary to graduate an efficient nurse. The ramifications of medical and surgical treatment were becoming more and more extensive and both doctor and nurse should be able to cope with any case to which they were called. There was but one medium of values in their profession and but one standard of efficiency and that was represented by a diploma from the proper authorities. Upon this diploma rested their authority to do the work they had chosen and the guarantee to the public that the work would be well done. It was to be hoped that the day would come when the State of New York would require every woman practising the profession of nurse to be registered and then the title of R. N. would have a definite meaning, whereas to-day it was merely a complimentary honor. A point which should be emphasized was that this greater efficiency of the nurse was in the interest of the public. This would not be accomplished by establishing a double or triple standard of efficiency in the nursing world. If the physicians were handicapped in securing the services of nurses at prevailing prices it might be well to look into the manner of living of one's patients and see if their objection to paying the price was not due rather to penuriousness than to lack of means. If it was found that the supply of nurses was not keeping up with the demand then it might be a wise plan to induce the hospitals to make it more attractive for women to seek admission to their training schools. The necessity of placing instructors of the highest ability at the head of training schools should also be urged. The most essential thing in regard to the problem of the trained nurse was the cooperation of the doctor and the nurse. Such meetings as this should tend to bring them into closer sympathy for one another's work and thus increase the nurse's efficiency and give the public the best service.

**The Need of Orientation.**—Miss Anna W. Goodrich, inspector of Nurse Training Schools, New York State, presented this communication, in which she emphasized the importance of the determination of one's position in relation to new environment, or new ideas, or concepts. One should have an exact conception of the act of nursing, and especially attempt to determine one's true position in relation to nursing.

Miss Clara D. Noyes, superintendent of nurses of Bellevue and the Allied Hospitals, said that no one was more keenly alive to the defects of the present method of preparing pupils for the field of nursing than those who had dealt with these problems first hand in the training schools and institutions for the care of the sick. It was a big problem and was not confined to New York City. It was a question which concerned the future of hospitals, of private nursing, and of all social and public health work. The nurse had become one of the most important social and economic factors in the community, and, therefore, the problem was not one that could be disposed of hurriedly, but one which required profound thought and deliberation. The organized bodies of nurses had been giving these problems attention for years and although much had been done to improve the schools of nursing the work was only just begun. Conditions had changed in the training schools for nurses as elsewhere. The same feeling of unrest which had attacked all walks of life was felt just as keenly in their schools and hospitals. Medical schools were not managed in the same way as in the past, nor did physicians do their work as it was done thirty years ago, neither could schools of nursing be continued in the same way. Hospitals found it almost impossible to secure suitable women for their many important positions, while social service, district nursing, public health, and school nursing were clamoring for the highly educated, well prepared nurse. At the same time the community was filled with unprepared women, the product of a lowered standard in the training school, of correspondence courses, etc. Many of these have never had any actual experience or hospital training, and therefore it did not seem that there should be any reason why a cheaper grade of sick room helper should not be available. In order to correct these evils laws had been enacted in nearly all the states; that of New York demanded a minimum educational qualification of one year in high school, or its equivalent, as the entrance requirement of a registered school. Some states required a much higher educational standard. It was a significant fact that in those schools where the educational qualification was high and the school conducted on an educational basis, where shorter hours prevailed, even if an entrance fee was demanded, there seemed to be no scarcity of applicants. Miss Noyes maintained that they must adhere to the law as it stood in New York State, otherwise the hospitals would gradually revert to the condition in which Florence Nightingale found them. The practical difficulties in the way of the plan advocated by Dr. Chapin were: that there would have to be separate nurses' residences; there would be a prohibitive staff of paid supervisors; instead of three classes of nurses, there would be required three classes of the three-year students, two classes of two-year pupils, and two of one-year pupils —seven separate and distinct classes to be housed, fed, supervised, and instructed, and at the termination of the various courses there would be no way for the public to distinguish a one-year nurse from a three-year nurse. Moreover, it would only be a short time before the well-educated, higher type of woman would cease entirely to enter the school. Why should the highly educated woman be required to spend three years in a hospital, bear all the responsibility, and take all the night duty, while her ignorant sister was required to take but one year? A supplementary force of ward maids introduced into the wards at Bellevue had proved a failure as far as any assistance with the actual nursing and care of the patient was concerned; this might in a measure be due to the class of women who had been willing to try the work. They had, however, a distinct value when restricted to domestic work, thus releasing the pupil nurse for actual nursing duties. They had found it unsafe to entrust to these helpers the simple duty of dusting the bedside table. If a nurse was needed at all, the finest type of skilled worker was the one required. If such a nurse was not needed, probably a well-trained domestic worker would serve the purpose, but she should not be trained at the expense of the nursing profession and under the protection of the word "nurse" be permitted to practise upon the unsuspecting public, neither should the hospital training schools be asked to train this type of domestic servant for a community. Miss Noyes said that during her twelve years' experience in conducting registries in connection with hospitals in different cities, physicians and laity invariably emphasized the fact that they wanted not only a trained nurse, but a well-bred, refined woman. It became more and more difficult to interest nurses in private nursing, and there might be a reason for this. There also seemed to be a lessened demand at Bellevue and the Allied Hospitals, while inquiries for institutional positions from women who were willing to do actual hard work had increased. Out of a class of 34 graduated at Bellevue this year, 23 were filling institutional positions. The best interests of the public, the hospital, and the nurse would be served by schools established upon a sound educational basis determined by law, with State inspection of schools and hospitals, and by compulsory registration of graduate nurses.

Dr. S. S. Goldwater, superintendent Mt. Sinai Hospital, said that it was true that similar conditions regarding the trained nurse were met with in hospitals as were met outside of them. He did not believe in hospital administration with nurses responsible. In hospitals administration was performed by the older members of the nursing staff. Originally all the instruction was given by the principal of the school and voluntary members of the medical staff, but more progress had been made by organizing under the present State law regarding the instruction of nurses in training schools. In regard to Dr. Chapin's proposition to have first, second, and third degree nurses, he asked to what extent the graduate nurse of higher type would be called for, and also whether any considerable number of training schools could be maintained on that basis. He thought it was a mistaken argument, because the training schools in such cities as Boston, Baltimore, and New York showed that the general application of such a policy was the practical thing. He doubted whether such a policy as outlined by Dr. Chapin could be used with success. However, if they moved too hastily in this matter it would be a mistake for it might happen that much of the sick nursing would be done by those who were not nurses at all. He advised them to be cautious and said that whatever was done should be done in a series of slow but progressive steps.

Dr. John A. Hartwell said that the practical question was, what was the best to be done for the sick and needy who did not go to the hospitals and could not afford to pay what a properly trained nurse asked for. The sick were among them and must be cared for. Medical education throughout the country had persistently increased the demands made upon the medical man, and the standards

had been raised and by those who had the interest of the public and the profession in mind. He did not see why the same rule should not apply to the trained nurses. Personally he preferred to have on a case the best trained nurse of the highest type of mind that could be procured. He believed there would be great danger in adopting two grades of nurses, for soon the second grade would become the first grade. If 12,000 women in this State received diplomas through correspondence schools during a year they would deceive the public.

Miss ADELAIDE NUTTING said she would like to throw light upon one point that had been overlooked regarding the high-priced nurse. The nurses to-day were charging the same as they charged twenty-five years ago; although the cost of living had increased, they would find that the trained nurse did not charge more than $25 a week. The nurses supposed to have graduated from the correspondence schools seldom received as little as $18, and usually $25 a week for her services.

**Election of Officers.**—*Chairman*, Dr. Linsey R. Williams; *Secretary*, Dr. J. C. Roper.

# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF GEORGIA.

*May*, 1912.

(*Concluded from page* 45.)

### DISEASES OF CHILDREN.

1. Etiology, symptoms, and treatment of lobar pneumonia?
3. Differential diagnosis between lobar and bronchopneumonia?
4. Symptoms, cause, and management of poliomyelitis?
5. Symptoms and management of scarlet fever?
6. What is the danger of allowing a child to lie in one position when suffering with a protracted illness?
7. Etiology, symptoms, and treatment of cholera infantum?
8. Symptoms and treatment of diphtheria?
9. Difference between spasmodic and true croup; treatment of each?
10. Differential diagnosis between variola and varicella?

### OBSTETRICS.

1. Define postpartum hemorrhage; state causes, varieties, and give treatment.
2. How would you manage a brow presentation?
3. Give the diagnosis and treatment of hour-glass contraction of the uterus.
4. What is placenta prævia? Give varieties, symptoms, dangers, and management.
5. When is curettage of the uterus justifiable in obstetric practice, and how should it be performed?
6. Give indications for and methods of terminating pregnancy prematurely.
7. Describe the fetal circulation.
8. When and how is a repair of lacerated cervix to be performed? Of lacerated perineum?
9. What are the dangers of traction on the cord?
10. Discuss the use of anesthetics during labor.

### GYNECOLOGY.

1. Describe the female reproductive organs.
2. What is meant by plastic operation? Describe operation for perineorrhaphy and trachelorrhaphy.
3. Define caruncle of urethra and give treatment.
4. When would you use the curette? Give steps of the operation in detail.
5. What is a pelvic hematocele? Give etiology, diagnosis, and treatment.
6. What is vicarious menstruation?
7. What are Skene's glands? Give the signs of their inflammation.
8. Describe ventrosuspension and ventrofixation. Under what conditions may either operation be justifiable?
9. Give treatment of inevitable abortion.
10. Give treatment of cystitis.

### SURGERY.

1. What is aneurysm? Differentiate between true and false sacculated aneurysm. With what conditions may aneurysm be confounded? Differentiate between abscess and aneurysm.
2. Name the inflammatory diseases of bones. How should a case of acute suppurative osteomyelitis be treated? What is a fracture? What is a dislocation? Differentiate between fracture and dislocation. Name the two essential principles in treatment of fracture.
3. What are the symptoms of fracture of the spinal vertebræ with pressure? Give symptoms of traumatism of about the ninth dorsal vertebræ in which the cord is entirely severed; partially severed. Under what conditions would an operation be indicated and under what conditions would it be contraindicated?
4. Differentiate between scrotal hernia and hydrocele. What is hernia? How should strangulated oblique inguinal hernia be treated? Describe an approved operation for the radical cure of an oblique inguinal hernia.
5. What is a tumor? What is an adenoma? What is an angioma? Describe a dermoid cyst. Give indications for the removal of the mammary gland.
6. How should a dissecting wound and attendant blood poisoning be treated? What is the rational treatment of a suppurative abscess from its initial symptom? Give symptoms of psoas abscess. With what conditions may it be confused?
7. Define epispadias, hypospadias, phimosis, and paraphimosis. What are the more frequent causes of phimosis? Give treatment briefly.
8. Name the most common varieties of fistula. Describe briefly an operation for fistula *in ano*? Describe an approved operation for the removal of hemorrhoids.
9. What is shock and how treated? What agents are preferable for the production of general anesthesia? What are the contraindications to the use of the three principal general anesthetics?
10. Give differential diagnosis of coma from injury, opium poisoning, apoplexy, uremia, and alcoholic intoxication. Describe septicemia; pyemia. Give differential diagnosis.

## ANSWERS.

### DISEASES OF CHILDREN.

1. LOBAR PNEUMONIA. *Etiology:* The *diplococcus pneumoniæ*. *Symptoms:* Short incubation period, chill, convulsions, rapid rise of temperature, localized pain, the pulse-respiration ratio is altered, being reduced from 1:3.5 to 1:1.5, rapid respiration, rusty sputum, flushed face, headache, rapid pulse, herpetic vesicles round the mouth, dilated pupils, dry tongue, and crisis between fifth and eighth day. *Treatment:* Rest in bed; ample ventilation; milk and other fluid diet; leeches or blisters for the pain; cold sponging and quinine for the fever; ice-bags, bromine, and Dover's powder have been found useful.

3. See PRACTICE, question 2.

4. POLIOMYELITIS. *Symptoms:* "The onset of the affection varies; it may be acute, subacute, or chronic; it is usually sudden, with an attack of mild fever of a remittent type, of a few days' duration, on recovery from which it is noticed that the child is paralyzed. Rarely the paralysis may be preceded by convulsions. The paralysis may affect both arms and both legs, the legs alone, or only one of the four extremities; it may, very rarely, be a hemiplegia. As a rule, however, the leg suffers more frequently than the arm; in paralysis of the leg the muscles below the knee suffer more severely than those above. The bladder and rectum are not affected, or, if so, only temporarily, and anesthesia or numbness cannot be detected. The temperature of the paralyzed limb is low and the part is cyanosed in appearance. After a few days there is a slight improvement in the paralyzed parts, although the muscles show a rapid wasting, which is progressive until all muscular tissue is gone. The reflex movements are impaired or abolished. The electro-contractility by the faradic current is abolished in the paralyzed parts. With the galvanic or constant current the 'reactions of degeneration' are developed." (Hughes' *Practice of Medicine.*)

*Treatment:* "During the febrile stage the patient should be placed at rest in bed and all the secretions rendered free. If the affection is suspected at this period the limbs should be wrapped in cotton-wool and ergot administered to lessen the spinal congestion. Counterirritation is unnecessary. As soon as the febrile reaction has subsided and the paralysis becomes manifest the child should be well fed and taken outdoors once daily. Gentle friction should be applied to the affected muscles at first, followed later by the hot spinal douche and mild galvanism. Internally, quinine, belladonna, ergot, and potassium iodide may be of value. Later, as improvement takes place, tincture of nux vomica, ♏i to iii, three times daily, or

hypodermic injections of strychnine sulphate, gr. 1/100 to 1/16, according to the age, twice a week, and faradism to the paralyzed muscles, are to be used. Means should be taken to prevent deformities." (Hughes' *Practice of Medicine.*)

The disease is probably caused by a microorganism which has not yet been identified.

5. SCARLET FEVER. *Symptoms:* Sore throat, high fever, vomiting, headache; rash, appearing on first or second day, first on chest, then on face, body, and extremities, is scarlet and punctuate; "strawberry tongue," enlarged glands at angle of jaw; desquamation in branny scales or in flakes. *Treatment:* This "consists first in isolation until desquamation has been completed. The patient should be placed in bed and liquid diet should be prescribed. The room should be well ventilated and all unnecessary furnishings should be removed. A sheet wet with some antiseptic solution should be hung over the doorway, and attendants should be covered with long gowns to prevent carrying the infection in their clothing. Careful disinfection of the hands, face and hair is absolutely necessary on the part of the physician, nurse, and other attendants. The throat and nose should be cleansed by some alkaline or antiseptic solution, such as Dobell's, peroxide of hydrogen, or sodium bicarbonate solution. The throat symptoms may be relieved by the inhalation of vapor containing eucalyptus oil, turpentine, etc. The gastrointestinal disturbance will require the use of calomel, and the vomiting may be controlled by small pieces of cracked ice, paregoric (gtt., 1-5), or cocain (gr. 1-20). Acetanilid (gr. ½ for each year of age), phenacetin, or quinine (gr. ½-1) will relieve the nervous symptoms. If the pulse becomes weak and the heart irregular, stimulants, such as aromatic spirits of ammonia (gtt. 10), brandy or whisky (gtt. 10), strychnine (gr. 1-100 to 1-30), nitroglycerine (gr. 1-500 to 1-100), etc., are indicated. Daily sponging with antiseptic solution and inunctions with cacao-butter are very beneficial." (*Pocket Cyclopedia.*)

6. Bedsores.

7. *Cholera infantum* is caused by bacteria or their toxins in milk.

*Symptoms:* Diarrhea is the initial symptom. The stools are more or less fecal, but soon become watery, colorless, and odorless. In some cases they may be of a brownish-green color with a musty odor. There are restlessness, high fever (105-108° F.), thirst, vomiting, and purging. The child rapidly wastes, and the surface temperature falls. The urine is scanty or suppressed, and the child becomes apathetic, which condition may pass on to convulsions, stupor and death.

*Treatment:* Ordinary diarrhea should be prevented from terminating in cholera infantum. The stomach and colon should be irrigated. From ℥2-4 of water at 100° F. should be allowed to flow into the stomach through a soft-rubber catheter and be siphoned out. This should be done only once. For the colon, sodium bicarbonate, ʒi, should be added to the pint, and the irrigation performed twice daily. If the rectal temperature is very high ice-cold water should be used; otherwise warm water. When symptoms of collapse appear hot pack is used. Ice-water quenches the thirst, even if it is vomited. Champagne and drop-doses of brandy may be given if the stomach is tolerant. Strychnine, gr. 1/100 hypodermically, to a child one year old, is a valuable stimulant. Morphine, gr. 1/100, and atropine, gr. 1/800, may be given in the same way and repeated every hour until the child is quieted. (*Pocket Cyclopedia.*)

8. *Symptoms of diphtheria:* General malaise, slight fever, stiff neck with swollen glands, congestion of fauces and soft palate, white patches in throat, which coalesce and form the false membrane; anemia, weakness and rapid pulse; and see PRACTICE, Question 6. *Treatment:* See PRACTICE, Question 6.

9. *Membranous or true croup* is either laryngeal diphtheria or a streptococcus infection. In either case there is a prior stage of malaise, accompanied by chills, fever, and sore throat. The fever may become very high. A membrane forms, in which are found the Klebs-Loeffler bacillus or streptococci. *False or spasmodic croup* generally comes on suddenly, at night. There is no appreciable fever, no previous malaise or sickness, and often the patient is asleep again by the time the physician arrives. There is frequently a thick tenacious mucus, but neither Klebs-Loeffler bacilli nor streptococci are present. It is entirely a local disturbance.

*Treatment of true croup* is practically the same as for diphtheria at the commencement; see PRACTICE, Question 6. In addition, tracheotomy may be necessary. For *false croup*, the child should be put in a warm bath; wine of ipecac, or other emetic, should be administered; calomel, in divided doses, may be given; diet should be fluid, and restricted; steam and tincture of benzoin may be inhaled. Intubation or tracheotomy may be necessary.

10. *Variola and varicella:* (1) Very young children are attacked with varicella, whereas variola usually shows itself in dults. (2) Vaccinated children readily take varicella; not so variola, even in the modified form. (3) Children who have had varicella may contract variola, even soon afterward; or the two diseases may coexist. (4) Varicella is not inoculable, whereas variola is notoriously so. (5) The eruption of varicella appears in twenty-four hours; that of variola not till the third day. (6) The febrile symptoms continue after the eruption appears in varicella; those of variola subside. (7) In varicella the spots come out in successive crops; this is never seen in variola. (8) The spots in varicella are unilocular, and collapse on being punctured; the spots in variola are multilocular, and do not collapse on being punctured. (9) In varicella the eruption is very irregular, and appears over the body generally; in variola it appears in groups of threes and fives, and is always seen on the limbs. (10) The papule in varicella is soft, and disappears on stretching the skin; in variola it is hard and shotty, and does not disappear on stretching the skin.

OBSTETRICS.

1. *Postpartum hemorrhage* is a hemorrhage occurring from the uterus or birth canal within six hours after delivery. *Causes:* Lacerations to birth canal, rupture of veins, failure of uterus to contract, and retention of placenta or clots. *Varieties:* Primary and secondary; traumatic and atonic. *Treatment:* Grasp the uterus at once, through the abdominal wall, and massage it firmly. Anything in the uterus should at once be cleaned out. Pass one hand into the uterus, and with the other on the outside make firm pressure. A hypodermic of ergotin, or ergol can be given by an assistant. An intrauterine douche of hot sterilized water (about 115° F.) may be given. Sometimes a very thorough packing and plugging of gauze of uterus and vagina may be necessary. Whatever is done must be done promptly; and everything likely to be needed for this emergency should be prepared beforehand in every labor.

2. *Management of brow presentation:* If recognized before the onset of labor, postural treatment may be tried. This consists in placing the woman on that side toward which the fetal face is directed, so as to secure flexion of the fetal head. Failing in this, or if only recognized too late for the above to be tried, cephalic or podalic version may be attempted; or forceps may be applied, chiefly to act as a rotator. If the above do not succeed, symphyseotomy may be performed, and the child delivered by forceps. When all other methods fail, if the child is dead craniotomy is indicated.

3. *Hour-glass contraction of the uterus* is *diagnosed* by introducing the hand into the uterus and finding a constriction below the placental site but well above the internal os, and feeling something like a second internal os. *Treatment:* Insert the fingers and then the hand within this constriction, and so overcome its resistance. An anesthetic should be given.

4. *Placenta prævia* is the condition in which the placenta is attached in the lower uterine segment, and may be near or over (partially or completely) the internal os. *Varieties:* (1) *Central*, when the placenta completely covers the os. (2) *Partial*, when the placenta overlaps the os. (3) *Marginal* or *lateral*, when the placenta reaches the margin of the os but does not overlap it. *Symptoms:* Sudden hemorrhage, accompanied by syncope, vertigo, restlessness, and feeble pulse. *Dangers:* Hemorrhage, sepsis, death of the mother, death of the fetus. *Treatment:* Stop the hemorrhage by a vaginal tampon; this must be tight and thorough. *Accouchement forcé* is indicated; this consists of dilatation of cervix, version, and immediate extraction of the child.

5. See GYNECOLOGY, Question 4.

6. Conditions that justify the induction of premature labor: (1) Certain pelvic deformities; (2) placenta prævia; (3) pernicious anemia; (4) toxemia of pregnancy; (5) habitual death of a fetus toward the end of pregnancy; (6) hydatidiform mole; (7) habitually large fetal head. The methods that may be employed are: Partial dilatation of the cervix and the introduction within the cervix (and vagina) of a tamponade of sterile gauze; (2) dilatation of the cervix; (3) puncturing the membranes; (4) introduction of a soft rubber bougie into the uterus; (5) intrauterine injection of glycerine, water, or some other fluid.

7. *The fetal circulation:* "The arterial blood coming

from the placenta to the fetus travels along the umbilical vein to the liver. After giving off several branches to the left lobe it divides into two streams, the larger joining the portal vein and thus entering the liver, the smaller passing directly into the inferior vena cava through the *ductus venosus*. In the inferior vena cava the blood carried by the hepatic veins and ductus venosus mixes with the blood which has circulated through the lower extremities. On entering the right auricle the blood of the inferior vena cava is directed by the Eustachian valve, through the foramen ovale into the left auricle, and from thence into the left ventricle. The left ventricle forces it into the aorta, and it is then distributed to the head and upper extremities, a small quantity only passing into the descending aorta. The blood which has circulated through the head and upper extremities returns to the heart along the superior vena cava, the blood then passing into the right ventricle and pulmonary artery. A small part of the blood in the pulmonary artery is conveyed to the lungs, but the major part passes through the ductus arteriosus into the aorta at the commencement of the descending portion. This blood is distributed to the lower extremities, a certain portion of it entering the hypogastric arteries and being conveyed to the placenta." (Ashby's *Physiology*.)

8. See GYNECOLOGY, Question 2.

9. *Dangers of traction on the cord:* Premature detachment of the placenta; partial removal of placenta, with pieces left behind; this necessitates manual removal; inversion of uterus; sepsis.

10. ANESTHETICS are used in labor to lessen suffering produced by labor pains; to lessen the pain attending obstetric operations; to relax the uterus when its rigid contraction interferes with version; to promote dilatation of the os uteri; to reduce excessive nervous excitement which may interfere with progress of early stage of labor; to relieve eclamptic convulsions and mania; in cases of uterine inversion to relax the constricting cervix and so facilitate replacement; in bipolar version to lessen pain of introducing the hand into vagina; in precipitate labor to suspend action of voluntary muscles and retard delivery; in all cutting operations upon the abdomen; and sometimes in sewing up a lacerated perineum when many sutures are required. (From *King's Obstetrics*.)

GYNECOLOGY.

1. In the nulliparous adult the *uterus* is about three inches long, about two inches wide at the upper part, and about one inch thick. The uterus lies between the rectum behind and the bladder in front; it is below the abdominal cavity and above the vagina. Its position is one of slight anteflexion, with its long axis at right angles to the long axis of the vagina. The anterior surface of its body rests on the bladder, and the cervix points backward toward the coccyx. The uterus is not fixed, but moves freely within certain limits. It is held in place by ligaments—broad ligaments, round ligaments, vesicouterine, and rectouterine.

The *Fallopian tubes* are about 4½ inches long, and extend from the cornua of the uterus outward to the free surface of the ovary. The lumen of the tube is much greater at the ovarian end than at the uterine end. At the outer end it is surrounded by fringed processes called the fimbriæ. It lies at the upper edge between the two layers of the broad ligament.

The *ovaries* are almond shaped, about 1½ x ¾ x ½ inch; they are attached to the posterior layer of the broad ligament, at the outer end of and a little below the Fallopian tube.

2. *Plastic operations in gynecology* are such as are done: (1) for the repair of lacerations of the perineum or cervix; (2) for vaginal fistulæ; (3) for the narrowing of the vagina, and the treatment of cystocele or rectocele; and (4) various other operations on vulva, urethra, or anus.

*Perineorrhaphy:* "The labia are seized with Allis' forceps at the level of the lowest carunculæ myrtiformes. A guide stitch is placed in the posterior vaginal wall directly under the external urinary meatus. By pulling one Allis forceps and the guide stitch in opposite directions outward and downward, the posterior sulcus is exposed; denudation is required, even in a recent tear, for a part of it is always submucous. The other sulcus is exposed and denuded. Then by holding the guide stitch upward in the middle line and pulling the forceps apart the mucous membrane between the sulci is denuded or freshly torn surfaces covered with granulation-tissue are scraped with the edge of a knife. The ruptured levator ani muscle in the posterior sulci is united with a double tier suture of chromic gut, two half-hitches being taken in the stitch as it turns upward after coming down from the apex of the wound, in its deeper portion to the base. One knot at the apex of the sulcal denudation secures the stitch. The retracted ends of the transversus perinei and bulbocavernosus muscles are brought together by silk-worm sutures. Finally, a single stitch at the top of the perineal wound unites the posterior commissure of the vulva, restoring the fossa navicularis. The perineal stitches are knotted; they are removed on the twelfth day." (Hirst's *Obstetrics*.)

*Trachelorrhaphy:* "For trachelorrhaphy the two lips of the cervix are seized with double tenacula and pulled down, an Auvard's speculum retracting the posterior vaginal wall. Denudation is resorted to if necessary. The raw surfaces are united with interrupted sutures of chromic gut. Care must always be exercised to leave a wide cervical canal. For amputation of the cervix, which is required when the injury or sloughing leaves a condition irreparable by plastic surgery, a circular incision is made above the site of the injuries and the cervix is amputated in healthy tissue. The sutures of chromic gut are inserted according to the modified Hegar plan." (Hirst's *Obstetrics*.)

3. *Urethral caruncle* is a small red fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed. The proper treatment is to excise it or destroy it with the thermocautery.

4. CURETTAGE. *Indications:* For diagnosis: to remove pieces of retained placenta or decidua; in cases of endometritis, mucous polypi, hemorrhage, dysmenorrhea, endocervicitis. *Dangers:* Sepsis, perforation of uterus, hemorrhage, abortion, inflammation of uterus or adnexa. *Procedure:* All antiseptic and aseptic precautions are necessary, the patient should be in the dorsal position, the vagina is to be disinfected, and the cervical canal dilated; a speculum is introduced into the vagina and the cervix is drawn down with volsella; the uterine cavity is irrigated with creolin or lysol; a curette is inserted to the fundus and moved down to the internal os; the operator should begin at one cornu, and go in the same direction all around till he reaches the starting point, and if necessary repeat till no more spongy or hyperplastic tissue appears; the fundus should be scraped separately by moving the curette along it from side to side; in going towards the fundus no scraping should be done, and care must be taken not to perforate the uterus; should this happen no fluid must be injected; otherwise the uterus and vagina are again irrigated, and one or more strips of iodoform gauze are inserted into the cavity to act either as a hemostatic plug or as a drain, which is diminished with two days' interval and withdrawn on the sixth day. A hemostatic tampon should be placed in the vagina and withdrawn the following day. If any fever arises the tampon is at once removed and the vagina douched with antiseptic fluid every three hours. If not, the vagina is only swabbed with the same every day, and packed loosely with iodoform gauze. After the final removal of the gauze the antiseptic douche is given twice a day until there is no more discharge. The patient should remain in bed for a week.

5. *Pelvic hematocele* is an accumulation of blood in the pelvis, due to rupture of a blood-vessel; it is generally due to rupture of a tubal pregnancy, or to a tubal abortion, or disease of the ovary, or perimetritis. *Symptoms:* Pain, which is sudden and severe, over abdomen and pelvis; nausea, cold perspiration, cold extremities, pulse rapid and weak, pinched features, and shock. It is most likely to be mistaken for an ectopic gestation; but in the latter there will have been the subjective symptoms of pregnancy.

*Treatment:* Removal of the blood and diseased tube or ovary. This may be done by the vaginal route or by the abdominal route.

6. *"Vicarious menstruation* is a flow of blood from some organ (other than the uterus), recurring at the monthly periods and taking the place of menstruation. It may occur from the hemorrhoidal vessels, the lungs, the skin, the nails, the mammary glands, ulcerated surfaces, and many other parts." (King's *Manual of Obstetrics*.)

7. *Skene's glands* are two small glandular tubules, about half an inch long, situated in the mucous membrane of the female urethra; they open by small ducts just within the meatus. When they are *inflamed* they emit a serous or purulent discharge; the mucous membrane is swollen and thickened, and the orifice may be surrounded by a small granulation area. Pressure causes pain.

8. *Ventrosuspension.* "An incision is made through the

abdominal wall in the median line just above the symphysis pubis and extending upward for a distance of two inches. The index and middle fingers of the left hand are passed into the peritoneal cavity and gently inserted between the uterus and the rectum. The adhesions are then carefully separated and the fundus of the uterus lifted forward into its normal position. The peritoneum at the lower angle of the wound is seized with hemostatic forceps and drawn into the incision and the first suspension suture introduced close to its divided edge on the left side. The index and middle fingers of the left hand are then passed into the abdominal cavity and the uterus securely held while the suture is passed through the fundus. The suture is now introduced into the fundus directly on a line dividing the uterus transversely into two equal halves and buried one-quarter of an inch deep in the uterine tissue with a distance of about half an inch between the points of entrance and exit. The uterus is then released by the fingers of the left hand and the suture passed through the peritoneum opposite to its point of entrance. The second suture is now passed through the peritoneum on the left side one-quarter of an inch above the first suture. It is then passed through the fundus about one-quarter of an inch behind the first suture, and finally through the peritoneum opposite to its point of entrance. It is not necessary to hold the fundus between the fingers while the second suture is introduced, as the uterus can be easily controlled by making traction upon the free ends of the first suture. After both sutures have been introduced their free ends are seized with forceps and placed on each side of the abdominal incision. The through and through sutures closing the abdominal incision are introduced and suspension sutures tied. The first three sutures closing the incision at the lower angle of the wound must be introduced so as to pass completely under the peritoneum at its points of attachment with the fundus, otherwise the weight of the uterus will cause stripping and a large dead space will result which will eventually become filled with serum or blood and suppurate. After all of the incision sutures are introduced the suspension sutures are drawn taut so as to take out the slack and bring the fundus of the uterus up against the peritoneum. The sutures are then tied and their free ends cut off close to the knots. The abdomen is closed and the wound dressed in the usual manner. The fascia is first united with a continuous suture of catgut and the wound then closed by tying the through and through sutures. The sutures in the lower angle of the wound are tied first, and special care must be taken to remove the slack and bring the peritoneum, at its points of attachment with the fundus, snugly against the abdominal wall." (Ashton's *Gynecology.*)

*Ventrofixation.* "This is a procedure that must be cautiously undertaken in married patients who have not reached the climacteric. An incision two or three inches in length is made immediately above the symphysis, and the fundus uteri is drawn forward by a volsellum. The silkworm gut stitches are inserted through the abdominal parietes and peritoneum, and also through the body of the uterus just posterior to its axis. The stitches should include about three-quarters of an inch of the uterine wall in their grasp, and go about one-eighth of an inch deep. On drawing them tight, the uterus is fixed forward against the abdominal wall and contracts adhesions. In some cases it may be desirable to scarify the uterine wall before tying the stitches, so as the better to determine adhesions. As a general rule the adhesions stretch somewhat, and hence allow a certain degree of play, but without the likelihood of a return of the displacement." (Rose and Carless' *Surgery.*)

*Ventrofixation* is indicated in cases of prolapsed uterus uncomplicated by uterine tumor, and when subsequent pregnancy is not expected to occur.

9. *Management of inevitable abortion:* "Two methods of treatment have been advised for these cases. The first is the *expectant plan:* Place the patient in bed, and if the bleeding is profuse insert a tampon of iodoform gauze (one yard) well up against the cervix. If this fails to control the hemorrhage, reinforce it by another yard or two of gauze and a perineal pad and binder. Small doses (3½) of the fluidextract of ergot should now be given every two or three hours. At the end of from eight to twelve hours remove the tampon, when the ovum may be found extruded from the cervix; if not, a vaginal douche of mercuric chloride (1:4000) must be given, and another tampon introduced. If, upon the removal of this second tampon at the end of ten or twelve hours, the ovum is not discharged, then more vigorous methods to secure its expulsion must be adopted. *Active plan:* The physician's hands and instruments are sterilized; the patient is etherized and placed on an appropriate table; the genitalia are thoroughly cleaned and a vaginal douche of mercuric chloride (1:4000) is given; the anterior lip of the cervix is brought down to the vulvar orifice; the cervix is dilated if necessary; the placental forceps is introduced into the uterus, and as much as possible of the ovum is removed; the uterus is thoroughly curetted, and an intrauterine douche of sterile water is given. A light tampon of iodoform gauze is placed in the vagina; the patient is then returned to bed. A strip of gauze may be placed in the uterus in cases of sharp retroflexion, to secure free drainage, and occasionally an intrauterine tampon will be necessary, when the uterus refuses to contract and hemorrhage persists after the use of the curette." (Gould & Pyle's *Pocket Cyclopedia.*)

10. *Treatment of cystitis:* Rest in bed; the imbibition of plenty of milk and water, and the avoidance of all highly seasoned food; laxatives; diuretics; sitz-bath; irrigation of the bladder with an antiseptic solution; hot fomentation and vaginal douches are often helpful; sometimes intravesical medication is necessary.

SURGERY.

1. An *aneurysm* is a pulsating sac containing blood, and communicating with the lumen of an artery.

A *true aneurysm* is one in which the sac is composed of one or more of the coats of the artery.

A *false aneurysm* is one whose sac contains no arterial coat, but is formed of condensed perivascular tissue.

A *sacculated aneurysm* is one in which the dilatation is pouch-like; only a part of the circumference of the artery is involved.

*Aneurysm may be confounded with:* Tumors, cysts, and abscesses lying over the course of an artery.

In the *abscess*, the pulsation is not expansile, there is no bruit, the swelling may sometimes be lifted away from the artery, and the size and pulsation of the swelling are not affected by pressure on the artery. In the *aneurysm*, the opposite conditions prevail.

2. The *inflammatory diseases of bone* are: Ostitis, periostitis, osteomyelitis, and osteoperiostitis.

*Treatment of acute osteomyelitis* consists in relieving the constitutional symptoms and preventing the bone from necrosing. An incision down to the bone is made; if pus is beneath the periosteum, the latter is also incised; a piece of bone is removed by chisel or trephine, pus is removed, the endosteum is hurt as little as possible, the wound is irrigated with hot bichloride solution and packed with gauze; the soft parts are closed and the wound well drained. In case this fails, amputation may be necessary.

*Dislocation* is a displacement (partial or complete) of the articular end of a bone.

*Fracture* is a sudden forcible solution of the continuity of a bone.

| FRACTURE. | DISLOCATION. |
|---|---|
| 1. Crepitus may be present. | 1. Crepitus never present. |
| 2. Preternatural mobility. | 2. Rigidity rather than mobility. |
| 3. Easily reduced—but | 3. Difficult to reduce—but |
| 4. Deformity more liable to recur after reduction. | 4. Deformity less liable to recur after reduction. |
| 5. The head of the bone is in its proper place. | 5. The head of the bone is not in its proper place. |
| 6. The socket containing the head of the bone is not empty. | 6. The socket which should contain the head of the bone is empty. |
| 7. When rotated the bone does not move as one piece. | 7. When rotated the bone moves as one piece. |

*Two essential principles in treatment of fractures:* (1) Reduce the fracture; (2) retain it in position.

3. *Symptoms of fracture of the spinal vertebræ, with pressure:* "The local signs are often but little marked. There may be pain at the seat of injury or some inequality in the spinous processes; but as often as not these are absent. The general signs depend upon the condition of the cord, and none will be present when it has escaped injury. But when it is compressed or crushed there will be paralysis of the parts below, more or less complete, according to the extent of the lesion. Taking as an example a case of fracture in the lower cervical or upper dorsal region—the most common situation—with severe compression or crushing of the cord, there will be paralysis of both motion and sensation of the whole of the parts below the seat of injury (paraplegia), and perhaps a zone of hyperesthesia immediately above the injured part due to

irritation of the nerve-roots that issue just above the damaged part of the cord. The intercostal muscles being paralyzed, respiration can only be carried on by the diaphragm, this muscle receiving its nerve-supply through the phrenics which are given off above the seat of injury. Hence, while the chest is motionless, the abdomen rises and falls during respiration. The bladder and rectum and their respective sphincters share in the paralysis, so that there is at first retention of urine and feces, followed by passive overflow of urine as the bladder becomes distended and will hold no more, and by involuntary passage of feces. Priapism, or involuntary erection of the penis, is frequently present, or is induced by the use of the catheter. The temperature varies; sometimes it may be lower than normal, but often it is considerably raised, even reaching as high as 107° F. shortly before death. Consciousness, unless any head injury has been received at the same time, is not affected. The reflexes in the lower limbs are usually at first in abeyance, but may return if the patient does not succumb to the shock of the injury. If the deep reflexes remain quite lost the probabilities are that the conducting power of the cord has been completely destroyed. If they return it is a sign that some power of conductivity is left in certain portions of the cord at the seat of injury. Death occurs, as a rule, within from twenty-four hours to a few days from bronchial trouble; but the patient, if the fracture is in the upper dorsal region, may linger for two or three weeks. The secondary troubles which are then generally met with are bedsores and chronic cystitis." (Spencer and Gask's *Surgery.*)

"*A total transverse lesion* gives rise to: (1) Complete flaccid paralysis of all the muscles innervated by the cord below the segmental level of the lesion (this is in contrast to subtotal transverse lesions in which spastic paralysis occurs); (2) complete anesthesia below the segmental level of the lesion; (3) absent kneejerks, and other deep reflexes below the segmental level of the lesion (occasionally certain of the cutaneous reflexes, such as the plantar reflex—dorsal flexion of the toe, the Babinski sign—may be preserved); (4) atrophy of the paralyzed muscles; (5) partial or complete reactions of degeneration; and (6) loss of control over the vesical and rectal sphincters."

"*Lesions limited to one lateral half of the spinal cord* give rise to the following characteristic symptom-complex, named after Brown-Séquard: (1) On the side of the lesion: (a) motor paralysis on a level with and below the lesion—flaccid paralysis and atrophy, with the reactions of degeneration of the muscles innervated by the segment of cord destroyed, and spastic paralysis of the muscles innervated by lower motor neurons below the destroyed segment of the cord (due to degeneration of the pyramidal tract—upper motor neuron); (b) a segmental zone of complete anesthesia (protopathic, epicritic, and deep sensibility) corresponding to the spinal-cord segment destroyed; and (c) below the level of the lesion—normal or increased protopathic and epicritic sensibility, but usually lessening of the deep sensibility (muscle sense). (2) On the side opposite the lesion: (a) lessened protopathic (pain) and epicritic (tactile and temperature) sensibility; and (b) normal deep sensibility, muscular power, and reflexes." (Kelly's *Practice of Medicine.*)

"Removal of the laminæ and spinous processes of one or more of the vertebræ is done to relieve pressure on the cord from depressed bone, inflammatory material, callus, cicatrices, or tumors. It is useless in cases where the spinal cord has been completely divided or one segment is totally disintegrated. The presence of the deep reflexes, or their return after a little time, indicates that the lesion is not a complete one, and so may justify operation. Other cases suitable for operation are: (1) Injuries which involve the cauda equina; (2) depressed fracture of a neural arch; (3) bilateral dislocation of the cervical spine; (4) paraplegia arising after an interval from the pressure of blood or inflammatory exudation, cicatrices, or callus." (*Aids to Surgery.*)

4. The *scrotal hernia* will give an impulse on coughing, is not translucent, may be reducible, may be resonant, is not fluctuating. The *hydrocele* gives no impulse on coughing, is translucent, is not reducible, is not resonant, and is fluctuating.

*Hernia* is the protrusion of an internal viscus through an abnormal opening in the parietes.

*Strangulated hernia* may be treated by taxis or by operation.

For *inguinal hernia,* many operations are practised, but Bassini's is the most useful. An incision 2½ inches long is made over the inguinal canal, exposing the structures of the cord and the external oblique. The external oblique fibers are split from the apex of the external ring to expose the canal. The sac is found, opened, emptied of its contents, and isolated from the structures of the cord up to the internal ring. If the hernia is irreducible, the intestine is freed and returned to the abdomen, omentum being ligatured and removed. The neck of the sac is then transfixed and tied with silk, and the fundus removed. The stump returns to the abdomen, three or four stitches are then passed through the conjoined tendon and arched fibers of the internal oblique and transversalis muscles above, and the deep part of Poupart's ligament below. These are tied behind the cord. The external oblique is then sutured in front of the cord, leaving just sufficient opening for it to pass through without pressure. The skin is then closed by a continuous stitch. The patient should be kept in bed for three weeks, and should not exert himself for at least six weeks. If the wound has suppurated, or if the case is one in which the abdominal muscles are weak, it is advisable that a light truss should be worn afterwards for six months." (From *Aids to Surgery.*)

5. A *tumor* is a pathological new growth which tends to persist independently of the tissues in which it is found, and which serves no physiological purpose.

An *adenoma* is a tumor formed of gland tissue.

An *angioma* is a tumor formed of dilated vessels (either blood-vessels or lymphatic vessels).

"*Dermoid cysts* of the simpler kind have a wall composed of the structures forming the skin and its appendages, viz., stratified squamous epithelium, dermis, hair-follicles with hair, sebaceous glands actively secreting their contents; also subcutaneous fat and sweat-glands. They are commonly met with: (*a*) in the skin of the scalp, or (*b*) attached to the periosteum and quite separate from the skin, above the outer angle of the orbit, (*c*) in the middle line of the floor of the mouth, below the tongue, (*d*) in the lines of the embryonic fissures in the neck, (*e*) in connection with the thymus, (*f*) in connection with the ovary in the female, and (*g*) between the bladder and rectum in the male. The more complicated dermoid cysts which merge into the teratomata are especially those connected with the ovary, with the base of the skull around the hypophysis protruding into the nasopharynx as hairy polypi, and with the spinal column."—(Spencer and Gask's *Surgery.*)

*Indications for removal of mammary gland:* Enormous hypertrophy, Paget's disease of the nipple, epithelioma of the nipple, carcinoma, sarcoma, cystic adenoma, diffuse tubercular or septic disease if breast is riddled with sinuses.

6. "When a wound is inflicted while dissecting, wash it under a strong stream of water, squeeze, and suck it to make the blood run, lay it open if it be a puncture, paint it with pure carbolic acid, and dress it with iodoform and hot antiseptic fomentations. Trouble, of course, may follow; often it is only local and a small abscess forms. It should be treated by hot antiseptic fomentations and early incision. Occasionally lymphangitis arises, adjacent glands inflame, and constitutional symptoms arise. It is rarely that true septicemia or pyemia arises unless the wound was inflicted while making a post-mortem upon a person dead of septicemia or while operating on a septic focus. If glands enlarge and soften it may be necessary to remove them surgically."—(De Costa's *Surgery.*)

In the early stage of an abscess, when suppuration is doubtful, treat as if it were an acute inflammation. When pus is evidently present, incise freely, open secondary loculi, swab out the pus, do not curette, irrigate with antiseptics and drain.

*Symptoms of psoas abscess:* "There may be none, old unsuspected psoas abscess being often found at the autopsy. Early symptoms depend upon irrigation of the lumbar nerve roots—namely, sciatica, cruralgia, or neuralgia of the anterior crural. Aching across the hip and back and the base of the sacrum; cramp, and at times paralysis. Inability to extend the thigh. Children merely complain of a pain down the thigh, and always carry it flexed. Deep pressure in the abdomen, along the semilunar line, reveals a vertical, sausage-shaped, tender, fluctuating, elastic tumor (mistaken for loaded bowels, but which does not roll from under the fingers). It may or may not reach Poupart's ligament and may be accompanied by a tumor of similar character in the iliac fossa. The abscess may run its course without any subjective symptoms, the extra abdominal tumor first attracting attention. When extra abdominal the usual physical signs show it to be abscess; and the impulse on coughing that it has intraabdominal connection; combined pressure above Poupart's ligament and over the tumor in, e. g. the thigh, reveals fluctuation. Psoas abscess is most likely to be overlooked when symptoms of spinal or sacroiliac disease are not coexistent."—(Heath's *Dictionary of Surgery.*)

*Psoas abscess may be confused with:* Loaded intestine, hernia, bubo, and abscess near or connected with the vermiform appendix.

7. *Epispadias* is a congenital malformation in which the urethra opens on the dorsum of the penis.

*Hypospadias* is a congenital malformation in which the urethra opens on the under surface of the penis.

*Phimosis* is the condition of the prepuce when it cannot be retracted over the glans penis.

*Paraphimosis* is the condition of the prepuce when it has been retracted behind the glans penis and cannot be replaced.

*Causes of phimosis:* A long narrow prepuce, a small preputial orifice, adhesions of the prepuce to the glans penis, balanitis, and herpes preputialis.

*Treatment of phimosis* is circumcision. In the operation of circumcision the prepuce is drawn well forward, and clipped with a pair of polypus forceps in front of the glans; the projecting end cut off; the cutaneous sheath allowed to retract, and the mucous membrane slit up along the dorsum as far as its attachment. Each half is then cut away, following the line of the corona, and leaving the frenum and just enough to hold a few sutures. If catgut is used, and the wound dried and covered with iodoform, the dressing may remain on until the skin has united.—(*Pocket Cyclopedia.*)

8. Fistula in Ano.—*Classification:* There are four varieties: (1) The *complete,* which opens into the rectum internally and on the perineum externally; (2) the *external incomplete* or *blind external,* which opens on the perineum but not into the rectum; (3) the *internal incomplete* or *blind internal,* which opens into the rectum but not on the perineum; (4) the *horseshoe* fistula, which extends around the rectum and opens on each side. The internal opening is generally between the two sphincters, but may be above the internal sphincter and below the external sphincter. There may be several pockets or side tracts extending in different directions.

*Treatment:* This consists in "the conversion of the fistula into an open wound so that it may heal from the bottom. A grooved director is passed through the fistula into the rectum, and the overlying tissues severed with a bistoury. The sphincter should never be cut more than once, because of the danger of incontinence. All branching sinuses likewise should be opened, and all fibrous tissue, with undermined skin, cut away with scissors. The bleeding is then checked, and the wound packed with iodoform gauze. If the fistula is lined with mucous membrane it must be completely excised. A blind external fistula may be excised and the wound sutured. A blind internal fistula may be converted into a complete one and treated as above. The bowels are confined for the first three or four days and the wound dressed after each defecation, being irrigated with creolin and repacked with iodoform gauze."—(Stewart's *Surgery.*)

*Operation for hemorrhoids:* Clamp and cautery. *Radical treatment* is advisable when there is much pain and bleeding. It must be ascertained first that the piles are not due to disease elsewhere, as cirrhosis or stricture, or to pregnancy. The bowels are emptied and the patient is placed in the lithotomy position. The sphincter is then dilated with two thumbs, to expose the piles, which are caught up with ring forceps. A clamp is applied to the piles in turn, and they are removed by the cautery. The bowels are kept confined for five or six days, when castor oil is given. Very little pain and no bleeding follow this operation. Removal can be done by snipping the mucous membrane around the pile and ligaturing its base. Crushing is also done.—(*Aids to Surgery.*)

*Shock* is the name given to a sudden and general depression of the vital powers due to some strong stimulation (such as injury or emotion) acting on the vital centers in the medulla, and producing vasomotor paralysis.

*Treatment of shock:* Place the patient in the recumbent position, with the head low, apply warmth to the body, administer a stimulant, and give a hot saline infusion; morphine, hypodermically, may be necessary for the relief of pain.

*General anesthesia* may be produced by: Nitrous oxide, ether, chloroform, ethyl chloride, by numerous modifications of the above agents, and by various sequences and mixtures.

*Nitrous oxide* is contraindicated in long operations, where absolute muscular relaxation is needed, in vascular degeneration, and advanced heart disease.

The following contraindications for ether and chloroform are from Hare's "Practical Therapeutics": "*Ether* should not be used by inhalation in bronchitis or acute nephritis, because of its irritant properties; in peritonitis or gastritis, because it is apt to induce vomiting; in aneurysm or in the presence of marked vascular atheroma, because it may rupture a blood-vessel by raising arterial pressure; nor in diabetes, lest it produce diabetic coma; and if anemia is present and an examination of the blood shows that the hemoglobin is below 50 per cent., the use of the drug should be avoided if possible.

"*Chloroform* is not to be used in cases of fatty heart or dilatation of the heart, in those with a known idiosyncrasy, nor in the so-called lymphatic persons with overgrowth of lymphoid tissues, as, for example, adenoids. In the latter case it is particularly apt to cause sudden death. In valvular disease of the heart chloroform may be used with caution, although ether is preferable. Given a case of valvular disease that must be subjected to operation, the chances are bettered with an anesthetic than without it, as the pain and mental shock are worse for the heart than is the anesthetic."

10. The following table (from Eisendrath's "Surgical Diagnosis") gives the diagnosis:

| COMA FROM INTRACRANIAL INJURY. | APOPLECTIC COMA. | UREMIC COMA. | ALCOHOLIC COMA. | OPIUM POISONING. |
|---|---|---|---|---|
| Deep coma. Evidence of fracture of vertex or base. | Deep coma; sudden onset. If any injury, only a scalp wound. | Deep coma. Slow onset unless convulsions have preceded. | Can be aroused by supraorbital pressure unless very profound | Can be aroused unless very deep. |
| Pupil dilated on side of lesion. Choked disc. | Pupils unequal or dilated. Contracted in pons hemorrhage. | Albuminuric retinitis. | Pupils normal or somewhat dilated. | Pupils contracted to pinpoint size. |
| Pulse very slow. | Pulse full and slow. | Pulse rapid. | Pulse rapid. | Pulse rapid. |
| Respiration slow and stertorous. | Respiration slow and irregular. | Respiration frequent and irregular. | Regular respiration. | Respiration very slow—may be 6 to 8 per minute. |
| Temperature higher—101°. | Temperature higher on paralyzed side. | | May be low or normal. | |
| Urine normal or contains albumin. | Urine contains trace of albumin. | Urine shows albumin, casts. | Normal. | Normal. |
| Hemiplegia on opposite side to that of injury. | Hemiplegia with convulsions on one side. | | | |

*Septicemia* is an acute general infection arising from the presence of pyogenic organisms in the blood. The *Streptococcus pyogenes* is the usual organism. Infection occurs through a prick, scratch, or abrasion, or through an operation wound. *Symptoms:* A rigor is often the earliest symptoms, followed by a rise of temperature to 104° F., which remains constant. The pulse is increasingly rapid and becomes weak. Diarrhea comes on later, while the urine contains albumin. *Diagnosis:* From sapremia, or traumatic fever, it is known by the fact that opening up and draining the wound makes no difference to the condition, whereas in sapremia the patient gets rapidly better. From pyemia, by the fact that there are neither repeated rigors nor secondary abscesses.

*Pyemia* is an infective disease characterized by rigors, marked intermittent fever, and the development of secondary abscesses. The organisms present are either staphylococci or streptococci. *Symptoms:* Severe rigors repeated at intervals of one to two days. The temperature rises to 103° or 104° F. and remains so for about an hour, then falls rapidly, accompanied by profuse sweating. The patient often becomes jaundiced, and signs of abscesses in the lungs, joints, etc., become apparent. The pulse becomes rapid and weak, the appetite is bad, and delirium follows. Infective endocarditis may occur. The secondary abscesses appear at the end of the first week, and form very rapidly. *Diagnosis:* No mistake can be made when a focus of infection is apparent. If such cannot be found it may be mistaken for malaria.—(From *Aids to Surgery.*)

## Therapeutic Hints.

Treatment of Psoriasis.—Haldin Davis states that the drugs which, taken internally, are of benefit in this disease, are arsenic, thyroid extract, and salicin. Of these, the oldest and most generally used is arsenic. It may be given in several different ways: (1) In the form of Fowler's solution, of which three to six drops are given three times a day after meals. It is conveniently prescribed with an alkaline bitter, as follows:

℞ Liq. potasii arsenitis, ♏ij-vj.
Sod. bicarb., grs. x.
Inf. gent. co., q. s. ad ℥ j.

The dose of arsenic is gradually increased by one drop every third or fourth day up to as much as 20 drops. (2) Arsenic may be administered in the form recommended by Kaposi, in the so-called Asiatic pill, the formula of which is as follows:

℞ Arseni trioxidi, gr. 1/20 to 1/10.
Piper. nigri, gr. ¾.
Acaciæ, q. s.

Kaposi used to give a course beginning with three pills a day and gradually increasing to eight or ten. He would push the drug until four to six hundred pills had been taken. It is doubtful whether it is advisable to push arsenic to such a point; as a rule, if arsenic is of any benefit at all, small doses are sufficient. Sometimes good results are obtained from the use of thyroid extract, which, however, should be given cautiously. One grain, twice daily, is sufficient as an initial dose. Salicin is useful in the initial stages of psoriasis in limiting the hyperemia. Recently Sabouraud reports good results from the injection of enesol (a combination of arsenic and mercury with salicylic acid) in doses of ½ grain twice weekly.

The external treatment of psoriasis is more important than the internal. It is frequently effective unaided. The first essential of the treatment is the removal of all the scales, which should be done daily with the liberal use of soap and water, and warm baths containing sodium carbonate, two drams to each gallon of water. If the scales are hard and dense, they may be removed with the use of olive oil containing five grains of salicylic acid to every ounce. After the scales have been removed, one of the derivatives of tar should be applied in the form either of a lotion or of an ointment. A useful preparation is liquor picis carbonis, of the British Pharmacopœia. This contains prepared coal tar (picis carbonis), 1 part, in tincture of quillaria, 5 parts. It may be used in a solution in the strength of a dram to a pint. Such a lotion is useful in widespread eruptions. The following ointment is also useful:

℞ Liquor picis carbonis (B. P.), grs. viij.
Hydrarg. ammon., grs. x.
Petrolati, q. s. ad ℥ j.

Another tar preparation is anthrasol, which may be incorporated in an ointment as follows:

℞ Anthrasol, ℥ j.
Petrolati, q. s. ad ℥ j.

Oil of cade may be used in the strength of one dram to one ounce of petrolatum. Salicylic acid is useful for its power of reducing hyperkeratosis. The following is a good formula:

℞ Acidi salicylici, grs. xv.
Ichthyol, grs. xxx.
Petrolati, q. s. ad ℥ j.

The most powerful local remedy is chrysarobin, which should be used with caution. It should not be used near the eyes, for it may cause a severe conjunctivitis, nor on the scalp, for it stains the hair. It is best used with the patient in bed, or at all events, kept under constant observation. In the beginning it should be employed tentatively on one limb only. Chrysarobin may be combined with tar, as in Hutchinson's formula:

℞ Chrysarobin, grs. xxx.
Hydrarg. ammoniat., grs. x.
Liq. carbonis detergens, ♏xx.
Petrolati, q. s. ad ℥ j.

This should be rubbed in every morning vigorously and the part should be covered with a bandage. If well borne without excessive irritation, its use should be gradually extended over the whole of the affected area.

In the case of psoriasis of the scalp, the latter should be shampooed frequently with a spirit soap. Chrysarobin cannot be used on account of its staining properties. Tarry compounds should be applied, preferably in the form of a lotion, such as the following:

℞ Anthrasol, ℥ iv.
Tinct. quillajæ, ℥ ij.
Spir. vini, ad ℥ iv.

This may be applied by means of a stiff brush, for example, an ordinary tooth brush.—*Universal Medical Record.*

Treatment of Eczema in Young Infants.—According to P. Rudaux, A. Grosse and V. le Lorier, infantile eczema is almost invariably a manifestation of overfeeding. The treatment, therefore, is chiefly one of regulating the diet. For the local treatment the following salve is recommended by Sabouraud:

℞ Zinc oxide, 7 grams.
Vaseline,
Lanolin,
Sweet almond oil, of each, 10 grams.
—"Thérapeutique Obstétricale."

The Rationale of Squill as a Diuretic.—A. Pic and S. Bonnamour state that squill should be included among the direct diuretics, which have an elective action upon the elimination of urea by the renal cells. In cases of nitrogen retention, squill increases diuresis, but causes to a greater degree an increased elimination of urea.—*La Presse Médicale.*

Treatment of Herpes Gestationis.—P. Rudaux, A. Grosse, and V. le Lorier outline the following treatment of this form of gestational autotoxemia: (1) Rest in bed. (2) Absolute milk diet. (3) The use of laxatives daily, or of purgatives every three days with saline enemata on the intervening days. (4) A warm starch bath lasting one-half hour every day or every other day. (5) The use twice a day of the following lotion:

℞ Chloral hydrate, 10 grams.
Distilled water, 1000 c.c.

After this, the application to the itching parts of a powder, made up as follows:

℞ Salicylic acid, 1 gram.
Powdered starch,
Powdered talc, of each, 50 grams.
Zinc oxide, 10 grams.

If the itching is intolerable, it may be necessary to administer chloral hydrate internally. In case the stomach does not tolerate this drug, it should be given per rectum in doses as high as 2 grams, dissolved in boiled water or milk.—"Thérapeutique Obstétricale."

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## Original Articles.

### THE WORK AND NEEDS OF THE ACADEMY OF MEDICINE.*

BY WILLIAM M. POLK, M.D.,

NEW YORK.

FELLOWS OF THE ACADEMY:

I beg to acknowledge my indebtedness for the great honor conferred upon me in making me your president for a second term. In order that you may recall what was done during the two years just closed, I will submit a statement briefly covering our activities in this period. In the field of pure science the most noteworthy contributions received by us came from Professor Loeb of the Rockefeller Institute and Professor Rubner of the University of Berlin. The latter presented here for the first time certain observations in associated concrete form relating to the "Life of a Cell," which he himself had made but recently. The value of the contribution and the interest which it aroused was fully attested by the number of distinguished biologists present at the meeting and the close attention given to what, of necessity, was a highly technical presentation of a difficult subject. The genius of the investigator was in evidence in the clear and simple manner of this presentation of his labors.

The year before (1911) we had heard an equally interesting and instructive discourse on "The Rôle of Salts in the Preservation of Life" by Professor Loeb. His accomplishments in this particular field had already won for him a first place in the ranks of those seeking for the beginnings of cell life, so that having had placed before us by Professor Loeb himself a masterly presentation of his discoveries in this fascinating field, we may count ourselves as having in both instances fulfilled to the letter the purposes of the Carpenter Lectureship, under which they came. Bearing upon this subject of cell life and coming between the expositions of Professor Loeb and Professor Rubner, we had demonstrations from Dr. Carrel upon the preservation and extension of cell life in so-called dead tissues, through the aid of cold storage. Taking in connection with this latter work, certain accomplished facts relating to the transplantation of tissue and even organs, and viewing it all in the light shed upon cell life and proliferation by the papers of Professors Loeb and Rubner, ample inspiration was furnished us for thought and effort in the highest realms of biology. Pure physiology on the one hand, and its direct connections with the every-day problems of surgery on the other were much more than suggested—they were pointed out.

In the presentation of his work bearing upon the "Pathogenesis of Goiter in the Lower Animals," the Chief of State Laboratory for Cancer Research at Buffalo added to our fund of information concerning the still mystifying thyroid gland. One of the programs presented by the Section on Otology and another by that on Neurology and Psychology were papers relating to the physiology of the semicircular canals and to the results of stimulation and extirpation of these canals. If these papers could have been brought closer together in a joint meeting, for instance, it would have been advantageous. This suggests a defect in the correlation of your sections, against which some provision must be made. Another most interesting question discussed before us was some of the concepts of the Freud School of Psychopathology. Ably presented by our guest, Professor Putnam of the Harvard School, it was earnestly and with like ability reviewed in discussion by some of our members. The frank treatment given the subject on that occasion was an admirable illustration of the type of presentation and analysis questions brought here are entitled to and which with few exceptions they receive. I am happy to report that cheap subjects cheaply presented are rare at your meetings.

In the domain of "applied knowledge" we have also been fortunte. For instance, under the head of causation and nature of disease, we class the papers on developmental affections, such as deaf mutism and those on embryonal vices as the basis of certain gynecological diseases. Under the same head the paper on autointoxication as a cause of eye diseases; also the papers on recent advances in our knowledge of cardiovascular diseases, and reports of experimental work upon the problems of pneumonia and of poliomyelitis; observations upon new diseases, and new aspects of diseases already differentiated and registered. New remedial agents, such as salvarsan; and new routes for applying treatment, such as is implied in duodenal alimentation; and the reason for and the need for more extended use of psychoanalysis. And when to this list of subjects, all presented in a manner in keeping with the repute of the distinguished speakers, we add those belonging to general surgery and its divisions, including therewith the demonstrations of increased efficiency of radiology in the domain of intestinal surgery, I am sure we find that the primary purpose of the New York Academy of Medicine has been again lifted up and advanced.

It is necessary to bear all this in mind, because in some respects during the past two years this academy, perhaps oftener than heretofore, has stretched out its hand to influence conditions relating more to the welfare of the community along general and sociological lines, but which bore upon the causation or otherwise of one or more particular diseases with which it might be concerned. It has done this through the activities of its committee on "Hospitals, Budget, and Public Health."

*Address of the President delivered January 2, 1913.

The committee has been actively represented by the chairman and members of the committee on the following occasions:

At the hearings before the Legislative Committee on the Charter.

At the meeting on Outside Cooperation with Public Schools, arranged by the President of the Board of Aldermen.

At the conferences on various phases of administrative health work with the commissioner and the officials of the Health Department.

Twice at the hearings before the Committee on Elementary Education of the Board of Education with reference to the need of physicians for general school hygiene and the examination of mentally defectives.

At the hearings before the Board of Estimate and Apportionment in 1911 and 1912 on the budgets of the Health Department, the Department of Bellevue and Allied Hospitals, the Department of Charities, and the Department of Education.

At the conference on nursing.

At two conferences on the subject of bettering the health conditions in the public schools.

At the conference on ventilation arranged by the Association of Heating and Ventilating Engineers, the New York Association for Labor Legislation, and the Special Committee on Ventilation of the Department of Education.

At the hearing before the Mayor on the Aldermanic Cuts in the Budget for 1913.

At the hearing on the bills to be presented at the next meeting of the Legislature by the Factory Investigation Commission.

At the Fifteenth International Congress of Hygiene and Demography.

*Publications.*

The report on the Need of a Contagious Disease Hospital in the Bronx was published by the Committee at its own expense and submitted to the members of the Board of Estimate and Apportionment, various civic bodies, and the newspapers.

The report upon the Health Conditions in the Public Schools of New York City was published in the MEDICAL RECORD of August 30, 1912.

The report on Vital Statistics and the Health Reports of New York City was published in the MEDICAL RECORD, November 23, 1912.

The report on the need of transferring the Quarantine at the Port of New York to Federal control is to be published in the *Journal of the American Medical Association*.

This committee has also been cooperating with the following agencies:

The Babies' Welfare Association.

The Public Education Association Committee on the Hygiene of School Children.

The Special Advisory Committee of the Department of Health on the Administrative Control of Typhoid Fever.

The Special Advisory Committee of the Department of Health on Milk Inspection.

The Joint Committee on Occupational Diseases appointed by the New York Association for Labor Legislation.

The Board of Estimate and Apportionment Special Committee on Hospital Inquiry.

Requests for cooperation were received from the Laity League of the New York Federation of Churches with regard to Sex Education and from the Conference of Social Workers relating to the matter of employment of the physically handicapped.

The Board of Inebriety.

The Municipal Civil Service Commission.

Russell Sage Foundation in the matter of autopsies.

The actual inspections covered in this work, such as gathering of evidence, examinations of reports, interviews with heads of departments and sifting of evidence, etc., involved a great deal of labor on the part of the members of this committee, all of which has been rendered in that spirit of unselfish devotion to the higher purposes of our profession, which this self-seeking age was beginning to view as an aspiration on our part too seldom realized. This committee has been most fortunate in its executive secretary, Mr. Lewinski-Corwin, who so ably fulfilling the requirements of his office has enabled the committee to present its conclusions in such form as to carry conviction in many instances, and always to command attentive and respectful hearings. In deciding to continue this committee your council has acted for the best interests of your association. It is necessary to remember, however, that this work is such that the funds of your academy would be unable to meet the expense involved. This is done by one of our most generous and open-hearted citizens, to whom we are especially indebted for enabling us to do work of this nature.

It is becoming more and more evident, because of the position medical expert testimony has been made to assume in our courts of law that our profession has been put in a position before the public far from that intended for it, and some distance from that best for seekers after truth, the whole truth, and nothing but the truth. No doubt the rights of the individual and "due process of law" work together to force the expert witness from his proper position as an impartial expounder of medical, surgical, or chemical facts into that of associated council or even advocate for the side which he serves in the controversy. A most distinguished jurist of the State, one who has been active in efforts to reform court procedure in this matter, gave us a year ago the benefit of his presence and an address on the subject.

An outcome of this meeting was a committee of your members who, after study, made recommendations which were adopted by you. The purport of these resolutions was to the effect that a medical expert should not act in the rôle of counsel as well as witness in the same case. Of course, such a restriction cannot be enforced by any action which this or any other medical organization might take, this can be done only through legislation. Such being the case the only remedy open to the profession of medicine is the acknowledgment that under our system such a thing as an uncolored, unbiased statement of facts in any case of legal controversy is not to be expected from any medical expert who holds the dual position of witness and counsel; because he will consciously or unconsciously so far merge the witness into the advocate as to lose touch with the accepted facts of medicine and surgery which bear against his own side, in the vividness with which he recalls and presents such as favor it. In other words, while we have many very able medical expert witnesses, who as paid retained witnesses, have a most important and desirable place in our Courts of Justice, and who sho ld

be paid as they now are by the parties to the suit who employ them, we have few, very few, medical experts in the sense of one who is so placed that he can give, unbiased, uncolored interpretations of the medical and surgical problems submitted before the law courts, regardless of the two sides of the controversy. The position which the paid witness assumes becomes fundamentally a matter between himself and his employers—and seeing that it is difficult for such a one to maintain our professional standards for the expert, in proportion to his activities in upholding the requirements of his client, would it not be better pending legislative relief, to rank such witnesses, not as "medical experts" but as "medico legal experts." The first to be an employee of the court, the latter an employee of parties to the controversy. So far we have only the latter, "medico legal experts."

Another sore spot with our profession is the pernicious practice known as "secret fee splitting." We have met this for ourselves in our own way, by the series of resolutions passed by you last year. But after all, is this enough? It should be, so far as your own ranks are concerned. But one can imagine cases in which even for your own protection your own measures might prove inadequate. It is interesting to learn that something is being formulated in this State which may put us in touch with machinery for dealing with delinquents, which will resemble similar machinery in the profession of law.

The legal profession protects itself through the powers of the Appellate Division of the Supreme Court, before which an offender against the ethics of that profession can be brought and disciplined, even to the extent of expulsion from the courts. The Board of Regents in this State is the only body which controls the licensing of practitioners of medicine, therefore it is the only body competent to deal with offenders whom our powers fail to reach. It can do for us what the Appellate Division does for the Law.

The picture of two or more practitioners of medicine counseling together in secret, concerning the fee their common patient is to be called upon to pay, not for all the service rendered by the combination in the given case, but for that to be rendered by the consultant plus the amount added to his fee to meet the commission granted and expected by the so-called family doctor for bringing the patient to this consultant, is not pleasing. It is easy to see how any consultant who adopts this course can soon secure a following of "family doctors" who, caught in the contagion of this debasement, join in the common debauchery. We have here nothing less than a conspiracy against the one person the ethics of our calling command us to protect. And the way of protection is so easy—simply admit the patient or his representative to the conference. There then can be no breach of confidence, no conspiracy, therefore nothing calling for reprehension. Is not "secret fee splitting" so serious a threat to our professional integrity, so detrimental to the standing of our profession, that this body would be evading its duty were it not to ask the Board of Regents to seek such legislation as would permit it to withdraw the license to practise from any one proved guilty of the offense? I think it is, and I am sure we would shirk our duty did we not seek such legislation.

Whether we would or not this academy holds a position in this city which makes it a vital necessity not only that it should hold and maintain high ideals within itself, but should do all in its power toward this attainment throughout the entire profession. Through our committee dealing with public questions, and whose activities have already been placed before you, we aim to gain public confidence by showing that we are striving for the good of the whole along the broadest paths which have been opened up by the science and art of medicine. The hands which we stretch out to them must be free from the suspicion of questionable gain, especially at their expense. In all our relations with them we must play fair as well as talk fair.

At the present time we are soliciting aid from the public toward a new building for this academy. This movement was taken up some three years ago, the initial effort being confined to seeking aid from our own members and such other members of the profession as we could interest in the endeavor. The treasurer has already submitted to you a statement upon this matter, but it is in place to summarize this statement here. Subscribed to date chiefly by our members $123,275; paid to date, December 23, 1912, $64,800, which with interest to date, makes $67,800.

This with our other assets makes one feel that within the year we may be able to begin definite work toward the fulfillment of our demands for a new building. You realize that the most insistent demand comes from your library, the force of which you will readily appreciate when I read you this extract from the report of your library committee:

"We offer for your consideration a statement of the growth of the library and its activities based on a detailed study of the records of the past twenty years.

1892-1912: Books acquired have increased 250 per cent.
Pamphlets acquired have increased 440 per cent.—35,600 to 140,263.
Readers have increased 165 per cent.—7,752 to 20,548 per annum.

1902-1912: Circulation of books and periodicals. Has increased 168 per cent.—2,736 to 7,353 per annum.

1892-1912: Salaries have increased 116 per cent.—$5,564 to $12,062 per annum.
Library expenses have increased 57 per cent.—$2,829 to $4,459 per annum.

As will be seen the library has grown in all its departments at a rate which is beyond the estimates, and as a fact more rapidly than any other medical library in the country. It is a matter of satisfaction to see that this has been accomplished, and that the efficiency of the library has been maintained, at a proportionate cost decidedly less than in other libraries."

The combination which the Academy of Medicine presents is this: The largest purely medical library in the country, one administered in the best manner so as to meet the demands not only of our own members, but of the profession at large and of the public and which is united with activities which cover every phase and department of medicine, most of which it controls and all of which it houses. All this requires better accommodation than we now have. We must provide it as soon as we possibly can.

# A FURTHER CONTRIBUTION TO THE ACTION OF LACTIC ACID BACILLI ON THE PERCENTAGE OF GLUCOSE IN THE URINE IN DIABETICS.

By PHILIP HOROWITZ, M.D.,

NEW YORK.

In my previous report* of the cases treated with a culture of *Bacillus bulgaricus,* I mentioned three cases, the first in which I had tried the culture, with the result that the first two appeared to be entirely rid of the glucose from the urine, and the third was still showing traces. I have kept in touch with the cases and beg to report further that in case 1 the patient shows no glucose although he has been without treatment for eighteen months. During this time he has lived on a normal unrestricted diet, eating all the carbohydrates he wanted, and using sugar for sweetening his tea and coffee and other articles of diet. The second patient has now been without treatment for sixteen months, has also been living on a normal unrestricted diet and likewise shows an absence of glucose. The third patient has been practically without treatment since November, 1911, except that he would occasionally take one dose of the culture. He has been living on an unrestricted diet, eating everything and drinking his beer daily. He has put on eighteen pounds in weight, does not have to pass his water often, going nine hours on a stretch, the time he is on the car. His urine examination on October 15, 1912, shows a specific gravity of 1,017, traces of albumin and indican, and 1 per cent. of glucose.

The following cases again show the same results that I have obtained with the first three cases reported.

Case IV.—H. A. V., age 43, civil engineer, native of the U. S. Family history is negative to rheumatism, gout, diabetes, etc. His father and mother are both living and well. He was never seriously ill. Six years ago he was in a railroad accident and had his back badly strained. The present history dates back to this accident, as far as he can remember. While he was convalescing from this he began to drink excessively and have frequent micturition. He lost flesh and his general health became impaired. On examination he was found to pass a considerable amount of sugar. He was put on a restricted diet which was kept up for four years. If he happened to be a little careless with his diet his sugar reappeared in large amounts. Today, July 23, 1912, his diet is free from cereals and sugar. The examination of his urine shows a specific gravity of 1,020, marked traces of indican, pronounced traces of glucose, and no acetone or diacetic acid.

Treatment.—The patient was put on a culture of the bulgarian bacillus, 4 c.c. t.i.d. before meals, diluted in a little water. This culture contained about 165,000,000 bacilli to the cubic centimeter. He was also given some purgative to get his bowels in shape and to stimulate the liver somewhat. His diet was fairly liberal. He was allowed cereals, green vegetables, animal broths, broiled meats, fermented milk, but no fruits.

August 2, 1912.—Patient feels very well. He ate four oranges yesterday to see if there would be any glucose in the urine. The examination of the urine shows nothing abnormal. The specific gravity is 1,017, no indican, glucose, acetone, or diacetic acid. The same treatment was continued.

August 13.—Feels fine, has had no headache since he began treatment, whereas previously he used to get headaches quite often. The urine examination shows a specific gravity of 1,020, and again no sugar, indican, acetone, or diacetic acid. The same treatment, and fruits permitted.

September 3.—Is perfectly well. He passed 40 ounces of urine in the last twenty-four hours. The specific gravity is 1,020, and no glucose indican, acetone, or diacetic acid found.

October 29.—Patient feels and looks very well. He passed a little over two pints of urine in the last twenty-four hours. The examination of the urine shows a specific gravity of 1,028, which is probably due to the small amount voided, and no sugar, indican, acetone, or diacetic acid. He has been practically without treatment since September 3.

Case V.—S. S. M., age 41, Baltimore, Md., native of Russia. Family history is negative to diabetes, rheumatism, gout, cancer, etc. Father, aged 70, and mother, aged 72, are living and well. One sister is also living and well. He had the ordinary diseases of childhood, otherwise has always been perfectly well. About three months ago began to suspect that he had "kidney" trouble because he began to pass a considerable quantity of water, and on a chemical examination of the urine sugar was found. He drinks a considerable amount of water, and passes as much as sixteen pints of urine in twenty-four hours. His appetite is exceptionally good, bowels regular, and does not complain of any headaches. He claims that he has lost fifteen pounds. Before he became ill he weighed 170 pounds and now only 155. The examination of the urine shows a specific gravity of 1,012, glucose 0.5 per cent. urea, 0.7 per cent, and a few calcium oxalate crystals. There is no acetone, diacetic acid, or indican.

Treatment.—He was put on 4 c.c. of a culture of *B. bulgaricus,* four times a day, one dose before each meal and on retiring. The diet consisted of cereals, green vegetables, broiled meats and chicken, chicken and mutton broths, tea and coffee unsweetened, fermented and soured milk, orange, apple, and grape fruit.

September 11.—He feels very much better. He does not pass as much water, and he does not have to get up at night. The bowels are regular. The examination of the urine shows a specific gravity of 1,018, no sugar or acetone, a small amount of indican. The urea has increased to 1.1 per cent. as against 0.7 per cent. He passed only forty-eight ounces in twenty-four hours. The same treatment was continued.

September 22.—Feels better, but is somewhat nervous. He is afraid the conditions will come back; he passes a little more urine than before. The examination shows the specific gravity to be 1,014, no indican, glucose, or acetone. The urea is low, only 0.7 per cent. Treatment the same.

October 6.—He has been drinking a little more water than usual and therefore is passing a little more, otherwise feels perfectly well. He passed about three quarts of water. The examination of the urine shows a specific gravity of 1,016, no glucose, indican, or anything else abnormal. Urea is now up to 1.1 per cent. The same treatment continued.

October 11.—Patient feels very well. Is not pass-

*Medical Record, March 9, 1912.

ing much water but thinks that he is probably losing some weight. His appearance, however, is good. The urine examination shows a specific gravity of 1,018, a small amount of indican, no glucose, acetone, or diacetic acid, and the urea is somewhat greater in amount, being 1.4 per cent. Otherwise the report is normal. The suspension of the *B. bulgaricus* was continued, and he was given 1/30 of strychnine with 5 gr. each of the glycerophosphates of lime and soda. He was also allowed a baked potato, plain boiled (plain) fish, and sour sugar-free wine at his meals.

November 10.—Feels very well. Gained 10 pounds in weight. Passed only 2½ quarts of urine in the last twenty-four hours. His appetite is not so good as formerly, but he thinks it is normal now. He eats everything but sugar; has had ice cream, cake, etc. In two urine examinations, since he was here, there was no sugar. Urine examination shows sp. gr. 1,020, urea 1.4 per cent., no indican, sugar, acetone, or diacetic acid. He is going to take a little more of the suspension so as to be absolutely certain of no recurrence.

Case VI.—J. C. P., Jr., age 45, St. Louis, Mo., native of the U. S. The family history is negative to diabetes. Father, 72 years old, suffers occasionally from rheumatism; mother is 70 years old and perfectly well. He had all the diseases of childhood; typhoid fever and malaria twenty-five years ago; rheumatism eight or ten years ago.

The present history dates back to four years ago. At that time he began to pass a considerable amount of water, had excessive thirst and appetite, and lost about 70 pounds in eight months. He had his urine examined at that time and was told he had between 8 and 9 per cent. of sugar. Today, August 15, 1912, he is still from 55 to 60 pounds under weight. He is very tired and fagged out. He passed 224 ounces in twenty-four hours. That is equivalent to about 15¼ pints of water, or almost 2 gallons. The examination of the urine shows a specific gravity of 1,027, very decided indican, 5.6 per cent. glucose, and no acetone or diacetic acid.

The patient was put on 4 c.c. of a culture of lactic acid bacilli four times a day; 4 c.c. one-half hour before each meal, and a dose before retiring. He was given a teaspoonful of calcined magnesia in one-half glass of water, t.i.d. His diet consisted of soft boiled eggs, four slices of white toasted bread a day, oatmeal and rice in moderate amounts, buttermilk, broiled steaks, chops, and chicken, plain boiled beef and chicken, chicken and mutton broths, and the green vegetables, as spinach, green peas, string beans, celery, lettuce, and asparagus, without sauces.

August 22.—Patient feels very well today, only somewhat hungry. He passed only 5 pints of water, and drinks very much less than he used to. The urine examination shows the specific gravity 1,025, glucose, 2.6 per cent., marked indican, and no acetone or diacetic acid. The same treatment was continued.

September 5.—Patient feels very well. Passes very little water. The examination of the urine shows the specific gravity to be 1,028, indican still very marked, glucose down to 2.4 per cent., and no acetone or diacetic acid. The same treatment was ordered.

September 25.—The patient has been home in St. Louis for the past three weeks. He writes that he passed only 3¾ pints in the last twenty-four hours as against 15¼ when he first started treatment. He drinks hardly any water, as he has lost the marked thirst which he had at the beginning. The examination of the twenty-four-hour specimen shows the specific gravity 1,016, no sugar, albumin, acetone, or diacetic acid, numerous uric acid crystals, and very strangely large quantities of indican. The last is not the rule. I have found that the glucose disappears after the indican has diminished or disappeared. Here the indican is probably high because the patient is on a very large protein diet. The same diet and treatment was continued.

October 10.—Received letter and specimen today. He writes that he is very much worried, as he passed only forty ounces of urine in twenty-four hours, also that he has been without medicine for a few days. The specimen on examination shows a sp. gr. of 1,028, urea very high, 3.2 per cent., indican marked, traces of sugar, no acetone or diacetic acid. He again passes large quantities of uric acid crystals. The patient has been on a heavy meat diet, and without his medicine has gotten up some intestinal putrefaction, hence the above report. The same treatment and diet continued.

October 18.—Writes that he feels somewhat worried, as he has lost three pounds in weight and feels very cold. He is coming to New York City.

October 24.—The patient has come East. He feels very much better and looks very well. He has lost some weight, but that he attributes to very hard work. He passes now only three pints in twenty-four hours. His blood pressure is practically normal, only 110. The urine examination shows sp. gr. of 1,018, urea of 1.7 per cent., very much less indican than the last time; no sugar, acetone, or diacetic acid. The following diet was formulated for him: Breakfast.—Some broiled steak, lamb chops or chicken, toast and tea, and grape fruit. Lunch.—Some meat as above, with lettuce, string beans, spinach or asparagus (sometimes a chicken sandwich). Dinner.—Same as for lunch. Allowed also Apollinaris or Vichy, and was also told he may have a half of a moderate-sized baked potato. The culture was increased to four doses each day of 16 c.c. each and a capsule given containing strychnine gr. 1/30 and 5 grs. each of the glycerophosphates of lime and soda.

October 26.—Feels very well, and thinks he has gained some weight. He ate some grape fruit, however, which he thinks had been prepared with sugar. Also had nine slices of toasted bread, rice, and potato. The examination of the urine shows faint traces of sugar. Cut the bread to six slices and warned him about taking any food prepared with sugar.

October 27.—The examination of the urine today showed a sp. gr. of 1,012, small amount of indican, no sugar, acetone, or diacetic acid.

October 28.—Feels very well; gained about three pounds since he came East. Ate ham, rice, and potato. Passes much less urine. The sp. gr. is 1,020, small amount of indican, and no sugar. Same diet was permitted.

October 29.—After eating more potatoes, eight slices of toast, and a considerable amount of chicken, nothing showed in the urine to-day. He gained one pound since yesterday.

October 30.—He took advantage of his liberal diet and more potatoes were eaten than permitted. He feels very well and passes very little urine. The urine on examination, however, shows a trace of sugar with small amounts of indican. Potatoes were prohibited, but otherwise the same diet.

November 4.—Patient sent a specimen from the West. He claims he feels perfectly well. The examination of the urine shows a sp. gr. of 1,020, urea up to 1.9 per cent., some indican, but no sugar, acetone, or diacetic acid. The same treatment and diet were permitted.

November 10.—The examination of a specimen received by mail shows sp. gr. 1,022, urea 2.1 per cent., small amounts of indican, no sugar, acetone, or diacetic acid.

November 14.—Feels very well. Weighs about the same. Has been eating about eight slices of bread a day, only half toasted, and a good deal of greasy food, as he could get nothing else while traveling. He passes no more than three to three and a half pints in twenty-four hours. The examination of the urine to-day shows sp. gr. 1,016, faint trace of indican, no sugar, acetone, or diacetic acid. Permitted him to have in conjunction with his other food, lean ham, bacon, hominy, or any other cereal he may desire.

Case VII.—Mrs. A. S., 58 years old, native of Germany. Family history is negative as regards rheumatism, diabetes, cancer, etc. She had rheumatism and sciatica fifteen years ago, and has attacks of indigestion very often owing to indiscretion in diet.

About the fifteenth of last August she began to drink very much, have frequent micturition, and suffer from an intense itching of the genitals. To-day, September 3, she believes she has lost about ten pounds in weight, and feels very weak and tired, although her appetite is excellent. Her bowels move daily, but she complains of marked distension and gurgling. She has to get up a few times at night to pass water. On examination she appears all fagged out, shows some loss of flesh. Her eyes appear somewhat jaundiced, and her tongue coated. The report by the chemist on a twenty-four-hour specimen shows an output of 64 ounces, sp. gr. 1,041, some indican, glucose 5.5 per cent., and small amounts of acetone and diacetic acid. The urea is also very low, 0.8 per cent.

The patient was put on a culture of the *B. bulgaricus* 16 c.c. at a time, four times a day, calcined magnesia, a teaspoonful immediately before meals. Her diet consisted of tea and coffee without sugar, rice and oatmeal in moderate amounts, wheatena and sweet cream, soured milk, and buttermilk. She was also permitted broiled steaks, chops, and chicken, plain boiled beef and chicken, and the green vegetables. Also four slices of toasted bread a day. She was also given an orange, apple, or grape fruit.

September 12.—The patient feels very much better. The itch is still very distressing, but does not come on as often. She passed only 48 ounces of urine instead of 64. She does not drink as much, and is not as feverish. She has, however, lost one pound more in weight. She now weighs only 159, whereas her normal weight is 170. She also complains of restlessness and an inability to fall asleep. She does not have to get up as often during the night. The report of the urine shows a sp. gr. of 1,036, glucose 4.5 per cent., no acetone or diacetic acid. The same treatment continued.

September 17.—Patient feels very much better, but still somewhat weak. The itch is much better, drinks less, and only passed 36 ounces of urine in twenty-four hours. She does not have to get up at night to pass water; she also is not so restless. She is able to take a nap in the afternoon, and if it were not for the weakness she would not think she is ill. The examination of the urine shows a remarkable improvement. The sp. gr. is down to 1,025, the glucose down to 1.88 per cent. from 4.54, five days ago. The urea is up to 1.2 per cent., and there is still present a small amount of indican; treatment and diet the same.

September 24.—Has been very tired the past week, having had considerable physical and mental strain. She had had her house renovated and painted. She did not eat in time, and claims that she had some trouble with her water. The day when she began to collect her water she was all in. She, however, did not have to get up at night to pass any water. Passed 36 ounces in twenty-four hours. The report shows sp. gr. 1,031, urea down to 0.7 per cent., glucose up to 3.03 per cent., and traces of acetone and diacetic acid. There was also a considerable amount of indican. Here we see an increase in the indican is accompanied by an increase in the glucose, and a return in the acetone and diacetic acid. Treatment and medication same excepting that meat was cut down to once a day, at noon only.

September 28.—Patient gained one pound in the last week, feels very well. She had a bad cut on the finger, which healed up rapidly.

October 2.—Did not feel as well last night. Vomited yesterday and was troubled with a diarrheal condition all night. Passed a large mass of yellow mucus. The examination of the urine shows a marked improvement. Passed 36 ounces in twenty-four hours. The sp. gr. is 1,022, urea 0.9 per cent., no indican, glucose down to 1.05 per cent., and no acetone or diacetic acid. Same treatment was advised.

October 7.—Feels very well, but lost three pounds in the last week. The urine again shows a marked improvement. She passed 32 ounces in twenty-four hours; the sp. gr. is down to 1,017, no indican, acetone, or diacetic acid, and the sugar is only 0.15 per cent. Here again the disappearance of the indican is accompanied by a corresponding diminution in the percentage of glucose. The same treatment and diet ordered.

October 15.—Feels perfectly well. Has no pain or itch. The bowels are regular, she has no thirst, looks very well, and passed 48 ounces of urine in twenty-four hours. She is now taking four tubes of 16 c.c. of the culture a day. The urine is practically normal except for pronounced traces of sugar. The sp. gr. is 1,018, urea 1.4 per cent., no indican, acetone, or diacetic acid. Treatment same.

October 24.—Feels very well. Claims she never felt any better. The bowels are normal, and she sleeps very well. She passed 36 ounces in the last twenty-four hours. Specific gravity is 1,022, urea 1.5 per cent., no sugar, indican, acetone, or diacetic acid. As an addition to her diet she was permitted to have a baked potato, six slices of toasted bread a day, and the same amount of *B. bulgaricus* ordered.

October 27.—The examination of a twenty-four specimen again showed an absence of glucose; additional diet continued.

October 30.—Feels very well, gained about two pounds in weight. The examination of the urine shows a sp. gr. of 1,017, urea 1.3 per cent., no sugar, indican, albumin, acetone, or diacetic acid. Same treatment.

November 1.—Feels very well, gained another pound. She thinks she passed a little more water

than usually. The examination, however, shows nothing abnormal. The sp. gr. is 1,012, no sugar, acetone, indican, or diacetic acid. Same diet and treatment ordered.

November 4.—Feels very well. She thinks she passed about three and one-half pints of urine. The urine examination shows a sp. gr. of 1,014, no sugar, indican, acetone, or diacetic acid; she was permitted a whole potato and seven slices of toast a day in conjunction with her other diet.

November 10.—Is in perfect health. Has gained two pounds. Passes very much less water. Has been eating whole potatoes and seven slices of bread. Urine examination shows sp. gr. of 1,020, no sugar, albumin, indican, acetone, or diacetic acid. Permitted to eat poached eggs instead of hard boiled eggs, one whole potato, and to continue with the seven slices of toast.

The following case is of very great interest, first because the patient gives a very bad family history, a father and two brothers having died of the condition, and a brother and sister are afflicted with it now. Secondly, the length of time that the patient has the disease, namely, for a period of almost fourteen years, and, thirdly, because the "oatmeal cure" on which the patient was for almost two years had little or no effects on the condition. The sugar was somewhat reduced, but the patient developed large amounts of acetone and diacetic acid.

Case VIII.—M. E. B., age 56, native of U. S. Father died of diabetes twelve years ago. One brother died of diabetes and one died in a diabetic coma. Mother living and well. One brother and sister have the disease. He was never very ill until thirteen years ago, but claims he was told he had traces of sugar twenty years ago. Present illness dates back thirteen years. Began with polyuria and polydipsia and burning pains in the feet and toes. This became quiescent for a time, but two years ago he became very sick. Passed from 2½ to 7 per cent. sugar; acetone and diacetic acid; sp. gr. as high as 1,047. He was in the hospital for two months and while there received the "oatmeal cure" and since then, which was six months ago, is on an absolutely restricted diet and for three days every month goes on the oatmeal treatment. Does not eat any bread at all. Now complains of bad burning of the feet and ankles and in great toe of right foot. Toe nails fall off and ulcerate. Does not drink much and passes only 2½ to 3 pints. He has lost sixty pounds in the last two years. Falls asleep as he is talking. Examination shows enlargement of the liver, coated tongue, eyes icteroid, feet tender, nails red. Weighs only 164 pounds. Urine examination shows sp. gr. 1,027, urea 0.7 per cent., considerable amount of indican, sugar 0.66 per cent., large amounts of acetone and diacetic acid.

Treatment.—Was given 4 c.c. of the suspension four times a day. Calcined magnesia 3i t.i.d. before meals, and a fairly liberal diet, consisting of toasted bread, rice, oatmeal, green vegetables, broiled steaks, chops, chicken, oranges, apples, and grape fruit.

October 12.—Patient passes very much water, about six pints, but does not drink much. He gained five pounds in one week and feels very much better. Examination of the urine shows sp. gr. of 1,020, urea 1 per cent., small amount of indican, pronounced traces of sugar, no acetone, and traces of diacetic acid. A very peculiar condition. Treatment: 3i of bicarb. soda four times a day. Diet and other treatment same.

October 19.—Was not feeling as well in the last two days. He, however, gained five pounds more in the last week, making a gain of ten pounds in two weeks. Passed 4¼ pints. Headache not as marked. Has no pain in liver which he complained of at the beginning. Urine examination shows sp. gr. 1,024, urea 1.4 per cent., small amount of indican, sugar 0.36 per cent. No acetone or diacetic acid. Treatment same.

October 26.—Feels very well. Is now able to go out to look for work, while at the beginning fell asleep while talking. Passed 60 ounces in twenty-four hours. Has been out since 7 A.M. looking for work. Sp. gr. 1,030, urea 1.4 per cent., considerable amount of indican, sugar 0.92 per cent., no acetone, or diacetic acid. Has been rather lax with diet and treatment and under severe strain, which probably accounts for increase in sugar output. I believe he did not carry out his treatment, as the indican is very much increased.

November 9.—Feels very well. Has gained another pound. Weighs now 175 pounds, while he weighed only 164 when he started treatment. Now he has no burning in the feet except when it rains. Passed 56 ounces in twenty-four hours. Has no thirst, appetite good, is eating six good-sized slices of bread a day. Eats also oranges daily, rice and oatmeal, meat three times a day in form of chops or steak. Was put on doses of 16 c.c. a day. Urine examination shows sp. gr. 1,028, small amount of indican, sugar 0.06 per cent., no acetone, or diacetic acid.

November 16.—Feels well. In fact, feels the best that he has felt since sick. Has no burning of feet. Was not as well at the early part of the week because ate something that upset him. Examination of urine showed sp. gr. 1,029, urea 1.1, considerable amount of indican, sugar 0.28, traces of acetone. Same treatment and diet.

November 23.—Feels well; weighs same; sleeps well and eats well. Has some trouble, however, with his stomach, a sensation of fullness and distress after eating. Passed 2½ pints.

Urine examination of November 30, 1912, shows sp. gr. 1,018, urea 1.4 per cent. Small amount of indican, no sugar, acetone, or diacetic acid.

Case IX.—Mrs. R., aged 47, native of Russia. No family history of diabetes. Had diseases of childhood and repeated attacks of rheumatism in the past few years. Never had any serious illness that should confine her to bed.

Present history began about two years ago when she had a general furunculosis. Her urine was first examined September 30, 1911, which showed an output of 2½ quarts in twenty-four hours. Sp. gr. 1,032 and sugar 5 per cent. She was put on a fairly liberal diet including rice and oatmeal, broiled meats and fowl, green vegetables and toasted bread. She was also given the Bulgaricus culture 4 c.c. three times a day.

November 17.—Feels very much better. The urine shows the remarkable drop of sugar from 5 per cent. to traces and the specific gravity from 1,032 to 1,024, indican traces, uric acid, and calcium oxalate crystals. Same diet and treatment. This condition kept up until May 11, with varying success. At one time the glucose was up to 0.74, and at one time was even absent. The specific gravity came down to 1,014. The reason for this oscillation was because of her husband's condition and financial trouble. If business was better the sugar came down to a minimum, showing the influence the nervous system had on the output of

sugar. But at no time, as patient admits, did she follow out the treatment properly. At times she even forgot to take her medicine. She disappeared and did not show up for treatment until November 1, 1912, when she brought a chemist's report under date of October 2, with the following findings: Sp. gr. 1,020, urea 0.9 per cent., indican traces, sugar 1.08 per cent., and traces of acetone. No diacetic acid and a few uric acid crystals. She feels very well. Weighs to-day 140 pounds, which is her usual weight. She passed 60 ounces in twenty-four hours. Does not drink much. She has another report of October 30, with sp. gr. 1,021, urea 1.4 per cent., numerous uric acid crystals, small amount of indican, and sugar 1.05 per cent. She was put on original diet, and was given 4 c.c. of culture t.i.d. before meals and one on retiring.

November 9.—Feels very well, and claims she is following treatment closely. She, however, lost two pounds, which she thinks is due to worry, as she fears her daughter of 18 years has diabetes—(her partial history appears as Case 12). Urine examination shows sp. gr. 1,022, urea 1.5 per cent., sugar 0.46 per cent., no albumin, acetone, diacetic acid, or indican. Same treatment.

November 17.—Feels all right. Appetite very much better. She has had some rheumatic pains. Urine examination to-day shows sp. gr. 1,016, urea 1.2 per cent., sugar 0.24 per cent., no indican, acetone, or diacetic acid. Continue same treatment.

November 20.—Feels and looks very well. Does not believe she is ill except for report showing the sugar. Passed 1,560 c.c. in twenty-four hours, which is about normal. The examination shows sp. gr. 1,019, urea 1.6 per cent., traces of indican, sugar 0.15 per cent., no acetone, or diacetic acid. Treatment same.

November 27.—Feels exceptionally well. Passed 60 ounces in twenty-four hours. The examination shows the sp. gr. to be 1,018, urea up to 1.9 per cent., small amount of indican, and no sugar, indican, acetone, or diacetic acid. She will be kept on same treatment until normal diet is re-established.

Case XI.—H. B. G., aged 57, native of Ireland. Father and two brothers died of tuberculosis, one sister died of diabetes, and mother died of old age. The patient had all the diseases of childhood; delirium tremens a few years ago. At the present time drinks about a pint of claret a day, and uses considerable tobacco.

Present history dates back twelve years, when he suddenly began to drink considerably, and had marked polyuria. He also began to put on very much weight at first, but he has lost between 60 and 70 pounds since. He was a very hearty eater, and developed an enormous appetite, and suffered from severe constipation. He bloats very much after eating, belches considerably, and at times has very severe headache. He passes about two quarts of urine in twenty-four hours at the present time. On examination he shows a very badly coated tongue, eyes markedly jaundiced, a loud systolic murmur, evidence of general arteriosclerosis, and a blood pressure of 230. The urine examination shows a sp. gr. of 1,029, urea 1.6 per cent., sugar 1.54 per cent., small amount of indican, and no acetone, or diacetic acid.

He was put on 16 c.c. of a culture of *B. bulgaricus*, t.i.d. one-half hour before meals, was given a fairly liberal diet consisting of cereals, green vegetables, eggs, broiled meats, tart apple, and grape fruit. For his high blood pressure he was given 2 grains of sodium nitrite, t.i.d., and a purgative water in the morning.

November 16.—He feels very much better, is not as distressed after eating, and does not pass as much water. He passed only three pints in twenty-four hours. He feels very much lighter. His tongue is still coated and his eyes somewhat icteroid. His blood pressure to-day is down to 180. The urine examination shows the sp. gr. down to 1,024, traces of albumin, urea 1.8 per cent., sugar down to 1 per cent. as against 1.54 per cent. a week ago. His liver which was at first quite tender is still somewhat sore to pressure.

November 23.—He feels better than he did in twelve years. He says that he feels as if life is worth while living. He is not as thirsty, but does not sleep as well. His tongue is clearer, has no more distress after eating, and his blood pressure is down to 175. He eats five slices of toasted bread a day, steamed rice, oatmeal, or wheatena, broiled steaks or chops, and baked apple. His urine examination shows sp. gr. 1,022, urea 1.9 per cent., large amounts of indican, and sugar down to 0.32 per cent. Treatment and diet same.

November 30.—Feels very much lighter on his feet, and can get around very much easier. Passed three pints in twenty-four hours, tongue almost cleared up. The urine shows a sp. gr. of 1,023, urea 2.1 per cent., traces of albumin, small amount of indican, and traces of sugar. Treatment and diet same.

December 3.—Feels very well. Cannot believe he was ever ill. The examination of the urine shows a complete absence of sugar, hardly a trace of indican, and sp. gr. 1,020. He has increased his toast to six slices a day, the remainder of the diet being the same. His blood pressure is down to 173. The sodium nitrite was discontinued. The diet will be gradually increased until he will be able to eat everything.

Before proceeding with the consideration of the action of the *Bacillus bulgaricus*, and its influence on the diminution of glucose in the urine, let us glance over the theories and views held by observers as to actual cause of diabetes mellitus, and the pathology found to exist. Ever since the experiments of Von Mering and Minkowski,[1] wherein they produced an experimental diabetes in the dog by the extirpation of the pancreas, all observers to a greater or less extent have agreed that the pancreas plays an important part in the production of glycosuria. The investigations of Opie,[2] Cecil, MacCallum,[5] and others in this country, and Schmidt,[3] Ssobolew,[4] and others in Europe, have shown that in almost three-quarters of the cases of diabetes that came to autopsy changes in the Islands of Langerhans were found. In some there was a sclerosis. In others a hyaline degeneration, and in still others a hypertrophy in the remaining islands that had not become sclerotic. As a result also of the fact that the Islands of Langerhans have no connection with the ducts of the pancreas, it has been argued that the pancreas has an internal secretion.

All agree that the liver is the organ that makes the sugar, or fixes and stores the sugar that comes from the intestinal tract through the portal circulation, converting it into glycogen. Further, that the liver reconverts the glycogen into sugar as it exists

in the blood in sufficient quantities to meet the needs of the body. Also that in diabetes due to the pancreatic insufficiency, the liver either manufactures too much sugar, or is unable to fix and store it, or the tissues are unable to utilize it, as result of which it is excreted by the kidneys and appears as a glycosuria.

Von Noorden,[10] in his latest lectures on "New Aspects of Diabetes," contends that diabetes is not a single morbid entity. He claims that he cannot consider that diabetes is caused by a diminution or an absence of an internal secretion of the pancreas, to the exclusion of all other concomitant factors. The nervous system, the adrenals, thyroid gland, and hypophysis all have an influence to produce glycosuria to a more or less extent. He considers the action of the pancreas as inhibitory on the liver preventing the latter from reconverting glycogen into blood sugar, or permitting the glucose to go right over into the general circulation. He agrees that in almost all the severe cases there is a pancreatic insufficiency. But while this is true, there are also factors, as exciting impulses from the suprarenals, nervous system, thyroid, etc., which tend to influence the increase of glycosuria. When the inhibitory influence of the pancreas is diminished, the stimulating action of the adrenals, etc., may act on the "sugar factory" to an increased output of sugar.

Labbé[6] defines diabetes essentially as disease of the glucose-regulating apparatus, which includes the liver, pancreas, and the nervous system. Their function is to limit the production of glucose and prevent its accumulation in the blood and tissues. When diabetes is present, the tissues are unable to utilize and oxidize the glucose, and the liver, incapable of storing it and retaining it in the form of glycogen. So that glucose passes into the blood, causing glycosuria, etc. This process is present whether the lesion is in the liver, pancreas, nervous system, or pituitary gland. But this disturbance is not in the same degree in all.

Blumenthal[7] believes that normally the glucose is destroyed in the organism by a specific ferment, which is present in all the tissues, and which is favorably influenced by the pancreas in an unexplained manner. Further, that this glycolytic ferment is carried by the leucocytes to the muscles and here activated by the kinase-like substance provided by the pancreas, and that any disturbance either in the failure of the pancreas to provide this kinase-like substance, or by the absence of this glycolytic ferment, causes this glycosuria.

So also both Hirsch and Cohnheim[8] found that muscle and pancreas together destroy sugar, but not separately; Cohnheim ascribes this action to a specific ferment. Possibly the two organs provide a compliment and intermediary body, or the process is probably due to an action similar to the action of Pawlow's enterokinase.

A. Gilbert and P. Lereboullet[9] assert that in what they describe as the pancreatic form of diabetes, there is a sclerosis of the interacinous and intraacinous vessels which ordinarily attacks the Islands of Langerhans, and thereby causes an atrophy and sclerosis of these islands. When this is analyzed it is seen to be a sclerosis of canalicular origin due to an ascending infection. This infection is an autoinfection, and those having this condition usually suffer from digestive disturbances. In the pathological changes described by Opie and others, we find a sclerosis or atrophy in the Islands of Langerhans in most cases, while in others, a sort of compensatory hypertrophy exists; there is usually an accompanying arteriosclerosis, and some have reported a colloid change in the thyroid; cirrhosis of the liver, and sometimes a deposition of pigment in the liver causing what is known as "bronzed diabetes."

What does the *B. bulgaricus* accomplish, and how? In comparing the urine analysis of the cases reported and numerous cases that are still under treatment we find that indican is almost universally present excepting in three cases that have distinct causative factors. That means that with few exceptions we have a putrefactive condition of the bowels with the formation of indol, scatol, cresol, and phenols, etc., and other numerous toxic substances for which we have no known tests. Secondly, in eliciting the histories from the different patients, we find that almost all have been good hearty eaters, who were not very particular as to the quantity and quality of food and how often ingested. By quality here is meant not poor food, but the kind of food and how prepared. So that we find firstly an intestinal tract that is already the seat of putrefaction, as is shown by the indican, and secondly, the ingestion of food that is probably easily putrefiable. Then again we are struck with the fact that not until we get a reduction in the amount of indican do we get a diminution in the percentage of glucose, and in the cases where for one reason or another we have a rise in the percentage of glucose, we likewise find an increase in the amount of indican excreted. So that there must be necessarily a connection between the amount of putrefaction and the severity of the glycosuria. Carl Funck[11] found in cases that he reported, an intestinal putrefactive disturbance even in serious diabetic conditions, and touches on the causal relation between the production of indigo-forming substances and sugar excreted in all cases of supposedly gastroenteric origin. Of course we occasionally come across severe cases of diabetes with an excretion of a high percentage of glucose and no indican. In those cases I believe the reaction of the intestinal tract has been changed by different forms of treatment from an alkaline to an acid condition as putrefactive bacteria with few exceptions will not thrive in acid media (Metchnikoff[12] and Jarvis[13]). Then also after treatment has been instituted we will always get some indican sooner or later. There are cases that have a large output of glucose which has come on after operations, or the ingestion of toxic drugs for a long time. I have three such cases now under my care which exemplify the condition thoroughly. The following are brief histories, as they are not through treatment:

Case XI.—G. H., age 23, native of United States. Stenographer by occupation. Family history negative to diabetes. Had most of the diseases of childhood, and appendicitis two years ago.

Present history dates back to the time she returned from the hospital. She began to drink very much and had polyuria. Used to pass one gallon of water in twenty-four hours. Weighed before operation 152 pounds; now about 125. She never had any headaches, and her bowels, while usually constipated, would alternate with spells of diarrhea, pains, and cramps. At that time was told she passed between 8 and 10 per cent glucose. She has been under treatment since then. Was on a very restricted diet and took large amounts of codeine. Examination of urine to-day, October 6,

1912, shows sp. gr. 1,041, urea 0.6 per cent., faint trace of albumin, glucose 6.25, large amounts of acetone and diacetic acid, but no indican. She now is under treatment for four weeks and her glucose, which at one time, the first week after beginning treatment, was 7.14 per cent., is down to 3.71 per cent., and the urine only showed small amounts of indican once after she had upset her stomach.

Case XII.—R. R., age 18, native of United States. Father had traces of sugar last year. Mother suffering from diabetes two years and is now still under treatment. The patient had all the diseases of childhood, and goiter which was removed fifteen months ago, three months after it made its appearance. Patient began to lose weight immediately after operation and has lost fifteen pounds in that time. Used to weigh 118 pounds and weighs now only 103. She began to drink considerably, excessive appetite, polyuria, headaches, frontal in character. Bowels constipated, and since last week has an intense itch of the genitals. Urine examination shows sp. gr. 1,038, urea 0.6 per cent., glucose 6.25, no indican, acetone, or diacetic acid. Since her treatment the glucose has come down to 2.63 per cent., but her indican is still negative. This came down in ten days.

Case XIII.—H. M. S., Jr., age 9. Native of United States. Family history negative to diabetes. Had whooping cough at age of 4, influenza at 5, at which time heart was somewhat affected. Had myocarditis with distinct murmur. This lasted for a few months and then cleared up entirely. Since that time, especially toward evenings, would get peculiar attacks of cardiac arythmia, slow pulse, irregular in force and almost intermittent. Nothing organic, however, was found. It was pronounced to be caused by an autotoxemia. This antedated the glycosuria.

Present history dates back to about 1½ years ago, after taking resorcin with HCL, accidentally, for about a year. It was then noticed that the child had polyuria, passed about 100 ounces in twenty-four hours, and on examination sugar was found up to 4 per cent. This summer acetone and diacetic acid were discovered. The sugar has been as high as 7.14 per cent., and only on a few occasions was indican discovered. The child has been under treatment with the Bulgarian bacillus since July, 1912, and his sugar is now down to 4.35 per cent. He feels very much better, is able to get around, which he was unable to do for a few months. He is also beginning to take an interest in things.

The first of the above cases came on after a severe appendectomy which was performed under ether narcosis and which probably caused a parenchymatous degeneration of the liver. The latter is now enlarged and tender. Whether the pancreas is involved or not we have no means of ascertaining. We can only see that she is improving rapidly and that her sugar output came down from 7.14 per cent. three weeks ago to 3.71 now, with a complete disappearance of acetone and diacetic acid, which was very marked at the beginning.

The second case is interesting from the fact that the thyroid is one of the organs that is included in the sugar regulating apparatus. The thyroidectomy was done under local anasthesia. She, however, gives a bad family history, both father and mother having at one time or other had diabetes.

The third case, while he gives a distinct history of an autotoxemia, still seems to me to have been caused by the ingestion of the drug. He had the condition for over six months and no symptoms of diabetes appeared, and these symptoms did not appear until he had been taking the drug for about a year. Then again with very few exceptions the urine never showed the presence of indican, and with an autointoxication continuing for over a year and a half it should have shown some symptoms long before the glycosuria made its appearance.

Von Noorden, Cecil, Labbé, and others claim that the thyroid has some influence on the causation of glycosuria. But in spite of the fact that the first was probably caused by ether toxemia, the second due to the failure or diminution of an internal secretion of the thyroid, and the third due to an irritation of the liver, etc., to the ingestion of a drug, they are improving rapidly under treatment with the Bulgaricus. Coming back to the cases showing indican, we find that the sugar decreases coincident with the decrease in indican, while in the last three cases just mentioned we have a reduction in the percentage of sugar without indican being present. Then how does the *Bacillus bulgaricus* work?

I believe that the action of the bacillus is twofold: Firstly, that of destroying putrefactive conditions, and secondly in correcting and aiding in the proper metabolism of the carbohydrates. We know that the liver by its biochemic action neutralizes many poisons of the aromatic and alkaloid groups against amino acids and ammonia by the formation of urea, etc. The aromatic acids combine with sulphuric and glycouronic acid to form harmless substances and also absorb the aromatics, particularly phenol, scatol, and indol, products of putrefaction. Indol combines with the sulphuric acid of the liver to form indoxyl sulphate, which is then allowed to go over into the general circulation, where it combines with the potassium radicle in the blood to form potassium indoxyl sulphate, or indican, and as such is excreted by the kidneys. Now when putrefaction goes on for some time, perhaps years, what occurs? We get up an autointoxication due to the absorption of toxins formed at the same time as indol, skatol, and phenol, and for which we have no known test.. This process is very slow and insidious as only minute quantities are thrown into the blood at one time. This chronic autointoxication causes an effect on the nervous system manifested by marked irritability, hypochondria, insomnia, etc., interferes with the function of the thyroid gland, parathyroids, suprarenals, and perhaps the pancreas as we have marked digestive disturbances; causes also an endarteritis and arteriosclerosis, which is also very often an accompaniment of diabetes. It also causes a hepatic insufficiency shown by the augmentation of ammonia, uric acid, purin bases, etc., excreted in the urine. So we have here all the conditions that are also present in diabetes, or are considered as causative factors by Von Noorden, Labbé, and others, who consider diabetes as being caused by a disturbance of the sugar regulating apparatus which includes the nervous system, suprarenals, thyroid, pancreas, and the liver, where the sugar is stored and only reconverted into blood sugar to meet the needs of the body. Then may not the sclerosis of the Islands of Langerhans be also caused by the same autointoxication? Is it not possible that we have a fibrosis occurring in the pancreas as we have in the circulatory system, as the endarteritis and arteriosclerosis? Funck states that "constant deficient functions of the stomach as in achylia, and chronic intestinal diseases, re-

sult in demonstrable pathological changes of the pancreas." A. Gilbert and P. Lereboullet, as quoted previously, claim that there is an ascending autoinfection of canalicular origin which attacks the Islands of Langerhans and causes a sclerosis and atrophy of same, and that this condition is present in people suffering from digestive disturbances. Is that not a condition that is present in autointoxication? So that the *Bacillus bulgaricus* by inhibiting putrefaction and destroying the putrefactive bacteria overcomes this autointoxication and thereby gets rid of the substances causing an irritation and disturbance of the sugar regulating apparatus.

The second thing accomplished by the *Bacillus bulgaricus* is in aiding or correcting starch metabolism.

In a series of tests made by me on starch digestion by pancreatic juice, both that of the dog and man, and carried out for a period of several weeks, I found that the digestion of the starch goes on very much slower in the presence of the *Bacillus bulgaricus* than when pancreatic juice alone was used. The bacillus generates free lactic acid, and in order to see whether this bacillus alone or the acid it generates interferes with the digestion, a solution of lactic acid, of similar strength to that present in the culture, was used with the same result as to the starch digestion. In other words, the Bulgarian bacillus generates the free lactic acid, and it is this acid condition of the bowels that interferes with the rapidity of the starch digestion. By thus lengthening the time it takes for the carbohydrates to be converted into dextrose very much less sugar is thrown into the circulation and very much less is to be excreted by the kidneys, until a tolerance is established for the carbohydrates. This goes on slowly until a normal tolerance is reached.

The following table shows what has occurred in the test mentioned and the actual time it took for the conversion of starch into glucose when the bacillus was used, when pancreatic juice alone, and when free lactic acid in same strength as the suspension was used. This table is one of a great number that has been made in conjunction with these tests. The test tubes with the solutions were kept in an incubator at 98.6° F. In some of the tests made I used blood serum and feces to activate the pancreatic juice, but the digestion was very rapid, and while the same conditions occurred as indicated below, the data obtained had to be taken in about a half hour, and the contrast was not as marked as in the one shown here.

| MIXTURE | 10:00 A.M. | 11:00 A.M. | 1:00 P.M. | 2:00 P.M. | 6:00 P.M. | 10:00 P.M. |
|---|---|---|---|---|---|---|
| 1. Boiled starch, 10 c.c. Pancreatic juice, 1. c.c. | Blue black reaction with iodine | Reaction to iodine somewhat lighter verging on violet | Faint reaction to iodine | Very faint reaction to ioidne | Does not react to iodine | Does not react to iodine |
| 2. Boiled starch, 10 c.c. Pancreatic juice, 1 c.c. Suspension B. Bulgaricus, 1. c.c. | As above | No change, blue black reaction to iodine | Gives violet blue reaction to iodine | Violet reaction to iodine | Purple reaction to iodine | Faint reaction with iodine |
| 3. Boiled starch, 10 c.c. Pancreatic juice, 1 c.c. Lactic ac. sol., 1 c.c. | As above | Blue black reaction to iodine | Gives violet blue reaction to iodine | Violet reaction to iodine | Purple reaction to iodine | Faint reaction with iodine |

Whether this lactic acid produced by the *Bacillus bulgaricus* also stimulates the internal secretion of the pancreas (the internal secretion is that which is supposed to inhibit the action of the liver in manufacturing more sugar, and allow it to go over into the general circulation), I cannot say. But I do know that in two cases where I gave dilute hydrochloric acid, and dilute nitro-muriatic acid in conjunction with the *B. bulgaricus* for a few weeks, the percentage of glucose increased, and when I went back to the bacillus alone, the percentage of glucose immediately began to decrease.

It may be true, as has been demonstrated by Pawlow, that an increased acidity of the intestinal tract causes an increased output of pancreatic secretion, and this is perhaps what occurred when the dilute hydrochloric acid and the dilute nitro-muriatic acid were given, and we got an increase in the percentage of glucose, showing that at least the amylopsin was increased. But the lactic acid generated by *B. bulgaricus*, as was demonstrated by the foregoing tests, slowed down and prolonged the time for the conversion of the starch into glucose.

*Conclusions.*—1. While we all agree that in cases that have come to autopsy, there are changes in the pancreas especially in the Islands of Langerhans, and that these changes are probably present in all cases of diabetes, with perhaps irritation and changes in the suprarenals, thyroid, nervous system, and hypophysis, still these changes are also caused by an autointoxication.

2. That in cases where there is no indican in the urine and no autointoxication we usually have definite causative factors producing the glycosuria as in thyroidectomy, ether narcosis with a probable parenchymatous degeneration of the liver, etc.

3. That in the majority of cases the indican output is in close relation to that of the sugar.

4. That by correcting and curing the autointoxication we remove the irritating influences on the sugar-regulating apparatus.

5. That *B. bulgaricus* destroys putrefaction and so overcomes the autointoxication.

6. That the bacillus changes the reaction of the intestinal tract from an alkaline to an acid condition.

7. That carbohydrate digestion is inhibited or is rather very much slower in the presence of this lactic acid.

8. That by thus lengthening the time of carbohydrate digestion only small amounts of sugar are formed and absorbed.

9. That by permitting only small amounts to be formed and absorbed, we gradually increase the tolerance for carbohydrates until a normal tolerance is established.

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# GONORRHEAL RHEUMATISM IN ARTHRITIC SUBJECTS.

## ITS CLINICAL FORMS AND THEIR TREATMENT.

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It may surprise the younger generation of practitioners to find that our knowledge of gonorrheal rheumatism practically dates back not more than twenty years. Since this protean affection gained for itself a place in nosology, clinical observation has gradually extended its sphere of influence and has made us familiar with its various clinical forms, from acute phlegmonous suppurative arthritis to chronic arthropathies of the rheumatoid type and rhizomelic vertebral ankylosis.

It must be admitted, however, that throughout the past century observers have suspected the existence of pseudo-rheumatism, side by side with the ordinary acute, frank, febrile, articular rheumatism. Bouillaud, for instance, as far back as 1840, applied the term pseudo-rheumatism to the joint affections met with in the course of various infectious diseases. Unfortunately, there was a good deal of confusion at that time between the different infections that gave rise to these articular manifestations, so that, although they suspected the existence of various "rheumatisms," they were not in a position to decide what was really acute articular rheumatism and what pseudo-rheumatism. We must, therefore, not be surprised to find that Bouillaud described as true rheumatism certain suppurative arthrites which, we now know invariably to belong to the group of pseudo-rheumatisms. Later Besnier proceeded on the same misleading lines, and Lasègue did his best to differentiate suppurative arthritis from true acute rheumatism, but their views did not commend themselves to contemporaries. At the Medical Society of the Hospitals of Paris, in 1866 and 1867, a debate took place on the subject which remains memorable in the history of medicine. The theory of pseudo-rheumatism, especially with regard to that of gonorrheal origin, carried the day in opposition to that of simple coincidence, but no agreement was arrived at as to the real cause of the arthropathies. Peter ascribed them to a manifestation of the common rheumatic diathesis under the influence of the gonorrheal poison. Fournier and Féreol maintained the gonorrheal origin, but Fournier was not disinclined to accept the existence of a reflex rheumatism of urethral origin, while Féreol rightly asserted its infective virulent character.

This is how matters stood until 1881, the date at which Bouchard delivered the course of lectures in which he defined the characters of pseudo-rheumatism and summarized his views in the following words: "All infectious diseases may present among their manifestations accessory articular manifestations distinct from true rheumatism and dependent upon the general infection of the economy."

The discovery of the gonococcus by Neisser in 1879 and the conception of infective pseudo-rheumatism promised to clear up the question. Such, however, was not the case. Discussion was resumed on the mode of action of the gonococcus on the joints; some observers who had only rarely discovered the gonococcus in the inflamed joints asserted the toxic nature of the arthropathies, an opinion which, as we shall show later, deserves to be rehabilitated in respect of chronic rheumatism; while others, having identified the staphoylococcus and the streptococcus, either alone or associated with the gonococcus, admitted the secondary nature of the acute pyarthritides. These discussions went on until the researches of Deuchmann, Landsmann, Vaquez, Stern, Jaquet, and Quéyrat showed the gonococcus to be invariably present when properly searched for in the articular fringes of the joints, in the course of arthrotomy, or by puncture by scratching the fringes with the needle.

It is now generally admitted that in most instances gonorrheal rheumatism is due to the localization of the gonococcus in the joints. We use advisedly the words "in most instances" instead of invariably, because it seems probable that a certain number of secondary infections give rise to acute pyarthritis, while, on the other hand, certain cases of chronic rheumatism running a slow apyretic course without any previous acute attack, may also be due to intoxication by the gonococcal poison acting on the joint structures or on the nervous system (rheumatism of nervous origin), possibly also on the vascular glands, especially the thyroid body. Certain instances of improvement of the joint manifestations consequent upon the administration of thyroid extract in cases of chronic gonorrheal rheumatism strongly suggest the view that the visceral damage may react secondarily on the bony system.

The clinical forms of gonorrheal pseudo-rheumatism, both acute and chronic, are very numerous. One of the most remarkable is the acute form simulating ordinary, acute, articular rheumatism. As a rule it is toward the end of an attack of gonorrhea, during the third, fourth, or fifth week, or, it may be, in the course of chronic gonorrhea, gleet, that the rheumatic manifestations supervene. The temperature rises and the joints become involved, but the difference between the true and false rheumatism is plain from the outset. In the latter there is wanting the red sore throat which is commonly present in true rheumatism. Then, too, each variety of rheumatism has its joints of predilection. In gonococcal pseudo-rheumatism we get, in the order of decreasing frequency, the hip, the knee, the smaller articulations of the foot, fingers and hand, the shoulders, and the sternocostal and temporomaxillary articulations. To begin with, a large number of joints are involved; those of the fingers, for instance, the knees and hips; then, in a second phase, the infection quits a certain number of them and tends to localize itself in one, two, or three parts.

Acute rheumatism, in fact, is polyarticular *ab origine;* whereas the other, though the onset may be polyarticular, soon becomes oligoarticular and settles in certain joints of predilection: the knee, the hip, the articulations of the fingers and the wrist. The temperature, high at the beginning, often remains at or about 100 to 100.5° F.; the urine is thick and high colored, but albuminuria is rarer than in true rheumatism. There are no acid sweats and no anemia as in ordinary rheumatism,

and the general health is much less affected. Locally, the joints are swollen, enlarged, and dematous; the spontaneous pain soon diminishes and becomes trifling, but is provoked by movement and is particularly severe when pressure is brought to bear on the ligamentary and scapular attachments inside and outside the femoral condyles, on the tibial and peroneal attachments of the lateral ligaments of the knee, the tibial and peroneal malleolæ in the arch of the foot, and, similarly, in the corresponding points in the joints of the upper limb. Slight intraarticular effusion is the rule. Sometimes, especially in the knee, it may be abundant, so much so as to distend the *culs-de-sac,* which then project beneath the skin. This state of tension is fatal to repose and causes distressing insomnia. Puncture of the lateral *culs-de-sac* affords great relief, and may be resorted to without hesitation provided it be done with the necessary antiseptic precautions. The liquid withdrawn is rather thick, of a greenish hue, is very fibrinous and readily coagulates. It contains leucocytes and polynuclear cells in more or less abundance. If the fluid is turbid and the polynuclear leucocytes obviously damaged (Widal), suppuration is to be apprehended.

The evolution of this form of rheumatism is often rather grave and our prognosis should always be guarded. Recovery without sequelæ is rare, and in most instances the arthritis tends to become chronic, with more or less ankylosis accompanied by amyotrophy of the crural when the joint affected is the knee and the calf muscles when it is the arch of the foot. These resist massage for a long time and greatly interfere with walking for weeks or, it may be, months. We are always justified in apprehending suppuration, even in the polyarticular forms. There is another generalized form characterized by vague pains in the joints, in the arch of the foot, and in the fingers and wrist. These are superficial and not spontaneous, and are excited by deep palpation over the capsular insertions and articular ligaments. These pains hinder walking, but they are often less severe during the daytime than on resting. Fournier used to say that the patient "unrusted his joints." The prognosis is benign so far as life is concerned, but these arthralgic forms are troublesome by reason of the tenacity and their refractoriness to treatment.

Lastly, there are monoarticular forms limited to the arch of the foot, the hip, but most frequently to the knee, manifested by hydrarthrosis setting in suddenly or coming on insidiously, pseudo-phlegmonous or even suppurative. Even more than in the polyarticular forms these monoarticular forms of acute arthritis become grave on account of their tenacity and their ankylosing tendencies. It is in the cases of suppurative arthritis described by Duplay and Brun and Lapersonne that we are apt to meet with the constitutional complications such as gonococcal endocarditis and meningitis which usually end fatally. Then, too, we must not forget that in the severe forms which end in ankylosis, instances are on record of secondary tuberculous infection of tissues previously damaged by the gonococcus.

Independently of these acute forms there is a chronic form of rhemuatism consequent upon either an acute or subacute attack of joint inflammation, or it may be primary. It may assume the appearances of rheumatoid or pseudo-gouty arthritis involving the fingers and smaller articulations, which swell and undergo deformation by reason of fibrous retraction until they come to look like bunches of carrots. It may attack the joints of the foot, causing talalgia, osteitis of the calcaneum or bony deformities giving rise to Fournier and Jacquet's gonorrheal flat foot.

Lastly, among the graver manifestations of chronic rheumatism may be mentioned rhizomelic spondylosis investigated by Pierre Marie, the gonorrheal origin of which appears to be fairly common. This disease entails complete welding together of the vertebræ with kyphoscoliosis of the cervicodorsal region. At the same time the shoulders and hips become ankylosed, though in some instances they are not affected, in which case we are dealing with the gonorrheal non-rhizomelic form (Guillain and Laroche).

In all these acute or chronic forms of arthropathy, muscular atrophy is the rule, and when well marked may introduce an element of gravity which has to be taken into account in formulating a prognosis. In some cases the amyotrophy is so pronounced as to dominate the scene. This is the amyotrophic variety described by Klippel, which, after all, is extremely rare. Side by side with the joints the synovial sacs and the serous bursæ may become involved, the bones may be the seat of osteitis and the skin may present various lesions: erythema nodosum, polymorphous erythemata, vesicular erythema and even that curious lesion known as Jacquet and Chauffard's gonorrheal keratosis. All the organs may be attacked by gonorrheal septicæmia, and it is in these grave forms that it has been possible to demonstrate the presence of the gonococcus in the blood of the patients. We may add, moreover, that these cases are exceptional when we bear in mind the great frequency of mild attacks of gonorrheal rheumatism.

The treatment differs according as we are dealing with acute or chronic rheumatism, and we will discuss these separately.

Acute polyarticular rheumatism is treated during the febrile stage by the administration of salicylate of sodium, a dram or a dram and a half in the twenty-four hours, or by aspirin, 20 to 30 or even 40 grains. These drugs may cause more or less gastric intolerance with nausea, vomiting and diarrhea in patients with delicate stomachs, but not infrequently this intolerance is due to defective methods of administration. Large doses of salicylate of sodium, for instance, require to be freely diluted in a large quantity of water (plain water or an aromatic infusion) so as to obviate irritation of the gastrointestinal mucosa. Sometimes, without its being in our power to offer any explanation of the occurrence, the salicylate treatment causes a sudden retrogression of the painful and pyretic manifestations and the axiom, once universally recognized, that the effect of the salicylate established the differential diagnosis between ordinary and gonorrheal rheumatism, must not be construed literally. This treatment, however, often proves unavailing, and not infrequently the symptoms run their course unchecked by the measures brought to bear. Aspirin seems to be the most active of the group, and when it fails, we must have recourse to other members of the antineuralgic group: antipyrin, pyramidon, quinine, etc., although this purely symptomatic medication has no influence on the underlying cause of the articular manifestations. Locally, apart from the employment of analgesic applications and counter-irritants, certain forms of gonorrheal arthritis call for special interventions. When the effusion

into the joint is copious enough to cause intolerable pain and persistent insomnia or threatens local mischief such as dislocation, rupture of the synovial membrane or spontaneous luxation, we must have recourse to puncture, repeated if necessary, in addition to active counter-irritation. As soon as the acute symptoms have subsided, early passive movements and massage will combat the tendency to ankylosis displayed by gonococcal arthropathies. In this way we may hope to avoid the "fixation in a good position" in a half gutter plaster splint recommended by surgeons, the object of which is bony ankylosis of the articular surfaces. It is only in the suppurative and exceptionally grave forms that we should have recourse to arthrotomy, either simple or followed by the application of iodine or chloride of zinc. Until quite recently these measures summed up the therapeutic means at our disposal.

Recent research has added a whole series of agents, some of which are still at the period of observation, but which should nevertheless be given a trial when the classical methods of treatment prove useless. To begin with, we have antigonococcic vaccination, brought forward in England by Wright,[1] who invented the method; by Maute,[2] and by Mainini.[3] It consists of the injection of dead gonococci, which causes the formation in the patients organism of antibodies which assist in establishing immunity. Wright's gonococcic vaccines are in the market and can be employed when for any reason it is not practicable to prepare a vaccine from the patient's own gonococcus. These vaccines are titrated, and it is easy to inject the dose of gonococci desired. At the onset Wright used to advise one to ascertain the opsonic index of the patient's serum, *i.e.* to ascertain the activity of the substances that assist phagocystosis. He had remarked that after an injection of gonococci these substances diminished in the serum for a time, subsequently rising to a higher level than that existing before the injection, and his plan was not to inject vaccine a second time until the subsidence of the negative phase. Unfortunately the opsonic index is a delicate matter, and it really does not appear to be indispensable. Mauté advises the first injection of 25 million gonococci, followed by a similar number four days later and 50 millions every five or six days thereafter. These injections are made into muscle and rarely give rise to any local or constitutional disturbance. In favorable cases the joint pain diminishes, the hydarthrosis undergoes absorption and the fever disappears. Unfortunately these effects are often conspicuous by their absence, and in any case chronic rheumatism is not amenable to the method. Still, in view of the innocuousness of these injections we can always give them a trial in grave cases, the only contraindication being too depressed a state of the general health which might render it unable to resist the vaccinal reaction. Apart from vaccination, mention must be made of seropathic methods. Rogers[4] (1906) employed in man an antigonococcus serum which is not as yet on the market. Failing this we might try antimeningococcic serum as recommended by Pissavy[5] and by Raymond and Chiray[6] in 1910 and 1911. The method consists in injecting 30 cc. of the Dopter and Flexner serum beneath the skin and repeating the injection every other day. In some instances these observers have noted the disappearance of the pain and effusion, thus enabling the joint to be early moved and obviating ankylosis. This treatment also seems to exert very little action on the chronic forms.

In this direction there remains the autoseratherapeutic method long since applied in the treatment of ascites and bacillary pleurisy. According to cases reported by Benasson and Ramond the method appears to be perfectly inoffensive. It consists in withdrawing some of the articular fluid and injecting it forthwith into the connective tissue to the extent of from 10 to 20 cubic centimeters either near to, or distant from, the affected joint. Ramond indeed has gone as far as to inject pus from a suppurating arthritis (1 to 2 cubic centimeters) after merely ascertaining by microscopical examination the absence of microbial elements. These observers are of opinion that the method makes for the absorption of the articular effusion, and it might be given a trial in cases with abundant effusion that recurs after repeated puncture.

On somewhat different lines are radiotherapy, thermotherapy and Bier's method, which may all be tried in obstinate arthropathies. With regard to radium, Dominici and Gy[7] have taken the matter up afresh quite recently, and they state that under its influence the pain diminishes rapidly and early movement may be resorted to, ankylosis being thus avoided. It is remarked, however, that the big joints are more resistent than the small ones and that in spite of rubber screens and paper placed between the skin and the x-ray apparatus one is apt to get superficial burns which, for that matter, heal readily enough.

In lieu of these forms of apparatus which are difficult to manipulate we may make use of radioactive mud (A. L. Renault,[8] Claude[9]) or radium poultices (radioplasm). This mud contains radium, lactium, and uranium. A thick layer of the mud is spread over the skin covering the joint, a layer of wadding is applied on the top of this, and the whole is maintained in position with a bandage for from six to twenty-four hours. The dressing is renewed daily for from eight to ten days. In some instances slight cutaneous erythema has been produced, necessitating suspension of the treatment. We might endeavor to prevent this by interposing a thick layer of gauze between the mud and the skin.

In conclusion, some reference must be made to injections of radium salts as made by Chevrier into the joint after the latter has been evacuated by puncture as completely as possible. Chevrier employs a solution prepared in accordance with the indications laid down by Dominici, injecting from 20 to 50 micrograms into each joint. He claims to have obtained favorable results especially in acute cases attended by much inflammation.

Bier's method has for object the production of passive venous hyperemia in the affected limb. For this purpose we may make use of a rubber band which is wound about the limb at a distance of about five inches above the sick joint. It must be tight enough to partially prevent the return of the venous blood, but not tight enough to interfere with the flow of blood in the arteries. Under these conditions the limb becomes hot, swollen, and of a fiery-red color (Bier). The band is removed in an hour or so, and the sittings can be repeated every day or every other day. Bier, Joseph,[10] and Hofmann[11] claim to have obtained excellent results from this treatment, but Hirsch[12] and Robin[13] failed to discover any benefit from it.

The hot-air treatment seems to me to be far more trustworthy, whether by means of douches or by placing the joint in a hot-air box. The temperature in the latter may be raised to from 175° to 210° F. for from half an hour to an hour at a time.

The limb is then seen to be covered with perspiration. It must be gently wiped and wrapped up in flannel so as to avoid a chill. The hot-air treatment is much easier to apply by means of electrically heated apparatus which enable us to obtain a much higher temperature while allowing of periodical inspection of the skin to see how it reacts.

Hot air has the advantage of being applicable at the patient's own home, but when possible even more satisfactory results are obtained by hydrotherapy; that is to say, the hot-water or hot-vapor douche. As applied at Aix-les-Bains the natural mineral sulphur water at a temperature of from 105° to 110° F. is applied in the form of a local douche for ten or fifteen minutes followed by appropriate passive movement and massage. In the Berthollet or vapor bath the limb is immersed in the atomized hot water for twenty minutes or so, then passive movement may be used, and also massage. This is indeed the classical method of dealing with joints that are partially ankylosed or are the seat of a low form of chronic inflammation. It is obviously inapplicable in recent and acute cases. Aerothermotherapy constitutes an excellent revulsive, and serves to diminish pain. Associated with massage it is unquestionably the most active method at our disposal for the treatment of refractory cases of arthralgia with or without ankylosis.

The chronic forms of gonorrheal rheumatism, in addition to the methods of treatment set forth above, in some instances call for special therapeutic measures. From the general viewpoint we must disinfect the genitourinary canal, and it should be borne in mind that many of these obstinate cases are consequent upon slight uterine affections or chronic urethroprostatitis. The local treatment of these affections is even more important than that of the inflamed joints. On the other hand, Leopold Lévy, Parhac and Papiniau and Viola have published notes of cases in which very marked improvement followed a course of thyroid treatment which, as we know, exerts a wonderfully good effect in certain cases of ordinary chronic rheumatism. We can therefore administer two-grain cachets of thyroid powder, from one to three to be taken daily, suspending the treatment in the presence of symptoms of intolerance. Lastly, from the local viewpoint, when the joint has become deformed, one might try the effect of thiosinamine or fibrolysin injections; for example, 2 cubic centimeters of the latter daily for a fortnight. Associated with massage and passive movement of the joint this method is capable of yielding very good results, though in the hands of Ramond and Chiray it does not seem to have proven satisfactory.

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## THE SANATORIUM OR THE HOME?

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The earlier period of the open-air treatment of tuberculosis in specially built sanatoria was frequently accompanied by extravagant claims for this mode of treatment, and often enough the public and the profession were led to entertain unwarranted expectations from the method. But it did not take very many years for this unduly roseate outlook to wane; the sobering influence of rapidly accumulating experience cleared the atmosphere very considerably; physicians engaged in the management of the disease learned to temper their claims for its merits by a wise conservatism, which was founded upon a better conception of the limitations of all methods and a more accurate knowledge of the type of cases in which benefit might be expected. The medical and lay world had arrived at a pretty accurate appraisal of the virtues and shortcomings of the newer system of cure; and in the last decade much energy and treasure have been devoted to further the scope and activities of organizations for the cure and study of tuberculosis. These efforts rested, and still rest, upon what is regarded the proven value of segregating sick individuals where they may obtain enlightened control and a precise, detailed regimen.

Our complacency received some rude jolts by the publication in the last few years of articles setting forth the alleged failure of methods which were regarded as the best that could be devised in the present state of knowledge and human endeavor. We were told that all our efforts and money had been expended in pursuing an *ignis fatuus;* that the end gained was nil as compared with the work and sacrifices involved in the undertaking. This was a cue for many partly informed individuals to put forth the claims of the stay-at-home policy, which, it was asserted, was capable of yielding as much good and requiring far less financial and other strains than the much-vaunted sanatorium treatment.

Surprising outcomes in cases denied the best environment occur frequently enough, and to some observers it seemed that there was justification for the anti-sanatorium attitude. We are all willing enough to concede the appositeness of the invariable argument used—the wrench from loving relatives and the cheerfulness of the family circle entailed by residence in a sanatorium; the saving of money; the avoidance of that tendency to institutionalism which so often accompanies the more popular form of treatment, etc.

If it could be even approximately demonstrated that the limited advantages of the home treatment offset those which are inherent in a "cure" pursued away from home, in formal institutions especially equipped for this one purpose, nothing further could be said. This has not only been done but contrary evidence is furnished by the very large number of patients who come to sanatoria after fruitless attempts to regain their health at home or away from home in unsupervised surroundings. The only lesson that the "home" treatment teaches is a realization of the gravity of the disease and the rapid havoc it may produce when the attempt is made to cope with it by any means save the methodical routine of an institution.

Were tuberculosis a disease of the prosperous, the well-to-do or the wealthy, a great deal more force would be given to the plea for the home as a fit place to subjugate an insidious enemy. Patients might more often be allowed to undertake the "cure" under their own roof-tree, or upon it. We physicians know well enough the sweet potency of gold in smoothing the pathway of the invalid, of conserving health, and in the right hands of fostering happiness. No one will gainsay that everything being equal, the tuberculous individual with means has a cruel advantage over his less fortunate brother. But it is so glaringly evident that the disease is most prevalent in those poorest off in worldly possessions! And how can we entrust the management of a difficult matter to those unfortunates who are not alone indigent but very often, as a corollary to their poverty, deficient in the enlightenment which is essential for the needed cooperation?

The financial aspects of the subject have been graphically depicted by Professor Irving H. Fisher, and his deductions have been accepted as well within the mark by most observers, medical and sociological. The mass of the sick tuberculous is made up of people of very slender resources and very often absolutely no resources at all. The attempt to restore such to the ranks of industrialism by means other than a sanatorium treatment—at least for a definite portion of time until the most menacing symptoms have been successfully overcome—must remain an uncertainty, a makeshift, incomparable in efficacy with what obtains in the systematic recourse to the dietetic-hygienic treatment as carried out in sanatoria throughout the world.

It is quite true that instances of recovery at home are observed—but not nearly so often as the tragic failures. Every physician and social worker in New York must concede this, for it is in evidence every day. Surprises greet us all the time in the treatment of this as well as other diseases. But surprises are not guide posts from which to take the right path, and we do not want to depend upon uncertainties when we go in for a fight. "The Lord is on the side of the man with the heaviest armaments" is an expression attributed to the cynical but profound Corsican, and we who are armed for the fray, no matter how imperfectly, are certainly better equipped for victory than those who spurn our chief accouterments.

The "home" treatment is supposed to resemble that pursued in the sanatorium in three cardinal things. If it were only ideal it would be the sanatorium treatment transplanted to the inglenook. These principles are fresh air, rest, and alimentation. I very much doubt if there exist many homes in which the first two can be even approximately brought near that completeness possible in a well-regulated institution. The home circle is not the place for such an experiment. Indulgent relatives and friends will see to it that there is not too much rigor in the one or the other, according to their lights, even if the temperament of the patient would make for complete docility, which is seldom enough the case. What can be said in favor of the best-intentioned ministrations of relatives, with a periodical visit from the family physician—though he be ever so accomplished—as against the daily, minute supervision which is exercised by sanatorium physicians and nurses trained in the management of such patients? And trained, too, in the subtle windings of the psychology of the chronically ill, who have to be both humored and repressed, observed and guided like children, and steered clear of the many pitfalls that encompass them!

We have figures as to the results of the sanatorium treatment of tuberculosis, just as we have data as to other measures in medicine and surgery. While it is quite the fashion to sneer at statistics, and although I grant that there are many fallacies that beset an inquiry relying too much upon figures alone, I do not know what medicine would be without the careful tabulation of cases and the results of treatment which form such an important item in modern science. We do not acknowledge ourselves fetish-worshippers when we make inferences from such sources.

Now the most conservative figures published by institutions situated in widely separated parts of the world and under varying climatic conditions give on the average of from 75 to 80 per cent. of improvement in health in cases treated; the betterment is classified in grades, from "apparently cured"—a term falling into disfavor—down to simply "improved." It is unfortunately true that we do not yet know the end-results in these differently classified cases; but this is a defect that inheres with still greater moment in the home treatment. It must not be lost sight of that the end-results do not depend upon the sanatorium except to a slight degree—the potent influence must always be in the home and social circle in which the discharged patient finds himself. If these influences are salutary so much the better the chances of the patient retaining that which has been gained. The sanatorium should not be held in default, therefore, if in a given case the final outcome is not as good as the classification upon discharge. Too many factors enter into the after-history of patients to make it possible for the sanatorium as now constituted to cope with them. But we have the right to utilize the sanatorium figures of results as indices of the possibilities, since these patients may be presumed to illustrate the tendency of nature to heal when given the proper assistance by man-made measures.

So far as I know no such statistics are available for the study of the effects of the home treatment. If such are kept by individual observers they must needs fall far short of that sufficiently imposing array which come under the ken of the institution physicians. I do not think there are many physicians in the cities who have constantly under close daily observation a hundred, two hundred and even three hundred people suffering from tuberculosis in various stages. I doubt, too, if they have at hand for careful study a daily record of the temperature and pulse rate, the quantity of the sputum and its bacillary content, whether these are constant or

fluctuating, regressive or progressive, the record of weight, the personal observations as to appetite and table habits, the peculiarities of patients' dietetic tastes, the method of eating, of playing, of resting, of exercising, of sleeping, and so on indefinitely in all the ramifications of daily life. The conclusions of men situated to do these things are certainly of value, and their opinion is overwhelmingly in favor of some closely regulated form of supervision, most feasible in a well-equipped sanatorium.

Most of the men connected with the institutional treatment of tuberculosis are conservative in the estimates which they make of the ultimate good accomplished. We are not unduly confident. We realize fully that to classify a patient as "arrested" is not the end of the song by any means. Only too often we discover the result to be not enduring. But again be it said, this puts no blame on the sanatorium, nor does it strengthen the claims of the home. A great number and variety of unfavorable factors are at work to vitiate the good that the sanatorium has accomplished. First and foremost is poverty; next perhaps comes weakness of character, and then we have to consider weakness of the body; when the last two are combined the struggle is hopeless. Our socialist friends like to blame what they call "The System" for most of the miseries of mankind. Certain it is that the modern organization of society makes the struggle for existence at times inhumanly keen for the able-bodied and energetic ones; and to this unequal struggle many tuberculous convalescents are compelled by necessity to return; its effects upon the benefits derived from a provisional course of sanatorium treatment are often blighting; and we are therefore all the more bound, in duty to our unfortunate fellow-beings, to increase the means of overcoming a tragically widespread disease and strengthening the resources which are at our disposal. This cannot be done by the home treatment—we must fight a highly dangerous enemy by counter-organization, and not revert to the individualistic type of existence of early times—when men were said to be better and happier, as to the truth of which I know not.

But the home treatment has its place, and a highly important one it is, in the post-discharge regulation of tuberculous individuals. When the time comes to make this possible in a systematic and thorough manner, on a necessarily gigantic scale, we shall hear less of the limitations of the sanatorium treatment, and the so-called home treatment will take its proper place in the battle line—a valuable rear-guard against surprise and a reserve force to fortify the positions taken in the earlier engagements. Those interested in the modern treatment of tuberculosis are beginning to realize the necessity for supplementing the sanatorium course with some form of post-discharge regulation of the patient. In some parts of the world this has been begun by the formation of farm colonies, the establishment of suitable industries in favoring localities and the like. But I am firmly convinced that success will come only when a helping hand—and a generous one—is held out to convalescent patients at their homes; for with nostalgia constantly exerting its powerful effects the best-laid plans of men will succumb. Wherever the interests of man clash with his happiness the former will have a hard time of it. The city-bred or born do not bear transplantation to the country with that equanimity which the movement "back to the soil"—principally confined to those who are well off and who are taking it up as a relief from the social grind—would lead the superficial observer to believe. And tuberculous people are not physically equipped for the stern struggle with nature which making a living from husbandry entails. The many gardens of Eden flaunted by real estate speculators, in the land of perpetual summer, are far away from home. And it will also be found that no miracles are possible there—hard work is here, as elsewhere in supposedly less favored climes, the touchstone for success in tilling the soil. Nor can one lose sight of the strain of taking up new occupations. Far better to minimize as far as possible the inherent evils of an occupation in which the patient has acquired proficiency than to try to train him in an unfamiliar task, no matter what the hygienic advantages of the latter may be. Far better to remodel the home life than break it up and move it away like a chattel. Just as we may lead a horse to the brook but not make him drink, so we may lead a man to the promised land and not have him take root. And if he does not take root, he withers, as we see often enough in the case of people who are trying to regain their health in far-off resorts. There are few cities in this country with inherently bad influences upon the convalescent—it is not the community or the "climate" but the conditions which are in the main at fault. These are not irremediable. The herculean task of ameliorating the living environment and the working conditions of the masses offers the only true solution. In this aspect the "home treatment" is the treatment *par excellence*—undertaken after the individual has taken a preparatory course in an approved sanatorium.

## THE INFLUENCE OF SODIUM CHLORIDE ON HYDROCHLORIC ACID SECRETION BY THE STOMACH.

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It is rather late to reply to Dr. Floerscheim's negative conclusions as to the influence of a salty diet on hypochlorhydria and of a salt-free diet on hyperchlorhydria, published in the MEDICAL RECORD of June 8, 1912. Indeed, the writer has no intention of entering into a controversy but wishes to present merely a clinical statement of views regarding the general influence of chloride supply in the system to HCl secretion.

There can be no question but that the ultimate source of HCl in the gastric juice is chlorine in metallic combination. Elemental chlorine occurs only adventitiously and, if present in any appreciable amount, is toxic. Organic combinations of chlorine, except HCl in weak combination with proteins, may be similarly disposed of. The last is the result, not the cause of HCl secretion, although it may exist in considerable amount when the secretion of HCl is not sufficiently active to produce more than a trace of free HCl. The writer has often alluded to the production of HCl from neutral chlorides by sulphuric acid, as illustrating the power exerted by the oxyntic cells in their secretion of HCl. To deny that HCl is ultimately derived from neutral chlorides would virtually ascribe creative power to them. It is also stated on good authority that HBr and HI respectively are produced if corresponding salts replace chlorides in the ingesta.

Since HCl is formed from inorganic chlorides, it seems logical to assert that if the latter are absent in the ingesta, the HCl secretion will fail. But here, as in many other instances, certain practical qualifications must be borne in mind. First of all, the amount of chlorides passing through the system daily varies within wide limits. Many persons almost habitually pass 30 grams of chlorides, estimated as NaCl, through the body daily. No chemical erudition is required to establish this fact. Allowing for the air between granules, salt weighs just about a gram to each c.c. A tablespoonful, therefore, represents 15 to 20 grams. It is by no means rare to see persons actually eat a teaspoonful of salt at a meal—5 grams, three times a day—almost as much more is used per capita in cooking, by cooks who season highly, and there is also a smaller amount in all ordinary foodstuffs. Fifteen to 20 grams may also be checked up in the urine, not to mention the perspiration and feces. Nine to 10 grams may, however, be taken as the normal standard of daily intake and outgo of chlorides, estimated as sodium chloride. It is interesting to note that the Indians about Saratoga, according to contemporary statements, regarded the salt springs as the abode of devils, and ate no salt as such. There are of course, no data as to their secretion, but it is permissible to conclude that they were able to form an adequate secretion from the chlorides present in meat and vegetable foods. On the other hand, savages on the sea coast and near interior salt licks are said to have used these sources of salt.

To return to the therapeutic problem in the narrow sense, the writer has almost invariably found that on a diet as nearly salt-free as possible without special preparation of foods before they reach the cook, hyperchlorhydria abates. But it is not sufficient merely to interdict salt as a relish on the table. It must not be used in preparing the patient's food and he must not eat salty meats, salt butter, etc. With a diet salt-free, except for the natural content of ordinary insipid foods, hyperchlorhydria does abate in the great majority of instances although it tends to return if an ordinary salt-rich diet is taken, and there are instances in which either the patient does not tell the truth about his diet or in which there is so much superexcitability of the oxyntic cells that they produce an excess of HCl with the comparatively small amounts present in the body and assimilated, or rather appropriated, from ordinary foods. There is no *a priori* absurdity in this assumption. The human body (Moss) normally contains about 30 grams of sodium chloride, and its ability to hang on to chlorides to such a degree that silver nitrate will scarcely cause a precipitate in the urine, is a common phenomenon in certain diseases. As stated, whole tribes of Indians lived for years and probably for generations without salt as such. There is abundant analogy to show that the body can and does use various substances over and over again with almost no loss. On the other hand, there is evidence by analogy, as well as abundant clinical experience, to show that a person used to a liberal, *i.e.* wasteful ingestion of salt, usually has the HCl secretion diminished if he is suddenly forced to economy in chlorides.

There is a prevalent notion that the secretion of HCl draws acid radicles from the blood so as to produce an alkaline tide in the urine. The writer has shown that this idea is quite fallacious and anyone can adduce his own evidence by titration of the urine. It is true that after meals, the actual acidity of the urine usually falls somewhat, although alkalinity or even neutrality by phenolphthaiein is almost never reached, but this is due largely to the habitual ingestion of water, as such or in beverages, fruit, etc. But with allowance for urinary bulk, the actual acidity shows no such tide as has been taught from *a priori* logic; and for the most excellent reason that acid (gastric) digestion is almost immediately followed by absorption and by the beginning of alkaline (intestinal) digestion. Thus, there is a round and round production, combination, and absorption of either acid or alkaline constituents which by no means implies that there is a marked quantitative disturbance of equilibrium, necessitating elimination of an excess of either.

While there is an adage that "Figures do not lie," they may give even more false impressions than expert testimony. This is especially true of percentage and titration figures. Many men use the term hyperchlorhydria to apply to cases just beyond the physiological limits. A hyperchlorhydria of 50° of HCl and with a total acidity of 80°, is rather high. A total acidity for chyme of over 100° is very rarely exceeded and, with the standard test meal, we seldom deal with a larger accumulation than 250 c.c. at one time. But, for the sake of illustration, imagine a hyperchlorhydria representing 100° of HCl either free or loosely combined with protein, and of a bulk of 1,000 c.c. These figures, at least in their combined result, must represent pretty nearly the limit of hyperchlorhydria. The writer has seen a few cases of ischochymia with over 1,000 c.c. of chyme; a few cases with a total acidity of over 100°; none in which free HCl reached 100 or in which total free and combined HCl reached 100. In the hypothetical case we have a liter of contents of decinormal strength, containing, by definition, 3.65 grams of HCl, or 3.55 grams of chlorine. This is about a tenth of the amount normally available in the body and an amount which can be maintained on an apparently salt-free diet. It is quite conceivable that under the stimulus of pepper or other spices, alcohol, heat, etc., locally, or under psychic stimulus or as the result of the underlying organic change of hyperchlorhydria, there may be an excess of acid production in the stomach, in spite of the most careful restriction of diet. When we bear in mind the fact that the term hyperchlorhydria is commonly used for one-tenth as much stomach contents and half (or even less) as much acid strength, the statement that hyperchlorhydria is not influenced by salt restriction is reduced to the very moderate one that the various reflexes or the inherent pathological change of hyperchlorhydria may bring 2 per cent. of the regularly available chlorine of the body, within the stomach, without there being an excess of chlorine available from ingesta.

Now, it is obvious that such a statement is not necessarily contradictory to the statement that, other things being equal, the gastric oxyntic cells will not so readily secrete HCl when the supply of chlorine is at its normal minimum as when it is in excess. Nor does the fact that hyperchlorhydria or rather hyperchlorhydric exacerbations may occur when the diet is restricted in salt militate against the general clinical experience that such restriction, when thorough, does tend to reduce such exacerbations. We must not forget that hyperchlorhydria is merely a symptomic term. It may occasionally represent a mere functional tendency, but in the ordinary case it refers to a definite disease, very likely an actual

numerical hyperplasia of oxyntic cells. The functional tendency is subject to almost absolute control, temporarily, by diet and other means and recurrences can be treated as satisfactorily as in most diseases. But the patient, even when his stomach contents are reduced to normal acidity, is no more free from the underlying disease for which we have no term except the one which alludes to the fulminations, than a diabetic is free from diabetes because, under diet, his urine is free from sugar.

Regarding the opposite statement of Dr. Floersheim, that hypochlorhydria cannot be relieved by a diet rich in salt, the writer, in a sense, more than agrees, although there is something to be said on the other side, with some qualifications. First of all, it has been established that ingesta containing an excess of salt, tend directly to diminish gastric secretion. Whether this is merely another way of saying that osmosis does not occur into a medium already higher in soluble contents than the one on the other side of the membrane or whether there are more recondite reasons, need not be discussed here. Thus we cannot hope to benefit hypochlorhydria directly and immediately by giving salt.

It is not unreasonable to maintain that a system which has been starved in regard to salt or which, after years and generations of habitual salt excess, has been reduced to a diet containing only the normal proportion of salt in animal and vegetable tissues, may be benefited and may indirectly and gradually have its power of acid secretion restored by a judicious administration of salt and a selection of diet otherwise requiring and stimulating the secretion of HCl. The writer would claim such therapeutic value for salt only in the same general way as for any other condition depending on a deprivation, and with the same expectation of practical results, limited by other factors in accordance with general experience in therapeutics.

One very important limiting factor may be expressed in general terms as follows: The fact that one lives in a coal or natural gas region does not guarantee that his house will be warm; nor does a clay soil insure that a city will be built of brick. There is no more reason to expect a cure of hypochlorhydria from administering salt than of Addison's disease from administering adrenalin, or of leanness from administering fat. In many cases of hypochlorhydria, a definite atrophy of the gastric tubules exists. In others, there is a general failure of glandular functional capacity or a failure of innervation. The presence of an abundance of available raw material cannot, of course, insure its utilization. But just as there are cases of anemia in which the blood will recuperate its hemoglobin if iron is furnished, and cases of leanness in which the mere increase of fat or of food in general will afford relief, so there are occasional cases of hypochlorhydria in which the moderate, rational increase of salt, along with other appropriate dietetic and hygienic measures, will facilitate the reestablishment of an adequate HCl secretion.

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**Pulmonary Osteoarthropathy.**—V. Ball and H. Alamartine note that whenever the dog develops tuberculous lesions in the lung, there also develops a certain degree of hypertrophic osteoarthropathy. The latter lesion is the result of the action of the tuberculous toxins absorbed from the focus in the lung. It is concluded that a similar association between arthritic and pulmonary lesions occurs in human beings.—*Gazette des Hopitaux.*

## BIBLIOGRAPHIC STYLE IN MEDICAL LITERATURE.

By FRANK PLACE,

ASSISTANT IN THE LIBRARY OF THE NEW YORK ACADEMY OF MEDICINE.

The purpose of this paper is to call the attention of the man of medicine to the importance of the bibliography. In the sense in which I use it here "bibliography" means the list of references appended to the usual article in medical periodical literature.

Schools and colleges devote courses to composition of literary material. Libraries have been written on how to write. But who cares about the bibliography? Even the library schools lay little emphasis on the necessity of bibliographic instruction of authors. Practically a doctor begins to realize what constitutes a bibliography when he is preparing his first work of research for publication; but too often it does not get his interest or his care. By way of groundwork there are a few books and articles that the would-be author should read. First and foremost stands De Vinne's Correct Composition.[1] This is a really important work, reducing to a common denominator printer, publisher, and author. A French work by Thil[2] takes up the general subject of preparing a medical paper and of going through the literature for a given subject; while Allbutt[3] gives general observations on composition. Shorter, and bearing more specifically upon the present subject, are papers by L. N. Wilson,[4] Rolleston,[5] Fisher,[6] Eliot,[7] H. Wilson,[8] and the pamphlet, "Bibliographic Style,"[9] which should be on the reference shelf of every literary physician.

The librarian appreciates the bibliography more than any other person. To him come bibilographies many times a day, while the physician may not use a bibliography once in a month. The strange, not to say weird, references that the librarian is asked to locate lead him to think that many writers have no idea what the bibliography is for, that they don't care, or that they make up their bibliographies out of pure imagination. Therefore, as a librarian, I wish to state for the bibliography some of the reasons for its being, what it should be, and certain ideas which should obtain in its making. These reasons will, I hope, persuade my readers to give the bibliography its proper share of care, that it may most completely and correctly fulfil its purpose.

A majority of medical articles review, or depend largely upon, other writings. To indicate both to the writer and to the reader the sources from which this foundation comes is the province of the bibliography, or list of references. This list varies in its character with the nature of the writer and of the article which it accompanies. The article which gives merely an outline of a subject may have for its basis a text-book or a monograph, in which case the bibliography may be of the simplest. On the other hand, the worker who spends years on a special line of research and reads hundreds of articles will give to his report a long list of references, amounting perhaps to several pages, citing books, magazine articles, pamphlets, and the like.

From the writer's point of view, the bibliography is of importance. It retains in permanent form a record of the authorities he has used, to which he may need to refer at some future time. It shows how many or how few have held his opinion, or have differed. It may, too, be a select list, selected to

show the progress of his subject historically, or the work of men who have added their might or mite thereto. The reader, however, will want to know in addition to the points noted above: "How accurately has the author quoted his authorities?" or "Is he justified in drawing such a conclusion from this author?" or "What is So-and-So's method or technique?" The bibliography should be the key opening the way to the required information; it should afford a means of getting before the reader the right articles in the least time.

For purposes of defense and offense, therefore, each item of a bibliography should have certain qualities, lacking which it is by so much deficient and reduced in usefulness. These qualities are completeness and correctness. To be complete, the reference should tell: (1) Who wrote the article (the author). (2) What it is about (the title). (3) When it was published (the date). (4) Where it is to be found (if a periodical, its name and where in it).

Completeness and correctness are not synonymous. A citation may be complete but not correct. It frequently happens that an incorrect reference is worse than none at all; for much time is spent in searching literature for that which does not exist. Thus, "Niles, *Amer. Jour. Med. Sci.*, 1911, CXLI, 79," may through carelessness of author and typesetter become in print, "Miles, *Jour. Med.*, 1901, CXI, 179." Such accidents do happen. To condemn a reader to spend hours wading through the literary deluge in search of such an article partakes of the nature of a crime. The proposed aid becomes a serious obstacle, for it causes loss of time and unnecessary work, not for one person only but for many in many times and places. Even when found the paper may amount to nothing; but it has to be discovered before its uselessness becomes known. In the eyes of those to whom he has caused such loss of time and energy an author's work is not likely to rise in value.

Incompleteness is probably the most frequent fault in bibliographies. To measure up to the standard of completeness, the references should be as full of fact as are the items in the Index-Catalogue[10] and the Index Medicus.[11] These items may be grouped under two heads: monographs and periodical articles; or more closely, "independents" and "analyticals." By the first, the monograph or independent, we mean the book or pamphlet published by itself under its own title (not a reprint). The analytical is the article printed in a periodical, or the monograph which is printed in a "system" or "handbook."

A reference to an independent should include these details: (*a*) author's name with initials; (*b*) title of book; (*c*) edition, other than the first; (*d*) place of publication; (*e*) date of publication, or nearest ascertainable date when title-page reveals none; (*f*) the page, or pages, if a particular one is referred to. Here is such a reference: Campbell, F. R. The Language of Medicine. N. Y. 1888. p. 203-286.

A reference to an analytical should contain: (*a*) author's name with initials; (*b*) title of article; (*c*) title of periodical in which found (usually in abbreviated form); (*d*) place of publication, except when the city's name appears in the title; (*e*) date (year) of issue; (*f*) series and volume numbers; (*g*) pages covered by the article (p. 203-286), or the first page only (p. 203). In ordinary lists the latter form is quite sufficient. Such references are these:

Mosenthal, H. O. A Case of Pancreatic Diabetes Mellitus. *Arch. of Internal Med.*, Chic., 1912, IX, 339.

Coryllos, P. Adamantinome kystique du maxillaire inférieur. *Bull. et mém. de la Soc. anat. de Paris*, 1911, LXXXVI (sér. 6, XIII), 520.

Collins, J. Aphasia. *Modern Med.* (*Osler*). Phil. & N. Y., 1910, VII, 308.

In spite of what I have said as to the necessity of including certain data, an author must use his judgment or take expert advice in each reference as to what details should be indicated. This may seem paradoxical, but it is not. Let me illustrate, first with the page number. The American Druggist and Pharmaceutical Record uses two sets of page numbers. Each issue is paged by itself and also with the numbers that are its share in the complete volume. Thus, instead of indicating Walsh's article as 1911, LIX, 23 (p. 23 is only that page in the number of the issue for August 14), give it as 1911, LIX, 73. Again, take the reference of Coryllos above. Volume 13 alone might be mistaken for the 13th volume of the journal published in 1838. On the other hand, insufficient lettering may give only volume 13. In either case the reference has the right number indicated. Or it may be that there are other kinds of numbers to be indicated. That is, one must give the number of "année" or "Jahrgang." A good example of this occurs to me in the *Revue Neurologique*. In this journal tomes I-XVI coincide with années 1-16, but année 17 contains tomes XVII and XVIII and année 18 contains tomes XIX and XX. In a reference to a "Supplement," "Ergänzungsband," "Festband" and the like, indication of it must follow the volume number when its paging is separate from that of the volume it accompanies. And again, the individual monthly or separate issues may be the only thing to give, as in: Boss, S. Ueber Gonosan-Ersatz. *Berliner Klinik*, Okt. 1911, Jg. 23, Heft 280, 15-21. In fact, such variations in periodicals are legion.

Periodical titles and their abbreviations should be a matter of concern to the author. In most cases an abbreviated title is possible, and as a matter of economy is necessary, but it should never be allowed to degenerate into a cryptogram. The shortened form should indicate to the reader the words abbreviated, and, not less important, the language thereof. "Arch. Oph." rather should be "Arch. f. Ophthal." "Arch. d'ophthal," or "Arch. of Ophthal." The inclusion of the place of publication aids in the identification of the journal. Such an abbreviation as "A. f. O." may be used, as in von Noorden's book,[12] if a key to the titles accompanies the list. On the other hand, it is hardly wise to use the full titles, even with the words abbreviated, in the case of a few, usually German, periodicals. Instead of writing "Jahresb. ü. d. Leist. u. Fortsch. a. d. Geb. d. Neurol. u. Psychiat." one may use "Jahresb. Neurol u. Psychiat."

Do not translate titles. Do not clip them of important words. "Deutsche Zeitschrift für Chirurgie" is neither "Zeitschrift für Chirurgie," nor is it the "German Journal of Surgery" for purposes of reference. If the reader is unfamiliar with German, a translated title will lead him astray; if he does read that language he needs no translation.

Above all—and this is the law and the prophets—take no one's word for the accuracy of a ref-

erence. Ve ify each one yourself, even if it take some time. It probably will take time: out of each ten of your friend's references five will be incomplete and four incorrect. And finally when your own bibliography in proof comes from the printer —Doctor, this is for *you*—take your corrected proof and with no aid from the copy, look up in the magazines themselves each and every one of the items in your list. Better yet, let someone who is unfamiliar with your subject verify and correct your proof. Only then can you feel that your bibliography is fit to print.

To ask for all these details and for such care is not unreasonable. Let me show how in actual use these items are helpful; how one item acts as a check on a mistake in some other item. First, the author's name, to one acquainted with the workers in a particular field, affords a clue to the value of the paper. In event of error in other parts of the reference, the author's name is of great service in the search through indexes. Further, his initials identify him when we find several writers of the same name. The name is fixed, while the subject-entry of our article may be uncertain, or, in an unfamiliar language, unknown. The author's name is doubly important when, through lack of space, titles of articles are omitted. Swale Vincent[13] prints a long bibliography which is a good example of a most condensed form. He gives author, journal, date, volume, and page. While not always consistent he shows how sources may be located with a large number of entries in small space.

Suppose, again, that the author's name is wrongly printed and other data are insufficient or misprinted. Here the presence of the title gives a final chance to locate our elusive article by "sleuthing" through subject indexes and other bibliographies.

That an entry needs the title of the journal which contains the article seems self-evident; yet the frequency with which all reference to a journal is omitted seems to be reason enough for devoting this paragraph to some axiomatic statements: Put down on paper all the facts in the reference while it is before you; don't leave it to memory. Don't take anything for granted, and don't leave anything to the imagination: your readers are not mind readers.

The place of publication differentiates magazines of the same or similar titles, and in the case of independents (books) serves to identify editions and aids in the ordering and purchase of the same. This item is practically of the least importance and may be omitted without seriously impairing the usefulness of a bibliography.

Of most importance are the date, volume number and page number. I give these three together because they are interdependent and each acts as a check on a mistake in one of the others. I will show how, lacking one of these items, the reference is defective and may entail considerable delay in discovering the article cited. Take this reference: "Lancet, Lond. II, 359." Inasmuch as each year's issues of this journal since 1844 have been published as two separate volumes, 1 and 2, this reference may be in any one of sixty-eight volumes. The date at once fixes the volume: "Lancet, Lond., 1909, II, 359." Suppose now we have only the date: "Arch. f. path. Anat., Berlin, 1882." In this case we have to look through four volumes, and in each one not an index but two pages of "Inhalt." As this "Inhalt" is almost solid print with no catchwords, change in type or conspicuous position for items, the time consumed is considerable. Even "1882, XC" leaves us with two pages of reading, but "1882, XC, 549" enables one to put his finger on the volume and on the article itself in 10 seconds. In referring to journals in several series, an entry which gives the various volume numbers often aids by corresponding to the various ways in which such journals are bound and labeled, thus: "C. r. . . . Soc. de biol., Paris, 1886, XXXVIII (Sér. 8, III), 21."

There is scarcely a case in which either the year or volume number cannot be found in the journal from which you are making a citation. I will not say *no* case, for the ways of publishers are sometimes past finding out. Such a thing can be. For this reason, too, let no man say unto himself, "What does the lack of a page number signify? Let 'em look it up in the index." And alas! what an index it may be! The index in the volume referred to may be missing. It may never have been published. If present, it may be as weird as that of the Dental Review, in six or eight alphabets, and with entries like this under T: "The use of a normal salt solution." It may be only a table of contents set up "solid"; or the index may be in Volume 2 which is not yet completed.

As good an example as one is likely to find of a carefully made, consistent bibliography is that appended to a recent work of Harvey Cushing.[14] It is worthy of emulation by every medical author.

Having decided on the form of the entries in his bibliography, the author should have constantly before him the typical entry which shall be his guide. That is, if he has decided to give titles of articles in his references, let him use titles consistently in every citation. If he uses Roman letters for his volume numbers, he should do so in every case. If he capitalizes important words in one entry, let him do so in all. If he begins German nouns with small letters, he should not capitalize the English nouns and adjectives. If he follows German usage in capitalizing German words, let him follow French usage in the French words. Famulener's[15] and Cushing's[14] bibliographies are examples of consistency, though they differ from each other in style.

Having considered its parts, let us look at the bibliography as a whole. The question here is of arrangement. Several methods are followed, of which I will speak of four. One way is to enclose in parentheses in the text immediately following the author's name the reference to the book or article. "We are indebted to Schloss (*Amer. Jour. Dis. of Children*, Chic., 1912, III, 341)." This system is not frequently followed. Another method is to use a superior figure or character immediately after the mention of the author's name, or allusion to his work, with the character repeated at the foot of the page with the bibliographic reference. This mixes the ordinary footnotes with the bibliography, but is very widely used; as for instance, in the *American Journal of the Medical Sciences*. A third system, to my mind the most useful, especially for longer bibliographies, is the use of figures as noted above, but running in consecutive order to the end of the article, with the references collected at the end, in column form, as in the MEDICAL RECORD, or less clearly but more compactly, in solid type, as in the *New York Medical Journal*. A variation of this arrangement is to arrange the references in the alphabetical order of the author's names, number them in that order and then assign the numbers to their respective posi-

tions in the text. This is the method employed in Cushing's[14] bibliography. Still another method is to omit figures in the text and arrange entries of the bibliography alphabetically. This is confusing in the case of several entries by the same author, but is the form employed in the dissertations of the "Faculté de Médecine de Paris." In any event, the author will do well to submit his manuscript to an editor, or a bibliographic expert, before sending it to the publisher; or at least, to take as an example, a well rounded, careful and consistent bibliography already published. As a guide, the pamphlet "Bibliographic Style,"[9] already referred to, will be a valuable aid.

When one surveys the far horizon of the field of medical literature, he can see the value and necessity of definitiveness, of accuracy and completeness in references. Strangely enough, though, writers who have been tried by the mistakes in the work of others do no better themselves. I have in mind one who, after several evenings' work in finding his authorities from slipshod citations, published in his own bibliography this item. "Cent. f. Chir. Beilage, p. 37." Only this and nothing more. Another published a short list containing these: "Bost. M. & S. J." and "Hagner, Oct. 13, 1906." What is the purpose of such references? I pause for a reply. It is to laugh. But this is not so comic as it is tragic. An hour, or three, may not be such a great matter in time lost if it is only for one man. It is tragic in that many men in many times in many places all will lose that much, if they use such bibliographic blunders. To the librarian who handles such material every day, the bibliography assumes a real importance. At times he is led to believe that many writers look on correctness of reference as a countryman looked on the giraffe when he said, "There ain't no such animal."

That bibliographic style is open to improvement seems plain. Three channels are open through which this improvement can and should proceed: First, through a cooperative policy among medical journals and publishers in insisting on certain bibliographic standards; second, through the cooperation with them of medical libraries; and, third, through literary and bibliographic courses in medical schools. Certain, or uncertain, steps are being taken in this direction, but they lack coordination.

I shall not be surprised to find mistakes in spelling, grammar, and style, and even "rong references" in my own paper. I shall at least have tried to show what right references are; though, in this sketchy paper, I have not said the half of what I would like to, nor is what I have said half emphatic enough. I hope I have done something to put the bibliography on a footing of its own, to give it half a chance. As long as man is human mistakes will occur. The personal equation, human nature, the imp of the perverse, all take a hand in making the wrong appear right. Of that I cannot complain. What I do ask for is an *attempt* at completeness, an *attempt* at correctness and consistency in bibliographic style.

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**Posthemorrhagic Anemia.**—L. S. Milne states that in rabbits and cats in which a hemorrhagic anemia has been produced, the hemoglobin is regenerated much more slowly than the red corpuscles, but the index, relative to the red corpuscles, never rises above one. The resistance of the corpuscles is not increased. In erythrocytes developing in the bone marrow, the nucleus of the erythroblasts seems to lose its chromatin, but is apparently not extruded. Punctate basophilia of the erythrocytes is a common feature and seems to result from a diffusion of nuclear chromatin through the cell. Extramedullary myeloid metaplasia is generally slight, but in moderately severe and long continued anemia from bleeding it may be very extensive. Lipemia usually occurs when the blood is reduced below a certain limit. The greater part of the fat in the serum can be extracted with ether and is stained by osmic acid. Extensive fatty infiltration of the organs may occur and also widespread necrosis in the central parts of the liver lobules. Pigmentation of the internal organs is usually only slight, but may be considerable, particularly in spleen. Although there are minor differences, all the essential features of anemia produced by toxins can be reproduced by hemorrhage.—*Journal of Experimental Medicine.*

**Lipoid Metabolism in Developing Chick.**—F. M. Hanes states that the liver of the embryo chick during the first two weeks of development contains an abundance of isotropic fatty globules which represent a mixture of lipoids in which phosphorized fats predominate. During the third week of incubation the fatty globules in the liver change their physical and chemical characters. They become anisotropic and exhibit the reactions and properties of esters of cholesterol. The phosphorized fats gradually disappear from the liver during the third week. The phosphoric acid utilized by the embryo chick in calcification is derived from phosphorized fats. It is suggested that the phosphorized fats are split in the liver, the glycerophosphoric acid portion being liberated for calcification, while the free fatty acids are esterfied by cholesterol. A review of chemical analyses of aortic atherosclerosis and calcification, and a comparison of the conditions in atherosclerosis with those of the developing chick liver, suggest that pathological calcification results from a splitting *in situ* of phosphorized fats with the subsequent formation of calcium salts, as suggested by Baldauf.—*Journal of Experimental Medicine.*

# MEDICAL RECORD.

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## THE NATIONALIZATION OF QUARANTINE.

EARLY in January two documents dealing with the proposition to place the Quarantine Station at the Port of New York under Federal control were made public. One of these documents was a report of the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine, urging that the Quarantine Station at this port be transferred to the U. S. Public Health Service. The other document was the report to the State Legislature of Dr. Joseph J. O'Connell, for the time being Health Officer of the Port, urging that the New York Quarantine Station remain under his supervision. While it may be admitted that the right is not always on the side of the majority, nevertheless, when the majority is composed of one thousand of the leading physicians of New York City, moved solely by consideration of the public weal and with no personal interests in the matter, and the minority consists of one man, and that one the incumbent of the office it is proposed to abolish, the presumption is that the majority this time is in the right.

The arguments advanced by the public health committee of the Academy are in brief as follows: Of the fifty ports in the United States where quarantine provisions exist, forty-seven have been placed under Federal control and only three are managed by local authorities. The reasons for the transfer of the quarantine regulations of these forty-eight ports from local to national control were: (1) If the United States is to be a responsible party to international agreement regarding quarantine regulations, it must have control and supervision over all the ports of the country. (2) Quarantine work is essentially scientific in its nature and can be carried on efficiently only if the tenure of office is independent of changes in administration and of politics. (3) The Public Health Service has a well trained staff of medical officers and is thoroughly equipped for efficient quarantine administration; its record in the past, moreover, is such as to insure confidence in its efficiency for the future. (4) From the point of view of convenience, uniformity of administration, and economy the arguments are all in favor of a national control of quarantine in all ports of the United States.

The arguments advanced by Dr. O'Connell are also in support of national control, though he apparently does not think so. He says, "It (New York State) cannot wisely delegate its powers to any other agency because the magnitude and the nature of the quarantine work in New York so condition the problem that its solution requires that the supervisory and executive powers in all their amplitude shall be united in one person, and that this person shall be in a position to guide his judgment by a first-hand knowledge of the situation with which he has to deal."

It is precisely because of the magnitude of the quarantine work in New York and because "the prosperity of the whole State would be radically affected by any serious damage done to the commerce of its principal city" that the control of this great machine should not rest in one person, subject to removal by death or at the command of a political boss. In the business world it would be accounted madness to vest the control of a great undertaking in one mortal man instead of in a continuing corporation of trained experts, any one of whom is competent to take the helm in an emergency. The long and efficient administration of Dr. Doty was in a sense a misfortune, for it gave rise to a feeling of security in the permanence of competent State control which only the scandalous "trial" of this able public servant could shake. It has now been seriously shaken, for it is as certain as death and taxes that by the time Dr. O'Connell has gained experience and has perhaps won the confidence of the community by the exhibition of efficiency in some emergency the whirligig of politics will send him back to private practice and will again expose the health and commerce of New York to the mercy of the inexperience and possible incompetency of a new political appointee.

Another cogent argument for national control is the request of Dr. O'Connell for nearly two million dollars to pay for a virtual renewal of the plants at the Quarantine Station and at the detention hospitals on Hoffman and Swinburne Islands, and of an increase in the annual payroll of about $35,000 for thirty-seven new medical officers and assistants. Incidentally the present Health Officer pays an unconscious tribute to the efficiency of his predecessor who was able to accomplish so much without the two million dollars worth of improvements and the thirty-five thousand dollars worth of assistants which Dr. O'Connell says are necessary to enable him to do the work properly. By turning over the control of its quarantine at this port to the Federal Government the State will be spared the present expense of administration which amounts to about $300,000 annually and will also avoid the necessity of an increase of this expense by $35,000 each year for salaries and the interest on the $2,000,000 asked for improvements.

This is, therefore, an opportune moment, in the interests of economy, to ask the Public Health Service to assume the stupendous task of guarding the city and State, and the nation as well, against imported disease. The Public Health Service has performed this task elsewhere to the satisfaction of the entire country; the New York quarantine administration has also done this at times, and in some notable instances it has failed miserably; whether it will fail again depends entirely upon the experience,

ability, and personal character of the incumbent for the time being. The present Health Officer of the Port has discharged his routine duties creditably, but he has not been tried by any serious emergency, and it is no disparagement to his ability to say we hope he never will be. The citizens of New York and of the United States would view such an emergency with greater equanimity were it met by the trained sanitarians of the Public Health Service. The time must surely come when the control of the quarantine at this and the other two ports will be transferred to the Federal Government, and no time is better for this necessary and inevitable transfer than the present.

## A PRACTICAL PLAN FOR THE CARE OF THE FEEBLE MINDED.

Amidst all the talk about the duty of the State to care for the feeble minded there is surprisingly little to be discerned that deals in anything except the most vague generalities. It is therefore peculiarly refreshing to run across some definite plan, which is designed to meet the exigencies of the case as they exist at present, and which does not presuppose the existence of a perfectly organized, ideal political state.

In *The Training School* for November and December, 1912, Prof. E. R. Johnstone has outlined a plan whereby the feeble minded of the State of New Jersey can be properly cared for at the least expense compatible with good management. He proposes (1) that all feeble-minded children under the age of puberty, should be sent to the special classes in the public schools. This is in keeping with the idea that until the child becomes sexually or otherwise dangerous to the community he can safely be left at large and the parents can bear the expense of housing, clothing, and feeding during these years. (2) In the large cities of the State, which Johnstone enumerates but which it is unnecessary for us to mention here, he suggests that there be founded special municipal institutions for the feeble minded between the ages of 12 and 20, children from the special classes to be advanced to the institutions at the proper age. Here the expense must be borne by the municipality, the parents contributing what they are able and the State assisting, as it does now in the county care of the insane. The feeble minded of this group from the rural districts and smaller towns can be looked after at the Training School at Vineland. (3) Those who are twenty-one years or over can be cared for by the State at the custodial institutions already established at Skilman and Vineland, and the transfers should be made directly from the institutions for children to the State's institutions for adults. (4) Finally all the purely idiotic cases, that is, those whose personal habits are unclean and who need special care and attention, should be sent either to one of the above-mentioned institutions for adults or to the county almshouses.

This plan, as outlined by Prof. Johnstone as feasible for the State of New Jersey, would certainly be equally so for any other State which has already made a start in the care of its feeble minded. It combines the already existing private and public institutions in one general scheme which has for its ultimate aim the elimination of the defective strains. It is easy to see how the cost of such a plan would be very great at first, but as the years go on, the expense would rapidly grow less, because the death rate would naturally tend to eliminate the already existing supply of the feeble minded, and the plan of segregation, after the age of puberty, would tend to diminish very materially the birth rate of this unfortunate class.

## THE MODERN ASPECT OF DIABETES.

A lucid explanation of the complicated mechanism underlying the production of diabetes mellitus is presented by C. von Noorden in the *American Journal of the Medical Sciences,* January, 1913. The maintenance of the sugar content of the blood is one of the most important functions of the liver, which stores up the excess of ingested carbohydrate in the form of glycogen, and then converts this into sugar in response to the demands of the tissues. But the liver is not independent with respect to maintaining the balance between the supply and demand of sugar. The liver is under the control of two organs which act as antagonists. These organs are the pancreas and the suprarenal gland system. The pancreas through an internal secretion exerts a retarding influence upon the sugar production of the liver. Diminished activity of the pancreas, which is not always accompanied by anatomical changes in this organ, is the cause of a large number of cases of diabetes. The suprarenal gland system stimulates to a high degree the sugar-producing function of the liver. The glycolytic mechanism of the liver is kept normally in a state of equilibrium through the antagonistic action of the pancreas and suprarenal glands. The latter are directly under the control of the nervous system, as evidenced in the glycosuria resulting from puncture of the fourth ventricle. The pancreas is likewise influenced from without, its action upon the liver being inhibited by the internal secretion of the thyroid.

The fact is emphasized that the underlying pathological causes in diabetes may be found in several places, and that these causes are of unequal importance. There may be primary disease of the liver itself, but this really plays a subordinate rôle. There may be an affection of the suprarenal glands or of the nervous mechanism controlling them. This is the case in the neurogenous and toxogenous glycosurias. The most important cause of human diabetes is an organic or functional disease of the pancreas, or less frequently, some impairment of this organ through influences reaching it from the thyroid, parathyroids, and hypophysis.

Of eminent clinical importance is the recognition of diabetes as a complicated disease in which many organs are concerned, and in which the anatomical and physiological disturbances are not the same in different cases. Of fundamental importance in all cases of diabetes is the enormous irritability of the sugar-forming apparatus of the liver. The liver is excited to an increased sugar production by a slight excess of carbohydrate or even of protein in the diet; by excessive muscular work or

acute febrile attacks; by psychic and other nervous traumata; and by injections of adrenalin or thyroid feeding.

The main indication for treatment is to subdue the extreme excitability of the mechanism that is concerned in the metabolism of sugar. This indication is met by guarding the patient against the ill effects of physical and mental strain and by adopting the necessary measures in the restriction of diet. Frequent urinary examinations are indispensable in enabling one to regulate properly the diet of the diabetic.

### Pancreatic Concretions and the Pancreatic Syndrome.

That pancreatic concretions may obstruct the canal of Wirsung and produce well marked pressure phenomena without causing much shortage of external secretion may be due at time to slow growth and adjustment, such as the wearing of a thin groove in the stone. If the latter are not arrested permanently, the rapidity of their passage before the attainment of an obstructive degree of size would also account for the partial maintenance of the external secretion. At a recent meeting of the Royal Imperial Society of Physicians of Vienna (*Münchener medizinische Wochenschrift,* December 17) Glaessner exhibited two small pancreatic calculi, pea sized, and bearing a general resemblance to oxalic acid calculi. These were expelled spontaneously in the feces. There had been a history of repeated attacks of colic with eventually icterus and enlargement of both liver and spleen. There were marked salivation, achylia gastrica, alimentary glycosuria, and choluria. The patient had become cachectic. The feces showed muscle fibers and muscle nuclei but there was no special symptom whatever of pancreas failure. The diagnosis was chronic pancreatitis, pancreatic lithiasis, and incidental compression of the common duct which caused the addition of the liver syndrome. The patient received an oil cure followed by a Carlsbad cure and made a complete recovery. This case bears out the generalization sometimes seen in literature that even in the severest case of organic disease of the pancreas, the so-called syndrome of pancreatic insufficiency may be entirely wanting.

### Dust in Cities.

Among the annoyances to which city dwellers are subject, the dust nuisance is conspicuous. Under certain conditions also dust is a distinct menace to health, although it has been stated recently, and probably with a good deal of truth, that the dangers from dust have been considerably exaggerated. Outside dust, as a rule, does not contain hurtful germs, or rathes germs in so active a state as to be agents in conveying infection. Still, dust both outside and inside a house possesses various potentialities for harm. It can and sometimes does spread infection and in the ordinary way it irritates the respiratory organs and may be the exciting cause of several latent complaints of the breathing apparatus. In a few words, it may be stated with emphasis that the less dust is evident in cities the better will it be for the welfare of the inhabitants. Although, then, it is universally allowed that dust in cities is both a nuisance and a menace to health, there are but few places in which adequate and effective measures have been taken to cope with the evil. Discussion is rife and so is the dust. In rooms the custom of "dusting" merely sets in motion some of the dust and wafts it from one piece of furniture to another. In public halls, theaters, music rooms, and so on, ventilators move dust more or less laden with microbes and blow them into the noses and throats of those present. In short, no energy has been exhibited in fighting an obvious enemy to health and comfort. The means by which the inconveniences and dangers of dust may be abated are well known and need not be rehearsed here, the object in calling attention to the matter being merely to endeavor to arouse interest in a question which assuredly needs thorough ventilation in the medical and lay press.

### Advances in Paresis Therapy.

The discovery that nothing whatever is to be expected from the salvarsan therapy of paresis, which indeed is often aggravated thereby, coincides well in point of time with reports of the increasing efficacy of the pyretogenous substances tuberculin and nuclein in the early stages of the disease. Pilcz finds no less than 60 per cent. of improvement from tuberculin, and in private practice the percentage should be notably higher. But along with these results there appears a doubt as to the rationale of the action of the two substances. The fact that both of them are known to cause leucocytosis has influenced O. Fischer of Prague (*Berliner klinische Wochenschrift,* December 16) to employ other substances which are known to be leucocytogenous. It is, however, very probable that the pyrotogenous component is not inert and must for the present be retained. It was found that a combination of nuclein and mercury produced a high degree of leucocytosis and thus far it seems to give good results in practice. Chaulmoogra oil is also to be tried, and radium which also produces leucocytosis. The author expects to combine in the future antiluetic drugs with nuclein and other leucocytogenous substances. As he does not mention tuberculin in his summing up he apparently feels that we may be able to dispense with it ultimately despite its present efficacy.

## News of the Week.

**Philippine Medical Service.**—The United States Civil Service Commission announces for February 17 a competitive examination open to men only, for the purpose of filling a vacancy in the position of Chief of the Department of Medicine, Philippine General Hospital, Manila, at a salary of $4,000 per annum. The hospital has a capacity of 350 beds, and an excellent equipment, and is in close touch with the Bureau of Science with its fine research laboratories. Applicants for the examination must be citizens of the United States between the ages of twenty-eight and forty, and graduates in medicine. Permission to submit certificates is given by the United States Civil Service Commission, Washington, D. C., and application should be made at once for Form B. I. A. 2.

**State Civil Service.**—The New York State Civil Service Commission will hold an examination on February 15 for the purpose of filling the position of assistant superintendent of nurses, Craig Colony for Epileptics, Sonyea, at a salary of $900 and maintenance, this postition being open to women only;

and on the same day an examination for the position of physician at the Cohoes Jail, Albany County, at a salary of $300. Application blanks must be filed on or before February 7, and full particulars may be obtained from the State Civil Service Commission, Albany, N. Y.

**Army Dental Corps.**—The Surgeon-General of the United States Army announces that examinations for the appointment of Acting Dental Surgeons will be held at various places on April 7, 1913. The essential requirements are that the applicant be a citizen of the United States, between twenty-one and twenty-seven years of age, a graduate of a legally authorized dental school, and of good moral character and habits. Acting dental surgeons are employed under a three years' contract at the rate of $150 a month, and at the end of this time, if qualified, are promoted to the grade of dental surgeon. Fuller details may be obtained by addressing the "Surgeon General, United States Army, Washington," it being necessary that all applications be filed at least two weeks before the date set for the examination.

**New Cocaine Bill.**—The present law governing the sale of cocaine in New York having proved ineffectual in putting an end to the traffic, another bill has been drafted and will be shortly introduced in the State Legislature. The new bill makes the sale of the drug by an unauthorized person a felony, and the mere possession of it a misdemeanor, and provides that a druggist shall not have more than five ounces of the drug in his store at any one time, that a record of every sale shall be kept, that the drug shall be sold only in a solution or ointment not over one ounce and containing not over four per cent. of cocaine, and that the druggist shall keep each prescription and not refill it. The bill also provides that doctors, dentists, and veterinarians shall not have more than one ounce of cocaine in their possession at any one time, and shall keep a complete record of the disposal of the drug. Failure to abide by these sections is made a misdemeanor. The bill also seeks to regulate the sale of the drug by wholesalers in large quantities, complete records of such sales being required.

**Goats as Sanitarians.**—Fort Washington on the Potomac River having been condemned as unhealthful because of the dense growth of brush and the consequent breeding of mosquitos and flies, the War Department has decided to make use of goats as sanitary agents to clear up the premises and make them fit for human habitation.

**To Honor Professor Chiari.**—An informal celebration in honor of Prof. Chiari's sixtieth birthday will be held by his pupils on February 1, 1913, at the Clinic for Diseases of the Nose and Throat, Vienna.

**City Death Rate.**—During the week ending January 11, there were in New York a total of 1,512 deaths, as compared with 1,455 during the same week of last year. The death rate for the first two weeks of the year was 14.86 per thousand, while for the first two weeks of 1912 it was 14.42. There was, however, a decrease in the number of deaths of children under one year of age.

**Hospital Dedicated.**—The new building at the Lutheran Hospital, East New York, which has been erected at a cost of $20,000, was dedicated on January 19 with appropriate ceremonies.

**Deaths in the State.**—During the month of November, 1912, the deaths in New York State totaled 10,352, of which 804 were due to violence. In comparison with the same month last year, there was a decrease in the number of deaths due to tuberculosis, pneumonia, and typhoid fever, while the deaths from diphtheria, scarlet fever, and measles were slightly increased.

**Ambulance Smash-Up.**—An automobile ambulance of the Williamsburg Hospital, Brooklyn, was struck by another automobile at the corner of Broadway and Penn street, and both cars were badly damaged, while the occupants were bruised and shaken.

**Scarlet Fever Epidemic.**—Twelve students of the Massachusetts Agricultural College at Amherst, Mass., are ill with scarlet fever and quarantined in one of the fraternity houses, and the faculty has cancelled all arrangements for athletic games, dances, etc.

**Gifts to Charities.**—By the will of the late Miss Dessie Greer of New York, Mt. Sinai Hospital will receive $10,000 and the New York and Roosevelt Hospitals each $5,000, the bequest in every case being subject to the life interest of another person.

By the will of the late Miss Kate Clevenger of Lower Merion, Penn., the Bryn Mawr Hospital receives a bequest of $5,000 for the establishment of a free bed in the children's ward in memory of her brother, William H. Clevenger, and a further bequest of $5,000 for the establishment of a free bed in memory of her parents.

**Cerebrospinal Meningitis Spreading.**—According to the Public Health Reports of January 17 cerebrospinal meningitis has become epidemic in certain localities in Arkansas, Tennessee, and the southern part of Illinois. In Arkansas 25 cases, with 17 deaths, were reported at Lepanto, Poinsett County, during December and the first six days of January, and a few sporadic cases have been notified in other parts of the state. In Tennessee there were 108 cases, with 47 deaths, reported in Dyer County to January 13. In Lake County there were 13 cases, with 9 deaths, to January 13. In Carroll County there were four cases during the two weeks ended January 11, with sporadic cases elsewhere in the state. There were 13 counties in the state in which one or more cases were reported during the month ended January 14. In southern Illinois there were 11 cases, with 7 deaths, reported at Dale, in Alexander County, to January 10. Cases have also been reported at Cairo. Considerable agitation has arisen in connection with the appearance of the disease, and certain communities have established quarantine against other communities.

**Sterilization Urged.**—In his third biennial message to the Utah State Legislature on January 14, Governor Spry recommended the passage of an act requiring the sterilization of the hopelessly insane and of criminals convicted of certain statutory crimes.

**Antivivisection Again.**—The legislative controversy in New York on the use of animals in medical research was reopened on January 14 by the introduction into the Senate of a bill authorizing the appointment by the Governor of a commission of five members to investigate experimentation on living animals and report to the next Legislature what changes are desirable to protect the animals from unnecessary suffering without unreasonably interfering with legitimate scientific research. The belief that unnecessary suffering is inflicted by medical research workers seems to die hard.

**New York Quarantine.**—In his annual report to the New York State Legislature, Dr. Joseph J. O'Connell, Health Officer of the Port of New York, asks for what is practically a renewal of the plant at Quarantine and on Hoffman and Swinburne Islands. He also asks for additions to the working force which would mean an annual increase in the payroll of $35,000 to $40,000. In all the increased allowances requested amount to nearly $2,000,000. Dr. O'Connell opposes the plan of placing the port under Federal control, which he considers fraught with danger to the commerce of the city and consequently of the State. The report states that during the year ending September 30, 1912, 4,175 steamships and 710 sailing vessels were boarded by the officers of the department, and that these vessels carried crews amounting to 473,485, and 162,801 first class, 194,506 second class and 677,660 steerage passengers. In all, 6,304 persons were removed from these vessels for observation or detention, and on Swinburne Island 192 persons were treated, with fourteen deaths, and on Hoffman Island 218 persons with seven deaths.

**Fines for Importing Disease.**—The House of Representatives on January 15 passed the Kindred bill imposing a fine of $200 on any transportation company which brings to the United States a person suffering from epilepsy, any form of mental disorder, or dangerous contagious disease.

**Virginia Registration Act.**—During its last session the State Legislature of Virginia passed a new medical law containing the provision that within one year from the passage of the act all licensed practitioners of medicine in the state should register their licenses to practise in the office of the clerk of the circuit or corporation court of the county or corporation in which they reside. The law was approved on March 13, 1912, and it therefore becomes necessary for every practitioner in Virginia to register with the court before March 13, 1913, the penalty for failure to do so being a fine of $50 to $500, and in case of flagrant violation, imprisonment not to exceed six months.

**Administration of Antitoxin by the Health Department Inspectors to Be Discontinued.**—Commissioner Lederle of the New York Board of Health announces that on and after February 1, 1913, the present system of free administration by inspectors of the Department of Health of diphtheria antitoxin and performance of intubation at the homes of the patients, at the request of attending physicians, will be discontinued. After that date, when it becomes necessary for the Department of Health to administer antitoxin or perform intubation in any case of diphtheria, the patient will be at once removed to one of the hospitals of the department for further observation and treatment. Diphtheria antitoxin may still be obtained, free of charge, by physicians from supply stations at drug stores for use where payment for the same by the patient would be a hardship.

**Personals.**—Col. William C. Gorgas, chief sanitary officer of the Canal Zone, in response to a summons from Washington sailed from Panama for the United States on January 14.

Dr. John R. Slattery of Boston, Mass., has been appointed superintendent in charge of St. Elizabeth's Hospital, Boston, and also associate physician in chief to the institution.

**Marriage and Health.**—Mr. Duhamel has introduced a bill in the New York State Senate to amend the domestic relations law, providing that, with every license to marry, each party to the ceremony must present a certificate from a doctor of medicine duly authorized to practise in this state showing freedom from "disease due to immorality."

**British Physicians Yield to Lloyd George.**—On Saturday last, after a determined fight in behalf of the medical profession, the Council of the British Medical Association decided by a vote of 115 to 35 to release all members from the pledge they had given not to serve under the National Insurance act. The resolution releasing the members from this pledge followed a preamble "recognizing the force of present circumstances and consulting the best interests of the Association and the unity of the profession."

**Medical Society of the Missouri Valley.**—The spring meeting of this society will be held at the Coates House, Kansas City, on March 20, 21, and 22, the last day being devoted entirely to clinics in the various hospitals. The Jackson County Medical Society will be the host, and a symposium on cancer, a dinner at the Coates House, and an address by Surgeon-General Blue will be features of the first day.

**Medical Society Elections.**—Hartford (Conn.) Medical Society: Annual meeting at Hartford on January 6. Officers elected: *President,* Dr. Charles D. Alton; *Vice-President,* Dr. Everett J. McKnight; *Secretary,* Dr. John Carter Rowley; *Treasurer,* Dr. Philip D. Bunce.

Clay County (Ind.) Medical Society: Annual meeting at Brazil on December 19. Officers elected: *President,* Dr. Harold Pierce, Cleveland; *Vice-President,* Dr. Lewis L. Williams, Brazil; *Secretary,* Dr. Harry Elliott, Brazil.

Reno County (Kan.) Medical Society: Annual meeting at Hutchinson on December 27. Officers elected: *President,* Dr. H. H. Heylmun; *Vice-President,* Dr. Charles L. McKittrick; *Secretary-Treasurer,* Dr. W. F. Schoor, all of Hutchinson.

Jefferson County (Ky.) Medical Society: Annual meeting at Louisville on December 23. Officers elected: *President,* Dr. Dunning S. Wilson; *Vice-Presidents,* Dr. Harry J. Phillips and Dr. Guy P. Grigsby; *Treasurer,* Dr. E. L. Henderson, all of Louisville.

McCracken County (Ky.) Medical Society: Annual meeting at Paducah on December 18. Officers elected: *President,* Dr. H. G. Reynolds; *Vice-President,* Dr. C. E. Kidd; *Treasurer,* Dr. H. P. Linn; *Secretary,* Dr. E. B. Willingham.

Cumberland County (Me.) Medical Society: Annual meeting at Portland on December 20. Officers elected: *President,* Dr. E. E. Holt, Portland; *Vice-President,* Dr. J. L. Bennett, Bridgton; *Secretary,* Dr. Philip P. Thompson, Portland; *Treasurer,* Dr. R. B. Moore, Portland.

Sagadahoc County (Me.) Medical Society: Annual meeting on December 18. Officers elected: *President,* Dr. Isaac C. Irish, Bowdoinham; *Vice-President,* Dr. A. A. Stott, Woolwich; *Treasurer,* Dr. R. H. Donnell, Bath; *Secretary,* Dr. Robert C. Hannigan, Bath.

Knox County (Me.) Medical Society: Annual meeting at Camden. Officers elected: *President,* Dr. Frederick B. Adams, Rockland; *Vice-President,* Dr. E. B. Silsby, Rockland; *Secretary-Treasurer,* Dr. Horatio W. Frohock, South Thomaston.

Kennebec County (Me.) Medical Society: Annual meeting at Augusta on December 26. Officers elected: *President,* Dr. S. J. Beach; *Vice-*

*President,* Dr. Wellington Johnson; *Secretary,* Dr. Henry W. Miller; *Treasurer,* Dr. George R. Campbell, all of Augusta.

Hinds-Rankin Counties (Miss.) Medical Society: Organized at Jackson on December 18. Officers elected: *President,* Dr. R. S. Curry, Jackson; *Vice-Presidents,* Dr. T. M. Hall, Clinton, and Dr. J. E. Watson, Florence.

Missoula County (Mont.) Medical Society: Annual meeting at Missoula on December 28. Officers elected: *President,* Dr. H. B. Farnsworth; *Vice-President,* Dr. E. C. Anderson; *Secretary-Treasurer,* Dr. C. L. Bordeau, all of Missoula.

Galveston County (Tex.) Medical Society: Annual meeting at Galveston on January 3. Officers elected: *President,* Dr. W. F. Starley; *Vice-President,* Dr. W. P. Breath; *Secretary-Treasurer,* Dr. W. C. Fisher, Jr.

Caddo County (Okla.) Medical Society: Annual meeting at Anadarko on December 27. Officers elected: *President,* Dr. P. R. McClure, Fort Cobb; *Vice-President,* Dr. G. W. Westermeier, Anadarko; *Secretary-Treasurer,* Dr. C. R. Hume, Anadarko.

**Obituary Notes.**—Dr. Wolfred Nelson of New York, a graduate of McGill University and of the University of Bishop College, Faculty of Medicine, Montreal, in 1872, a non-resident Fellow of McGill University, a Fellow of the Royal Geographical Society of London, and a member of the British Medical Association, died in the Hudson Street Hospital from pneumonia on January 15, at the age of 66 years. Dr. Nelson was known as an expert on tropical medicine and climatology, having made extensive researches on these subjects in Cuba, Mexico, and Central and South America, and his work had been recognized in Spain by the bestowal of the Order of Queen Isabella the Catholic with the rank of Commander.

Dr. Orrin F. Harris of Norwich, Conn., a graduate of the College of Physicians and Surgeons, New York, in 1865, died at his home after a brief illness on January 4, aged 69 years.

Dr. Henry Woodward Jones of New York, a graduate of the Detroit College of Medicine, Michigan, in 1874, died at his home in White Plains from diabetes, on January 14, aged 65 years.

Dr. James F. Bothfeld of Newton, Mass., a graduate of the Boston University School of Medicine in 1888, formerly assistant superintendent of the Westboro Hospital, a member of the American Institute of Homeopathy and the Massachusetts Homeopathic Medical Society, and attending surgeon to the Newton Hospital, died on January 12, after a short illness, aged 47 years.

Dr. Raymond H. Pillow of Butler, Penn., a graduate of the Jefferson Medical College of Philadelphia in 1876, and a member of the Pennsylvania State and Butler County Medical Societies and the American Medical Association, died at his home on January 10, from secondary process incident to cerebral hemorrhage, aged 59 years.

Dr. Frank R. Higgins of Philadelphia, Penn., died at his home on January 9, aged 66 years.

Dr. William A. Grove of Galva, Ill., a member of the Illinois State and Piatt County Medical Societies, died at his home on January 9, after a long illness.

Dr. Paul E. Thibodaux of Montegut, La., a graduate of the Medical Department of the Tulane University of Louisiana, New Orleans, in 1892, died suddenly from apoplexy, on January 6.

## Correspondence.

### INFLATION OF STATISTICS.

To the Editor of the Medical Record:

Sir:—Permit me to add a few words in rebuttal to Dr. Mandlebaum's letter which appeared in your valuable journal on the 18th inst. I do not think he was quite fair to quote disconnected sentences of my paper in the endeavor to justify his failure to give me credit for the case. He admits that I recorded my cases under the caption of "Primary Splenohepatomegaly in Brother and Sister," in other words, that I was certain that the disease is primary in character, occurs in several members of a family, and is manifested principally by pronounced enlargement of the spleen and subsequent hypertrophy of the liver. Now, if Dr. Mandlebaum, before writing his letter, had taken the trouble to read his own recent paper on Splenomegaly and to compare the characteristics of the disease as he has found them to be with those briefly expressed in the caption of my paper of November 4, 1911, he certainly would have hesitated to assert that my cases were not diagnosed by me. I probably would have gone a step further to enlighten him and would have added the words "Gaucher type" with capital letters, were it not for the suggestion of no less an authority than Dr. A. Jacobi (whom I had the pleasure to consult on the last case) that "my cases were of the kind every author has lately been describing under a different name." Let me state also that the photographs of the children accompanying my paper were so beautifully reproduced in the Medical Record that Dr. M. S. Reuben and his associates immediately recognized the case. Furthermore, that after the doctor's article appeared, he apologized to me for not giving me credit for the case, explaining that the time was too brief (two months!) to have made the necessary correction in the manuscript or proof. I beg also to state that it was upon my solicitation, to please Dr. J. Wiener, that the parents consented to have their child operated upon, so that practically everyone connected with the case was fully aware of the fact that the case was mine, particularly since I had also the occasion for several years to treat his sister who died two years before.

Herman B. Sheffield, M.D.

New York.

### OXYGEN IN THE TOXEMIA OF PREGNANCY.

To the Editor of the Medical Record:

Sir:—In your issue of January 11, 1913, there appears an article by Dr. George P. Shears entitled "A New Method of Treating the Toxemia of Pregnancy." The method consists in the free use of oxygen by inhalation and subcutaneously, and he refers to this procedure as new and unknown either in Germany, France, or England. The injection of oxygen under the breasts in eclampsia is not altogether new and unknown. The method was given a fair trial some two years ago in the Wertheim Clinic, Vienna, and I believe also in some of the other German clinics. The results were not satisfactory. However, Professor Wertheim made use of the preparation on an altogether different principle.

About that time Professor Sellheim of Tübingen

announced his theory that eclampsia was due to a perverted action of the mammary gland and attempted to cure the condition by removal of the mammæ. He reported a case that he cured by an amputation of the breast. Wertheim wanted to give the method a trial, but did not want to resort to such radical treatment. His idea was to isolate the breast by interposing a cushion of oxygen between it and the rest of the body. We were not satisfied with the results.

Amputation of the breast for eclampsia has been ridiculed very much, and the method of injecting oxygen under the breasts has also fallen into disuse.

S. J. Druskin, M.D.

New York.

## ATMOSPHERIC DEVITALIZING INFLUENCES.

To the Editor of the Medical Record:

Sir:—A recent editorial article in the Medical Record drew attention to the claims, emanating from a British source, that high percentages of carbon dioxide in air are not deleterious to health. There is no question but that wide variations in moisture, heat, and movement in the air may be damaging to health, as they certainly are to conditions of bodily comfort. But what basis exists for the new idea that respired air may be practically innocuous as far as its $CO_2$ content is concerned? This new contention has been backed up by some experimentation which has shown that individuals may be confined in atmospheres containing unusual amounts of $CO_2$, and if the air breathed is kept cool and in motion no discomfort is experienced. The further argument is advanced that air at high altitudes may have a lesser proportion of oxygen per stated bulk than much breathed air in inclosed spaces, but is healthful. All this may be true, but such evidence does not warrant the conclusion that much breathed air may not be objectionable. Leaving aside the objections to such air that may be due to organic contaminations, living or dead, there is certainly an objection to breathing air that has an excess of $CO_2$ in it, because that gas has a devitalizing effect on living tissues. The argument has no value that claims no damage done if no discomfort is experienced. One might as well say that tobacco or alcohol has no damaging, devitalizing effects, yet we know that both of these compounds directly devitalize in proportion to their absorption into living tissues. Nicotine, next to hydrocyanic acid, is the most deadly poison known, yet it can be used for a long time without discomfort, and even with much pleasurable experience. Still it does devitalize, and indirectly and more or less ultimately, causes great physical damage to the race. In view of the lamentable lack of existence of general knowledge as to the influence of these as well as other devitalizers on health, it seems to be a matter to deplore that this new idea of no damage from $CO_2$ in air breathed should be advanced. Much publicity has been given to it as presented, and it may do great harm. Carbon dioxide is one of the poisons that is continually being manufactured in the body, which is continually being got rid of by the body. If the body does not get rid of it quickly enough, not only is discomfort experienced, but the death of the body ensues. That fact can be demonstrated very readily by a hard run in even a very cold wind. If the heart and lungs cannot act quickly enough the same result will be experienced. The idea that mountain air is healthful notwithstanding small percentages of oxygen in the air is a *non sequitur*. It may be healthful because it is pure and cool and dry; but as a matter of fact, for most individuals, and with other conditions equal, the greater the atmospheric pressure is, with consequent richness in oxygen, the greater is the vitalizing influence experienced by those who breathe such air. People who are under the influence of devitalizers live slowly and are more subject to other damaging influences that find their opportunity to attack tissues that are defective in vital activity. Those heating devices, such as the steam radiator and the regenerative hot-air furnace, while they save coal through the use in cycle of breathed air, are deadly devitalizers of those who habitually seek comfort through their use. It is rather strange that this new fallacious sanitary idea should have come to the world from England, the home of the open fire and fiercely uncomfortable ventilation. Nevertheless the idea is fallacious.

J. M. W. Kitchen, M.D.

East Orange, N. J.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE DIFFICULTIES—MR. LLOYD GEORGE EXPLAINS AND DEFENDS ACT—LONDON MEETINGS—CHOLELITHIASIS—OBITUARY.

London, January 3, 1913.

All the week we have been flooded with statements, appeals and other documents about the Insurance Act. Besides the arrival of these by post, our newspapers have given us column on column every morning on the various features of the controversy that has arisen. The organs devoted to the government party have displayed little scruple in defending Mr. Lloyd George and openly boast that he has split the profession and will certainly triumph over it. It would be no easy task to enumerate and correct their misrepresentation of facts and their libelous attacks on the faculty are too scandalous to quote No doubt a number of men have agreed to serve under the Act, but they are so decided a minority that it is by no means certain that the panels can be filled, and many close observers expect to see the scheme collapse.

A very unpleasant controversy has been waged as to the obligation of the pledge which was signed, as you may remember, by 27,000 practitioners. It was a promise not to take service unless the "six cardinal points" of the B. M. A. were granted. When the government flatly refused, but gave way on some minor points, the association put forward an alternative policy. This has not been approved by all, and those who were willing to accept the revised terms broke away and formed new organizations which the B. M. A. calls "schismatic." These are begging us not to sell our freedom and become State servants. The association replies that not to keep the pledge is selling our honor. There can be no doubt that circumstances have changed. The B. M. A. says the revised terms of the government have changed, though one hardly sees in that a proof that their own policy has not. The "schismatics" say the B. M. A.'s policy has changed and a promise to stand by one cannot be made to include another. That there is great force in this is seen in the important step taken by six members of Council who have resigned their offices rather than be connected with the attempt to enforce pledges given for the original policy to carry out the alternative one. Another representative meet-

ing is called for the 17th, and certain newspapers consider this as preliminary of a submission to the government. It is nothing of the kind, but has been rendered incumbent on the executive by a requisition from some of the divisions who demand a decision as to the pledges. Meantime Mr. Lloyd George has written to a "schismatic organization" that doctors who go on the panels will be protected by the whole power of the government from boycott and intimidation if necessary.

Wednesday brought out a copy of the B. M. A. manifesto to the profession. It sets out fairly the objections to the Act, emphasizing that the profession would be placed under the control of working men who are not fitted by education or training to deal with questions likely to arise. Further, that the doctor is required to pay for on anesthetist, is allowed nothing for mileage, and there is no income limit because, as the chancellor has admitted, it would lead to loss of votes. How many doctors, says the manifesto, depend on small fees from patients just a little better off than members of their clubs, and may accordingly be ruined because these patients will be swept into the insurance net. For the success of the Act it is calculated that 10,000 doctors will be wanted; less than 8,000 would spell disaster. The conclusion drawn in the document is that the scheme of the association would be for the best interests of the insured persons.

On Tuesday London practitioners residing on the north side of the Thames met and conferred with the Insurance Committee. Much difference of opinion prevailed on several points among the representatives of the nineteen boroughs concerned. It was held, however, to be advisable to arrange for one local committee to be formed for the whole of London and a number were appointed to serve in conjunction with those to be chosen the next day for those practising south of the Thames—one or two for each borough, and in addition two qualified women were nominated. The South Londoners duly met, as arranged, and agreed substantially with their Northern colleagues. The result is therefore united action in London by those who accept service. It was announced that the time for joining the panel was extended until to-morrow—this after many denials that any delay would be permitted. This change is thought to indicate that there are not sufficient numbers available, but government organs pretend that the rush is such as to need checking. The medical committee for London being thus formed is to be consulted in regard to all questions affecting practitioners under the Act. The conference decided unanimously to work on the capitation system. At the meetings of both Northern and Southern residents the question was raised whether a man on the panels would be bound to attend patients of their neighborhoods who declined the service. Many declared they would not take such patients, and demanded the chairman's ruling, but he gave only indefinite answers, and after much pressing said the commissioners would be lenient in this matter. One who had put his name on the panel declared that he would certainly withdraw it if he were expected to steal his neighbors' patients. Some have prefixed to their signatures a condition that they are not to be asked to accept such patients. The chairman of the conference admitted that such a condition might be added. Government organs produce a sort of official report of these meetings, but it is very incorrect.

Yesterday the Chancellor of the Exchequer delivered the speech he had promised to give in explanation and defense of his Insurance Act as it affects the medical profession. Addressing the Advisory Committee, he boasted that his success was complete, for over 8,000 doctors had sent in their names for the panels, and in a day or two the 10,000 supposed to be requisite would be obtained. This may be correct, but when he went on to say that most, if not all, of the several areas in the country were thus filled, he was, as usual, misrepresenting the facts. There are districts where no one has agreed to serve, others where miles intervene between those who are willing. In the Isle of Wight not one is ready to serve. The Surrey Committee last night said that in three-quarters of the county the formation of a panel was not possible. Hertfordshire is as obdurate. In the great towns there is the same inequality of distribution; in Oldham and Birkenhead, *e.g.* only two practitioners have become candidates; in Barrow three; in Northampton 4, and so in many others, though changes may occur from day to day if the time be extended as suggested.

Mr. Lloyd George next propounded a reply to the objection to lay control and expressed surprise that it should have been urged, as payments by the State are always subject to it. He specially alluded to the question put by one and others as to what his own profession would think of such a scheme being proposed in their case. In answer he declared they never objected and proceeded to confuse the issues. As town clerks, or clerks of the peace, or to magistrates, he said the lawyers never objected to lay control of the funds out of which they were paid.

Of course not—neither do medical officers of health and other salaried officials. But this is not a parallel case. Let him offer six or seven shillings a year to his learned colleagues of the law, with the duty of furnishing a client with all the legal aid he might ask for during that year.

Mr. George complained that he had given deputations repeatedly to the B. M. A., but could not arrange a compromise, and at the last moment they had reversed their policy, trampling on their own constitution, without consultation with their constituents. Admitting they have done this, it is no justification of his own course, which in some respects he has had to admit is against the intention of parliament.

A number of other points were taken up in the Chancellor's long speech, and then he came to the pith of it all—what he would do if the panels could not be filled. He evinced a most determined attitude and threatened other arrangements. These were to send additional doctors into the districts and to provide a salaried service, with permission to practise among the families of the insured. This he saw would be ruinous to some individuals, but he was not to blame; he was sorry for them, and had tried to avert it, but they must put the blame on the shoulders of those who had so advised them. Government was pledged to supply medical benefit to the insured, and would do it; yes, pledged to the "approved societies," which is, he reckons, to the voters.

One other point must be noted. Free choice of doctor has been promised all along to the insured. Mr. Lloyd George "explained" this away as only applicable to very exceptional cases recommended by the local committee.

In the Section on Balneology (R. S. M.) a paper

by Dr. Bain, on Cholelithiasis, evoked some interesting experiences. He laid stress on obstinate dyspeptic symptoms as indications for examining the region of the liver. Tenderness on pressure over the gall-bladder invariably preceded the formation of calculi in it, and was no doubt due to its inflamed condition. The normal gall-bladder would dissolve any biliary calculus introduced into it under aseptic conditions. The treatment was to improve digestion, correct injurious habits, and direct suitable exercise. When digestion became nearly normal colalin and urotropin might be administered for several months. Dr. P. Lewis, presiding, remarked that these measures improved the resistance to microbic invasion. Dr. Solly argued that once the diagnosis established, the treatment should be surgical—the only curative measure—and he was supported by Mr. C. Forsyth, who said that now and then the escape of the stone into the bowel took place, but to postpone interference until complications arose was unfair to the patient and to the surgeon. Dr. Keay, who had himself suffered from the disease, thought it would often yield to treatment directed to the digestion, and only in rare cases was operation required. He had been treated at Carlsbad with success. Dr. Bain, in reply, said urotropin was excreted in the bile. He advocated a yearly course at a spa after operation, as that measure did not remove the causes. The surgeons as a rule did not see the mild cases, and their views therefore were based on observations in the advanced stages.

A week after the foregoing discussion Dr. Holland reported at the Liverpool Institute three recent cases of gallstone which he had detected by the *x*-rays. Their bulk was transparent, but they had a crust of lime salts which gave a shadow, and this differed from a calcareous gland and also from a renal calculus. He showed afterwards the three shadows on the screen.

The death was recorded on December 31 of Dr. H. Philpots of Birkenhead, an Aberdeen graduate with honors, 1877; Consulting Surgeon to Dartmoor Convict Prison, who held also other appointments.

Dr. A. C. Chalmers, formerly of Sheffield, has died at the advanced age of eighty-four years, having retired for many years. He took M.D., Edin., and the Surgeons' College there in 1848. At one time was surgeon to the Perth Infirmary.

Surgeon-Lt. Col. W. T. Colby, M.D., J.P. for North Yorkshire, died on December 22, aged eighty-five.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*January 9, 1913.*

1. Report of 110 Cases of Renal and Ureteral Calculi and of Ten Cases Simulating These Conditions, with Comments. F. S. Watson.
2. Some Results of Dispensary Work in the Control of Tuberculosis. C. Floyd.
3. The Sacrifice to Asklepios: A Mime of Herondas. R. M. Green.
4. The Treatment of Hypospadias. H. A. Lothrop.
5. A Case of Pellagra. W. H. Sherman.
6. Pellagra, with a Report of Cases. E. H. Cohoon and F. J. Farnell.

**1. Renal and Ureteral Calculi.**—F. S. Watson, in reviewing a series of 110 cases of renal and ureteral calculi, notes that he has found the following treatment to be most effective. In the medical treatment of renal colic the combined use of ether inhalations and moderate doses of morphine should be resorted to. Heat should be applied to the affected side, and an abundant supply of water should be administered. The patient should be kept on a liquid or milk diet. To aid in the expulsion of the calculus from the kidney the treatment far the most successful in the author's experience is: spirits of turpentine in 10 minim doses in gelatin capsules three times a day. The diet should consist of milk, each tumblerful diluted one-quarter part with Vals' water, the milk to be slightly warmed and drunk slowly. Fish and dry toast may be taken once daily. Patient is to rest recumbent during the regimen and to take occasional hot sitz baths. The treatment should last six days consecutively, then after a two days' interval it should be repeated once or twice, if necessary. After one month or six weeks of this treatment at most, if the stone has not passed, it should be removed by surgical operation. In every one of the author's cases in which the patients were freed from their calculi by medical treatment, cure was absolute and in twenty of these cases the patient's history was followed from three to twenty years subsequently. In but a very small number of these—six—was there any recurrence of the trouble. These patients got rid of their recurring calculi under the same treatment as was employed in the first instance. In seven of the cases treated medically there was failure to cause the calculus to pass. These patients were operated upon successfully later. In 87 per cent. of the author's cases thus treated, in which the calculus was small enough to pass through the ureter, it was spontaneously expelled, while the patients were under medical treatment.

**2. The Dispensary Treatment of Tuberculosis.**—C. Floyd states that statistics show that the dispensary has a well defined and valuable place in the control of pulmonary tuberculosis. Its work cannot be measured in the terms of "cases cured" as can that of the sanatorium, but its usefulness is almost entirely along the lines of diagnosis, isolation, and prevention. The conclusion would seem justified that in the absence of any specific remedy for pulmonary tuberculosis, its suppression will be brought about by the multiplication of those agencies at present working against it. Neither the sanatorium, the hospital, nor the dispensary alone can make much headway, but working together as one unit they will in time fully justify their existence.

**6. Pellagra.**—E. H. Cohoon and F. J. Farnell conclude from their study of this disease that there appear to be several factors standing out prominently. Fifteen out of the twenty-seven cases evinced absent knee jerks, eight gave distinct evidence of peripheral polyneuritis even to the extent of foot drop and muscular atrophy; five cases had diminished knee jerks. Secondly, as in low toxic conditions and infections there was observed a distinct change in the blood picture not unlike that seen by other observers, the differential blood count being one of a small mononucleosis. The cytological count in the spinal fluid although small, two to nine cells per c.mm., appeared to be of sufficient weight to indicate a chronic inflammatory process. The microscopic findings in the central nervous system were suggestive of a central neuritis, the nerve cells showing an infectious or febrile condition of a parenchymatous nature. If, on the one hand, pellagra is to be considered of a toxic or infectious etiology and showing central neuritic evidence; and on the other hand, is distinctly an afebrile condition of unknown bacteriology, it is possible, or even probable for pellagra to produce neuritic symptoms of central as well as of peripheral origin, such as has been seen in the clinical exposition of the author's cases.

### New York Medical Journal.

*January 11, 1913.*

1. Spasm of the Pylorus and Congenital Pyloric Stenosis. H. Koplik.
2. Amebiasis and the Results of Tests for the Determination of Occult Blood in the Feces. R. C. Rosenberger and T. C. Terrell.
3. The Newer Teachings of the Diseases of the Alimentary Canal. M. I. Knapp.

4. Pernicious Anemia. G. W. McCaskey.
5. Crotalin in the Treatment of Epilepsy and Nerve Disorders. J. B. Woodruff.
6. Instruction in Child Hygiene. M. S. Macy.
7. Tuberculous Meningitis. S. Schaeffer.
8. Vanadium Selenium in Cancer. F. von Oefele.
9. The Auscultatory Method of Blood Pressure Readings. J. F. Prendergast.

1. **Pyloric Spasm and Pyloric Stenosis.**—H. Koplik classifies these cases as follows: (1) Pure spasm of the pylorus and the pyloric end of the stomach without any palpable pylorus, with peristalsis and explosive vomiting, loss of weight, and consequent inanition. The constipation present may be only a relative constipation, that is, some fecal matter passes, or there may be several movements, green and fluid in twenty-four hours, or of a brownish color, or the constipation may be absolute and on forced movement of the bowels, little or no fecal matter passes. (2) Pyloric spasm with relative and actual stenosis, with slight or marked thickening or hypertrophy of the tissues of the pylorus. Such cases give vomiting of an explosive type, coming on soon after birth, and continuing for some time with a palpable pylorus, at first, or subsequent to the onset of symptoms. The pylorus can be felt to harden under the finger at the time of greatest peristalsis of the stomach, and to soften after vomiting has occurred. There is constipation, complete at first, which after some duration of the disease mitigates, and fecal particles may appear in the stools. There is marked progressive atrophy and inanition. (3) Congenital hypertrophy of the pylorus so-called with stenosis. These cases, which are only relatively more marked in their symptomatology than the previous class, give exactly the same symptoms; there is the same spasm of the pylorus as an accompanying symptom, the pylorus can be felt just as in the previous class, the peristalsis is just the same, and the constipation is the same, only possibly more marked. In fact, clinically it is the same condition, only it may manifest itself in more aggravated forms than in the cases in which the hypertrophy and stenosis are not so marked. They are practically the same set of cases as in Class 2. When operated upon the cases in Class 3 may show considerably more enlargement and hardening of the pylorus than was evident before the operation. This has given rise to the presumption that these cases are a distinct entity apart from Class 2. The author believes that both of these sets of cases merge into each other and are pathologically the same, though clinically one seems a more aggravated condition than the other.

5. **Crotalin in the Treatment of Nervous Diseases.**—J. B. Woodruff points out that the exact therapeutic action of crotalin is not understood, but this drug probably acts as a stimulant to the central nervous system, as is well illustrated by its effect in nerve exhaustion. Spangler believes that it has a decided influence in revitalizing the functions of the various organs. Another apparent effect is its ability to block undue outside stimulation on the nerves of special sense. Possibly this is illustrated by cases of insomnia in which refreshing sleep is produced without any signs of narcotism. The drug is to be given by hypodermic injections. It is best to give the first two or three injections in the back of the arm and always to begin with a small dose, as 1/200 or 1/150 of a grain. Later the injections are better given in the back where they cause very little reaction. The injection should be given as a rule every five to seven days. In epilepsy the drug causes a diminution in the severity of the attacks. The intervals between attacks are lengthened. The mental activity of the patient is greatly improved. In cases of neuralgia and neuritis, including sciatica, lumbago, tics, coccygodynia, etc., a few injections of crotalin cure the case and often the first injection gives marked relief. In some cases of asthma the crotalin acts almost as a specific and has improved all cases in which it has been tried.

8. **Vanadium Selenium in Cancer.**—F. von Oefele believes that the basis of the selenium treatment is the chemical action of selenium as an oxidizer; especially in carcinoma selenium increases the oxidation of sulphur compounds. Selenium affects particularly the crypt cells of carcinoma. These cells become, by selenium treatment, colloidal. The parenchyma swells up from place to place and becomes degenerated. The colloidal detritus of these degenerated parenchyma cells becomes more and more resorbed and new connective tissue replaces the crypts, increasing the stroma. In a later state this connective tissue retracts. The tumor does not spread further over the boundary line after the selenium treatment. The tumor becomes, therefore, more and more of the demarginated character of fibroma. But the tumor does not disappear under selenium compound treatment. There are certain practical aspects of the selenium compound treatment in cancer cases. If a radical operation is possible, this should be done. But the success of the operation should be improved by subsequent selenium compound treatment, because this treatment prevents relapses and metastases. In other cases it is possible for a partial operation to be performed, and the residue of the operated tumor can be treated internally and locally with selenium compound. In non-operable cases the selenium treatment is necessary. If the condition of this patient and of the tumor are improved, an operation can be done later on. An operation is not indicated in the state of colloidal degeneration of the parenchyma and soft swelling of the tumor. But it seems that in the state of fibroid retraction of the tumor an operation is very often necessary.

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## Journal of the American Medical Association.

*January* 11, 1913.

1. The Theory and Practice of the Treatment of Sterility in Women. E. Reynolds.
2. Intoxication Proceeding from the Intestine, Especially Polyneuritis. C. von Noorden.
3. The Moron and the Study of Alien Defectives. H. A. Knox.
4. The Detection of the Mentally Defective Among Immigrants. C. P. Knight.
5. Demonstration of Spirochæta Pallida in the Cerebrospinal Fluid from a Patient with Nervous Relapse Following the Use of Salvarsan. H. J. Nichols and W. H. Hough.
6. The Human Prostate Gland at Birth, with a Brief Reference to Its Fetal Development. O. S. Lowsley.
7. A Case of Bilateral Urinary Lithiasis. H. L. Kretschmer.
8. The Occasional Clinical Resemblance of Blastomycosis and Syphilis to Sporotrichosis. R. L. Sutton.
9. The Roentgen Ray in Intrathoracic Goiter and Thymus Hyperplasia. A. Crotti.
10. A Combined Bed and Emergency Cot. G. M. Blech.
11. Early Operation for Perforation in Typhoid. C. L. Cole.
12. Longitudinal Fracture of the Lower Extremity of the Radius. R. C. Parrish.
13. Othygroma Nephriticum. A Hitherto Underscribed Disease of the Ear-Lobe. O. Glogau.

1. **Sterility in Women.**—E. Reynolds says that about ten years ago he reached the theoretical conclusion that in most cases female sterility was produced by abnormal genital secretions destructive to the spermatozoon. While the vaginal secretions are normally acid and destructive to the pathogenic organisms as well as to the spermatozoon, their effect on the latter is normally neutralized in coitus by the alkaline cervical secretions. Any excessive acidity, however, is not neutralized, hence the death of the spermatozoon and sterility. When the cervical secretions themselves are deficient or abnormal, though those of the vagina may not be, sterility may also be a result. It is also probable that the cervical overflow due to congested conditions is in itself a cause of sterility as well as the scantiness and the thickening. Another occasional cause of sterility are abnormalities in the ovaries or tubes, even when slight, but these cases form a more difficult subject for the consideration of the obstetrician. A gross salpingitis is not essential, but sterility may occur even when only one tube is affected from the alterations in the uterine conditions and secretions from the infected tube. The ovary is always affected to some extent, and Reynolds' observations lead him to suspect that even moderate enlargements of these ovaries, with their many persistent fol-

licles, are in a perverted physiological condition. As to the prognosis of sterility two forms of the condition are hopeless or nearly so, viz.: that due to infantile or approximately infantile uterus cannot be treated successfully, and sterility occurring after operations for the removal of tube or portions of ovary is, accordingly, not very hopeful. All other forms of sterility are usually remediable. Sterility due to other causes than infantile uterus can be treated with a satisfactory degree of success. As regards surgical treatment the operative alterations of the cervix in shape and condition which insure perfect drainage, together with dilatation and curettage of the uterine cavity, the correction of displacements or other abnormalities which tend to congestion, the reduction of the ovaries to the normal by a conservative operation, and the elevation of the ovaries and tubes to a position in the pelvis which insures a free venous return from these organs, have been followed by a degree of success not before attained in the treatment of this most difficult class of sterilities.

2. **Intestinal Intoxication and Polyneuritis.**—C. von Noorden describes a special form of intestinal intoxication studied by him, in which there is a certain degree of constipation and retention of fecal contents in the sigmoid flexure; there develops a feeling of fulness after eating, which the patients usually refer to the stomach which empties itself slowly and develops a high degree of acidity. Examination of the abdomen reveals over the sigmoid a certain point sensitive to pressure, which corresponds to McBurney's point in appendicitis, and which is called the S point. Diarrhea may occur instead of constipation, from the irritation of the fecal masses which are retained by spasm of the intestinal wall. In many cases the symptoms are restricted to those mentioned, but in others a peculiar clinical picture appears, wandering pains all over the body from the trigeminal area to the sciatic. The joints may also be affected, and there is a mild polyneuritis with circulatory phenomena indicating irritation in the vagus area, such as slow pulse, extrasystoles, dermography, etc. In the majority of cases an unusual excretion of indican is found. H. Eppinger has been able to extract from the feces of some of these patients a poisonous substance which has a marked effect on the vagus and reproduces the symptoms described in animal experiments. He thinks they have succeeded in isolating a bacterium of the paratyphus group but differing from the known forms. The production of poisons is different in different culture media, but the experiments are not yet sufficient for exact details. Another symptom accompanying the picture is a slight subfebrile temperature variation, which may give rise to suspicion of latent tuberculosis but which disappears when the intestinal function is regulated. The treatment has varied with the varying diagnoses. Usually the first diagnosis is simple neurasthenia or rheumatic trouble; frequently the condition has been confused with myalgia, neuralgia, arthritis, and uric acid troubles, and treatment has varied accordingly, but regulation of the bowels is the necessity. Each case should be studied by itself, and the author prefers dietetic management to the use of laxatives. Usually two or three weeks are sufficient to indicate the line of treatment to be adopted.

9. **Thymus Hyperplasia.**—S. Crotti emphasizes the importance of the use of the *x*-ray in intrathoracic goiter and in thymus hyperplasia. In the last three years he has operated on 150 goiters, of which eighteen were partially intrathoracic and six totally such. He made a practice of using the *x*-ray to corroborate the clinical findings and to detect thymus hyperplasia. From what he found published in regard to the thymus he supposed this complication of goiter was rare, but recent experience has led him to think otherwise. He reports five cases observed lately, three controlled by autopsy and one by operation, and his conclusions are given as follows: Röntgen-ray examination must become part of the routine in goiter work. It is of the utmost necessity in intrathoracic goiter. As a thymus hyperplasia is liable to be found as a complication in any kind of goiter, especially in hyperthyroidism, and as this complication may prove fatal to the patient, the Roentgen-ray examination should be applied in every goiter case. The diagnosis of a thymus hyperplasia is possible in the great majority of cases. Röntgen-ray and clinical examinations must be combined to enable one to reach the correct diagnosis. When the diagnosis of thymus hyperplasia complicating a goiterous condition is made the operation should be postponed and the Röntgen-ray treatment should be applied until a marked diminution of the size of the gland is reached. The thymus gland is very sensitive to the Röntgen rays, especially in children.

13. **Othygroma Nephriticum.**—O. Glogau reports a case of elongation of the lobule of the ear following edema from acute nephritis, a hitherto undescribed disfigurement, for which he proposes the name "othygroma nephriticum." He believes there is some analogy between this condition and othematoma, but as the patient would not permit any operation or the removal of a piece of tissue for examination the pathological conditions cannot be stated.

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## The Lancet.

*January* 4, 1913.

1. Insect Porters of Bacterial Infection. C. J. Martin.
2. A Recovery from Infective Endocarditis (Streptococcal). H. Hemsted. With comments by T. J. Horder.
3. Rupture of the Spleen and Liver; Operation; Recovery. W. H. Evans.
4. Glycosuria in Tuberculous Meningitis. R. S. Frew and A. E. Garrod.
5. Removal Through the Mouth of a Tooth-Plate, Impacted in the Esophagus for Two and a Half Years. Sir St. Clair Thomson.
6. Some Observations Upon the Treatment of Pulmonary Tuberculosis with Small Doses of Tuberculin, the Dose Being Regulated by Frequent Estimations of the Opsonic Index. N. D. Bardswell.
7. A Preliminary Inquiry as to the Value of the Complement Fixation Test in Tuberculosis. L. S. Dudgeon, W. O. Meek and H. B. Weir.
8. Radical Operation for Malignant Disease of the Testis. S. Pringle.
9. A Case of Diphtheritic Enteritis. H. M. Cargin.
10. Facial Crinkles and Emotional Grimace. W. A. Hollis.
11. The Ideal Lesion Produced by Judicial Hanging. F. Wood-Jones.

1. **Insect Porters of Bacterial Infection.**—C. J. Martin notes that the fly carries infection to a greater extent by regurgitating the contents of its crop and by defecation than by carrying bacteria upon its exterior. In studying the relation of flies to typhoid fever, the observation has been frequently made that there is a seasonal correspondence between the maximal prevalence of typhoid fever and that of flies. The same parallelism has been noted in the case of infantile diarrhea. The author concludes from the analysis of many available sources of evidence that the fly-carrier hypothesis is the only one which offers a satisfactory interpretation of the extraordinary dependence of diarrheal epidemics upon the accumulated effect of temperature; that it offers a ready explanation of the spread of infection to neighboring children who have no direct personal contact with the patient, and that the peculiarities of the relation in time between fly prevalence and the epidemic in different localities are not inconsistent with the view that fly carriage is essential to epidemicity.

2. **Recovery in a Case of Acute Streptococcal Endocarditis.**—H. Hemsted reports the case of a married woman aged 21 who had a congenital lesion of the endocardium and became infected from a tooth abscess. Ulceration of the mural endocardium resulted in innumerable infarcts in the lungs and a few in other tissues. Streptococci were isolated on several occasions from the blood-stream, and the patient, after being ill for nearly a year, has completely recovered in spite of many adventures. She was treated with autogenous vaccines and autogenous serum. In the early stages scattered pulmonary infarcts produced a picture closely simulating acute tuberculous pleurisy. The author believes that this

is the first case of this kind in which recovery has been reported. The grafting of streptococcal infection on top of a congenital or other lesion of the endocardium has been recently insisted on by Horder and others, and this case seems to emphasise the danger of allowing microorganisms a chance to invade the blood-streams in cases in which endocarditis exists in a latent form or in which there are congenital malformations. In this case the heart valves were unaffected, and the ulcerated patch of endothelium was situated in the right ventricle around an ostium guarding an extra or infundibular ventricle leading to the pulmonary artery. This condition would have accounted for the great predominance of infarcts in the lungs; the invariable presence of streptococci in the expectorated blood; and the difficulty in cultivating cocci from the systemic veins in the first four months of the disease. It is inferred that there was no leak in the ventricular septum in this case, by reason of the relative paucity of signs in the systemic circulation. The fact of the valves remaining healthy facilitated complete recovery.

4. **Glycosuria in Tuberculous Meningitis.**—R. S. Frew and A. E. Garrod find that glycosuria is by no means an uncommon symptom in tuberculous meningitis, for it occurs in more than one-third of all cases of that disease; that sugar is most apt to appear in the urine during the last days of the patient's life; and that this variety of glycosuria probably has its origin in the cerebral lesion and belongs to the nervous group, but to what special lesion or other factor its occurrence is due the authors have not been able to determine.

6. **Tuberculin Treatment of Tuberculosis.**—N. D. Bardswell states that the dosage of tuberculin given to the patients in King Edward VII Sanatorium in 1907 was never outside the limits of 1/1000 to 1/600 milligram, T.R. being the preparation used in every instance. Thirty cases in all were treated, over periods varying from a minimum of six weeks to a maximum of twenty-five weeks. Thirteen of these cases had less than six inoculations. The remaining seventeen cases were patients with well-marked lung disease. Classified according to to Turban-Gerhart method, twelve would be described as Group II and five as Group III cases. No case of early and limited disease (Group I) was included. The cases then were for the most part of an unfavorable type clinically. (1) *Immediate result*—In the case of all the patients thus treated the injection of the small dose of tuberculin nearly invariably resulted in a satisfactory immunizing response, as shown by the rise in the opsonic index. The repeated immunizing responses were not, however, associated with any appreciable alteration in the clinical condition, in respect to such essential factors as reduction of temperature, diminution in the amount of sputum, disappearance of tubercle bacilli, etc. The author was unable to detect any difference whatever in the progress of the tuberculin-treated patients as compared with the progress of similar types of patients who, living under precisely similar conditions, were not having tuberculin. In no case did the weekly repetition of the small doses of tuberculin give rise to any hypersensitiveness. (2) *Ultimate results.*—Considering only the seventeen cases whose treatment extended over periods ranging from a minimum of seven weeks to a maximum of twenty-five weeks, the results are as follows: Of twelve cases of moderately advanced disease (Group II), after a period of five years since discharge from the sanatorium, four, or 33 per cent., are well, and the remainder are dead. Of those who have died, two lived for over four years, three lived for over three years, two lived for over one year, and one lived three months only after discharge. Two of the four patients who are well lost their bacilli before they left the sanatorium. The five cases of very advanced disease all died within twelve months of their discharge. These results compare somewhat unfavorably with the ultimate results of comparable cases treated in the sanatorium during the same period without tuberculin. The numbers treated with tuberculin, however, are small, so no great importance can be attached to such a statistical comparison. The conclusion that the author seems justified in arriving at is that the tuberculin from a clinical point of view, was a negligible factor, and in no wise influenced either the immediate or the ultimate prospects of the patients to whom it was given.

10. **The Emotional Grimaces of Infancy.**—W. A. Hollis notes that emotional expression is probably reduced to its simplest terms in the newborn—that is, to a pitiful indication of bodily discomfort. In the face a puckered bulge of integument over the forehead at the root of the nose is probably the first intimation an outsider obtains of the child's feelings. Meanwhile, the surrounding features are, as it were, dragged towards this center of motor activity. The nose-tip is tilted upwards and the upper lip tightened. The inner canthi of the closed eyes are drawn together, the eyebrows converge, and the swollen mid-frontal region is depressed. Even the mouth at first is tightly shut, the lips squeezed together, and the chin forced upwards. Soon, however, the jaw drops, respiration becomes spasmodic, and cries are uttered. In seeking to explain the significance of an infant's grimace the author states that a large number of mammals, perhaps a majority, enter life sightless. The human fetus, on the other hand, unlike a kitten or a puppy, is not born with its eyelids sealed for nine days. Yet these screens are seldom raised during that period. The glamour of daylight is doubtless prejudicial to the development of the infant's eyes. For some weeks after birth the quantity and quality of the admitted light is automatically regulated by prolonged closure of the eyelids. Under these conditions the brightest rays of sunshine are so sifted and modified that only waves at the red end of the spectrum—that is, the blood-tinted light which penetrates the translucent lids of the closed eyes—can, as a rule, stimulate the immature retinæ of the child.

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## British Medical Journal.

*January* 4, 1913.

1. Insect Porters of Bacterial Infections. C. J. Martin.
2. An Address on Gallstones. Sir Berkeley Moynihan.
3. A Lecture Introductory to an Advanced Course on Tuberculosis. S. Delépine.
4. The Cult of Iodine and the Dread of Skin. J. L. Thomas.
5. Aberrant and Recurrent Osteomyelitis. R. C. McGuire.
6. Primary Sarcoma of Both Biceps Muscles. E. Scott-Carmichael.
7. Cocaine Poisoning. C. Bose.
8. An Experiment to Illustrate the Effect of Size of Population on the Rate of Selection of New Bacterial Races. W. J. Penfold.

1. **Insect Porters of Bacterial Infection.**—By C. J. Martin. (See page 171.)

2. **Gallstones.**—Sir Berkeley Moynihan finds that a very large number of patients—probably, indeed, a large majority—who have suffered for years from "gastric" disorders have no organic disease in the organ impugned, but have a real structural disease in other parts, notably the gall bladder or the appendix. The "inaugural symptoms" of gallstones are briefly recapitulated as follows: The patient complains of a fullness, weight, and distention, or oppression in the epigastrium coming on soon after meals, within half or three-quarters of an hour, relieved by belching, and dismissed almost on the instant by vomiting, elicited with remarkable constancy by certain articles of diet, especially those of a "greasy" nature, and dependent rather upon the quality than upon the quantity of the food. There is a sensation of great tightness, which if unrelieved may become acute pain, from which the patient obtains ease by bending the body forwards, by flexing the right thigh on the abdomen, or by loosening all garments which fit tightly to the waist. There is frequently great complaint of "acidity" or heartburn, and in

the act of belching there may be sour or acid regurgitation. While the discomfort lasts the patient may notice a "catch" in his breath, and he finds, perhaps, that it is impossible to breathe deeply without feeling an acute stabbing pain at the right costal margin. There may be a feeling of faintness and nausea, and, rarely, vomiting may occur spontaneously. After a more than usually severe attack of "indigestion" the body and side may feel stiff for several days. A frequent and a very characteristic early symptom of cholelithiasis is the occurrence during an attack of indigestion of a slight sensation of chilliness, especially in the evenings after a meal. The patient may shiver for several minutes, and may hasten from the table to huddle over a fire. The sensation of "goose flesh" is often experienced, and several medical men upon whom the author has operated have said that in the severer phase it was not unlike a very slight rigor, the chilly stage being quickly followed by one in which the body feels hot and the skin begins to act queerly. The author believes that when once a diagnosis of gallstones has been made, operation is always indicated unless there are grave reasons forbidding resort to surgery.

**3. Problems of Tuberculosis.**—S. Delépine notes that an attempt which has been made of late years to apply very accurate mathematical methods to the interpretation of data of doubtful value has disturbed scientific opinion to such an extent that facts capable of clear experimental proof are now doubted. Heredity, which had ceased to be considered as having more than a secondary share in the spread of tuberculosis, is once more brought forward as a factor of first importance. The very wide distribution of the *Bacillus tuberculosis*, and the fact that the great majority of people have at one time or another been harboring the tubercle bacillus and yet have recovered, as well as the analysis of returns of very unequal values, have led some statisticians, Karl Pearson, for instance, to doubt whether tuberculosis should be considered as an infectious disease in the ordinary sense. Such views, if correct, would strike at the root of all modern methods of prevention of tuberculosis. The importance of predisposing factors is often so great that not a few clinicians and administrators have given but scant attention to the essential cause. It must be acknowledged that in many cases it is possible to obtain excellent results by dealing thoroughly with predisposing causes, and often there is no other course open. It is, however, never safe to disregard, even temporarily or partially, the *causa causans*, because it is liable to variations and may, under the influence of circumstances, acquire infective powers exceeding the average. Neither is it safe to trust entirely to the action of natural or artificial curative agencies. Recoveries from infectious diseases may be apparent or real, and do not invariably result in so great a reduction in the number of infective centers as might be expected. Recoveries brought about by natural processes introduce an additional element of complexity in one's estimates of the incidence of various infectious diseases. In studying the conditions which influence the prevalence of any infectious disease one must, therefore, take account of the possible action of a great number of factors, which may roughly be grouped into the following categories: (1) distribution and habits of the infecting parasite; (2) conditions influencing the quantity of the parasite; (3) conditions influencing the virulence of the parasite; (4) opportunities and channels of infection; (5) conditions influencing the resistance of the possible host; and (6) proportion and completeness of recoveries.

## Berliner klinische Wochenschrift.

*December 30, 1912.*

**Gallstone Ileus.**—Tietze has done 100 operations for ileus in general during the past seven years. Naturally, the great quest at the present time is to diagnosticate the cause and seat of the obstruction and the various types of ileus. Wahl, a recent writer, distinguishes sharply between obturation and strangulation ileus, and there are many points of difference between strangulation and paralytic ileus, although diagnosis is not always easy. It is also necessary to exclude peritonitis in these cases. The author now takes up gallstone ileus. An elderly woman had been vomiting bile and complained of colicky pains. Soon the vomitus took on fecal characters. At the same time other evidences of a stoppage were apparent. There was no history pointing to similar antecedent troubles. Abdominal palpation showed the presence of peristalsis. The vomiting showed a cyclical character. This was sufficient for a diagnosis of obturation ileus in the small intestine. There were two minor points in the history regarded as significant, to wit, intolerance of the stomach to cold drinks and a vague history of gastric disturbances (the patient had denied positively both biliary colic and gastralgia). There was some biliary matter in the urine. The diagnosis was then made of gallstone ileus, so that the resulting laparotomy was not exploratory in intent. A large stone was at once located and removed. Others were sought for in vain. The patient continued to vomit and thirty-six hours later the gall-bladder was exposed and found adherent to the stomach and duodenum as a large, firm conglomerate. The patient succumbed after the second operation, and autopsy showed that the stone had ulcerated into the duodenum.

**Experimental Chemotherapy of Bacterial Infections.**—Levy reports some work with the promising parasitotropic substance ethylhydrocuprein. He had already shown that the latter could antagonize successfully the experimental pneumococcus septicemia of mice. It therefore became desirable to test it in other like forms of disease due to other bacteria. It was soon learned that the drug was inert against the *Streptococcus longus*. The coincidence was remarked that the pneumococcus unlike its own congeners behaved in some ways like the protozoa which are also known to be reached by parasitotropic remedies. Thus pneumococci dissolve readily in bile and solutions of biliary acids. Using this as a standard the author tested the behavior of other bacteria toward bile, and soon learned that the *Streptococcus mucosus* also dissolved in bile acids. Mice were then inoculated with cultures of the same and experiments showed fully that even in the full bloom of a mucosus infection the latter could be controlled by ethylhydrocuprein. The untreated control animals succumbed promptly.

**Diffuse Purulent Peritonitis from Diverticulitis.**—Pollnow reports a case in which a subject with a Meckel's diverticulum developed a violent abdominal crisis. During a previous attack of appendicitis the appendix was removed, and the presence of the diverticle was noted. However no resection was performed. The woman was now three months pregnant. Diagnosis was made of adhesion ileus probably combined with peritonitis. The surgeon who had operated before was called in and performed laparotomy, and found fecal matter in the peritoneal cavity. The perforation was found to have occurred in the now gangrenous Meckel's diverticulum. The precise evolution of the condition was as follows: 1. Chronic diverticulitis. 2. Adhesion ileus secondary to same. 3. Incarceration and grangrene of inflamed diverticle. 4. Perforation of same and general peritonitis. The treatment consisted in extirpating the gangrenous diverticle, replacing the twisted loop of intestine, irrigation of peritoneal cavity, and infusing 50 c.cm. of 2 per cent. camphor oil. The bowels soon moved. Two days after operation abortion occurred and curettage was done. Fever persisting on sixth day the abdomen was reopened and several abscesses opened and drained.

## Insurance Medicine.

**Conservation of Life as Affecting Life Insurance Companies.**—Dr. P. D. Gold, Jr., of Raleigh, N. C., read a paper entitled "Conservation of Life as Affecting Life Insurance Companies" before the American Association of Medical Examiners, Atlantic City, June 4, 1912. In dealing with this subject the speaker pointed out that we are confronted with difficulties in obtaining sufficient statistics to present a definite or exact amount of the benefit that is received. No life insurance company has conducted a campaign of life conservation long enough to produce data that are of value. Attention was drawn to the fact that the average life is not the same the world over. Life insurance statistics are based on the death rate of the insurable class and general vital statistics include both the insurable and the non-insurable class. Therefore, analyzing the application of conservation of life to these figures, we realize we are attempting to apply an uncertain quantity to a business based on mathematical averages. Dr. Gold entered into a consideration of figures and details bearing on the matter which we have not the space to discuss here. He concludes that every assistance, every encouragement that can be given to efforts for human welfare and life prolongation should receive the hearty support of life insurance organizations. Individual companies should not be expected to bear the burden alone, for the varied interests are so interwoven that all would receive the benefits from the efforts of the few. United action alone can ensure a full realization of our ideals.—*Lancet-Clinic,* November 23, 1912.

**Life Insurance and Carious Teeth in Septic Mouths.**—The series of articles on the above subject, contributed by authorities, which have been running in *Oral Hygiene,* closed in the issue of that journal for September, 1912. In conclusion it is stated that one purpose of the series of articles has been to focus attention on the contributions that diseased, decayed, deformed and deficient teeth, and their faulty artificial substitutes, make to the sum of the etiological factors involved in the excitation and continuation of diseases and disorders considered. The purpose of medical examination for life insurance is to protect the companies from accepting undesirable risks. The study of many deadly diseases convinced one that deformed, decayed and diseased dental organs are a direct or indirect, indisputable contributor to the cause. This being true, and the function of the insurance medical examiner being to eliminate undesirable risks, and to detect any present or potential danger of disease, very logically the mouth should receive the same careful examination as other vulnerable organs. 2. It will increase the companies' business in another way, namely, by a medical or dental examiner suggesting to an applicant that if certain correctible conditions are remedied, the application will be successful. This will have a psychological effect. The minute you say to a man or woman "You cannot have such a thing until certain things are remedied," that minute the desire for the thing is increased, the conditions will be corrected and the business of the company will be further augmented. 3. The mere fact of an insurance company requiring and instituting this dental examination will be a further advertisement of the care with which it selects its policyholders, and will attract new business for this reason. 4. It will decrease the losses of the company. If this be all true, what good will it do the policyholders, present and prospective? 1. Whatever benefits the company benefits the policyholders in some way. 2. The policyholder, after a dental examination, will have at least the assurance that if the hygiene of the mouth is maintained and his dental organs, natural or artificial, are in a sound condition, he must expect to live longer, have less liability to disease, and will not have to die to collect his endowment policy. 3. It will supply him with the most powerful incentive to get and maintain his teeth in a proper condition, for has he not had it brought home to him that the greatest business in the world says, "Sound teeth are necessary to prolong life and guard against disease"? And has he not just had them repaired at some expense to himseld? 4. If diseased teeth are a menace to the health of the individual, very certainly they are a menace to the health of those with whom he comes in contact. 5. If proper dental attention is a guard against disease, it must very certainly be no passive promoter of good health, good looks, good morals, and good thoughts.

**A Proposed Reform.**—Flesch refers to the efforts of insurance companies to suppress, as far as possible, all avoidable mortality of the insured. Medical selection, however strict, is not enough in itself. Shortening the term of insurance is a factor of no little importance but this lowers the total value of the insurance to the public and is also difficult to carry out. Mortality is due to two groups of factors, endogenous and exogenous. The former include heredity, and the status up to the time of selection. Careful medical examination will weed out much of the bad possibilities of endogenous factors. Exogenous causes come under four heads, viz.: bacterial infection, traumatism, intoxications and neoplasms. This responsibility here may, to a large extent, be put up to the insured himself, who should be informed accordingly. Example—a risk develops a severe facial neuralgia, and, not finding relief, commits suicide. This risk may have no means of knowing that deep alcohol injections and gasserectomy can give him permanent relief or at least a prolonged respite. Again, a risks suffers from chronic otitis media, which is unrelieved by conservative management. He ought to be told that his life is seriously menaced, and that a radical operation, with practically no peril to himself will rid him from this menace. The author expresses his belief that a course of tuberculin injections can so retard the development of dementia paralytica that the risk may outlive his insurance period.—*Zeitschrift für Versicherungsmedizin,* 1912, V, Heft 10.

**Medical Section of the American Life Convention.**—The third mid-year meeting of this Society will be held at Hot Springs, Arkansas, on February 26, 27 and 28, under the presidency of Dr. H. A. Baker. Papers will be read by Mr. Isaac Miller Hamilton, President of the Federal Life; Mr. Virgil M. Kime, Associate Actuary of the American Central Life; Dr. J. T. L. Battle, of the Southern Life and Trust; Dr. W. S. Kendrick, of the Southern States Life: Dr. James H. Wroth, of the Occidental Life; Dr. C. R. Dudley, of the Missouri State Life; Dr. H. B. Miller, of the Security Mutual Life; Dr. M. D. Silver, of the Michigan State Life, and Dr. George W. Combs, of the Reliable Life Insurance Company.

# Book Reviews.

Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege. Herausgegeben von Dr. L. Katz, Spezialarzt für Ohren-, Nasen-, und Halzkrankheiten in Kaiserslautern; Dr. H. Preysing, Professor der Ohren-, Nasen-, Kehlkopfheilkunde, ord. Mitglied der Akad für prakt. Medizin zu Coln a Rh.; und Dr. F. Blumenfeld, Spezialarzt für Nasen-, Hals-, und Limgenkrankheiten in Wiesbaden. I Bd., 2. Hälfte, Lieferung 6; price 4.50 marks. II. Band, Lieferung 1, price 6.50 marks. III Band, Lieferung ¾, price 14 marks. IV. Band, Lieferung 3, 4, price 8.50 marks. Würzburg: Curt Kabitzsch (A. Stuber's Verlag,) 1912.

The wide scope and superb execution of this work have already been referred to in these columns in the reviews of the earlier parts that have been issued. The sixth installment of the second half of the first volume begins with an article by Edmund Meyer on the phlegmonous inflammations of the upper air passages. This is followed by an article on the septic diseases by Kissling, of Hamburg. The first installment of the second volume contains a full and admirably illustrated article on the injuries and surgical diseases of the external ear by O. Voss of Frankfort a. M. The third and fourth installments of the third volume contain the conclusion of the article on the operations of the accessory sinuses of the nose by Boeuninghaus, and the remaining 200 pages are devoted to a most extensive and complete exposition of the subject of intranasal surgery by L. Katz, one of the editors of the entire work. The full page plates, mostly colored, as well as the other illustrations, are particularly numerous, and like all those that appear in the other sections of this monumental work represent the finest examples of the artistic illustration of medical books. The third and fourth installments of the fourth volume contain the concluding pages of the article on the surgery of the thyroid by Gluck and Soerensen, an article (really a monograph) of 114 pages on the subject of laryngofissure by Hansberg of Dortmund, and the beginning of an article on endolaryngeal operations by F. Blumenfeld of Wiesbaden.

Pathology and Treatment of Diseases of Women. Fourth edition. Rewritten by A. Martin, Professor and Direktor, and Ph. Jung, Professor and Oberarzt der Universitäts-Frauenklinik in Greifswald. Only authorized English translation, written and edited by Henry Schmitz, M.D., Professor of Gynecology, Chicago College of Medicine and Surgery, Medical Department, Valparaiso University; Attending Surgeon, St. Mary's of Nazareth Hospital; Attending Gynecologist, Frances E. Willard National Temperance Hospital, Chicago. With 187 illustrations, 25 of which are in colors. Price $5.00 net. New York: Rebman Company, 1912.

This is a handsome volume of 475 pages and represents the first English version of the fourth edition of the well-known work of Martin and Jung. The chief virtues of this book are its conciseness, the admirable classification of the various gynecological ailments, and the exceptionally complete presentation of the subject of treatment. The needs of the general practitioner are amply supplied in the full discussion of the office and now surgical treatment of diseases of women, while the demands of the surgeon are met in the detailed description of the various operations. The illustrations, which are numerous and of artistic merit, are particularly helpful. The book is well adapted for didactic purposes by virtue of the systematic arrangement of its subject-matter and the black-face side-headings and important words in the text. Non-essential, doubtful, and controverted points are excluded, and only facts, most of which have been verified by the authors' own experience, are given a place. The translator has rigidly adhered to the German text, which probably accounts for the rather cumbrous and complicated style, which makes the reading somewhat difficult. The book may be recommended to the practitioner and gynecologist as one representing modern gynecology from the German standpoint.

Diagnose der Simulation nervöser Symptome. Ein Lehrbuch für den Praktiker. Von Priv.-Doz. Dr. Siegmund Erben, Wien. Mit 24 Textabbildungen und 3 Tafeln. Price 8.50 marks ($2.15). Berlin und Wien: Urban & Schwarzenberg; New York: Rebman Company, 1912.

A most interesting domain of medicine is explored in this textbook, which deals with the important subject of recognizing the various manifestations that simulate nervous symptoms. This subject is one that appeals to the general practitioner and to the neurologist, but more particularly to the medical examiner of accident insurance companies and to medicolegal experts. The author covers the ground with the thoroughness characteristic of the German investigator. The text is subdivided under the following headings: Nervousness, nuerasthenia, and the traumatic neuroses; anesthesia, hyperesthesia, and paresthesia; pain and hyperesthesia; motor symptoms; vertigo; malaise; attacks of fainting, epilepsy, and hysteria; coma; and idiocy.

The Blood: A Guide to its Examination and to the Diagnosis and Treatment of its Diseases. By G. Lovell Gulland, M.A., B.Sc., M.D., F.R.C.P.E.; Physician to the Royal Infirmary and to the Royal Victoria Hospital for Consumption, Honorary Physician to Chalmers Hospital, Lecturer on Medicine at Surgeon Hall, Edinburgh; and Alexander Goodall, M.D., F.R.C.P.E.; Lecturer on Physiology and on Practical Medicine at Surgeons' Hall, and on Diseases of the Blood in the Edinburgh Postgraduate Courses in Medicine; Examiner in Physiology to the Royal College of Physicians, Edinburgh. With 16 Text illustrations and 16 colored Plates. Price $5.00. New York: E. B. Treat & Company, 1912.

The subject of the blood and of its diseases comprises a distinct branch of clinical medicine, the mastery of which requires practically a lifetime of special study. For this reason it would seem as if the expert hematologist alone is competent to pass upon the diagnosis and treatment of such conditions as pernicious anemia, the various leucemias, etc. Medicine has not as yet reached this stage of specialism. The general practitioner must undertake the management of these cases, but in doing so he must rely upon the findings and advice of the clinical pathologist in making his diagnosis and in checking up his therapeutic results. The present volume is a most valuable contribution to the literature of hematology, for it combines in the rather unique manual the qualities of a guide-book both to the clinical pathologist and to the internist. It discusses the histology and physiology of the blood; the technical steps and methods employed in the examination of the blood; the changes in the blood occurring in various diseases; the clinical picture of the various diseases characterized chiefly by the accompanying changes in the blood; and the methods of treating these diseases. The latest advances in the subject of hematology are fully presented in this work. The chapters on the tropical blood diseases are particularly valuable in view of the recent impetus given by the study of tropical diseases. The work bears the imprint of ripe scholarship, and is exceptionally well written. The illustrations and particularly the colored plates are of a high order of artistic merit. The volume may be recommended without hesitation as one of the best treatises on the subject that has appeared within recent years. The consummate art of the publisher is seen in the unusual excellence of the paper, type, and binding.

Cerebellar Functions. By Dr. André-Thomas, Ancien Interne des Hôpitaux de Paris. Translated by W. Conyers Herring, M.D., of New York. With 80 Figures in the Text. Nervous and Mental Disease Monograph Series No. 12. Price $3.00. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

The subjects of the physiology, the pathology, and the nerological significance of the cerebellum have undergone considerable development within the past few years. A complete exposition of the current knowledge of these subjects is presented in this excellent monograph by André-Thomas. Part first sets forth the facts under the headings of anatomy of the cerebellum, experimentation and destruction of the cerebellum, and symptomatology of the affections of the cerebellum. Part second presents an interpretation of these facts. It discusses the cerebellum, and the organic functions, the cerebellum and sensibility, the cerebellum and intelligence, and the cerebellum and motility. An extensive bibliography concludes the volume.

The Blood of the Fathers. A Play in Four Acts. By G. Frank Lydston, Chicago: The Riverton Press, 1912.

This work by Dr. Frank Lydston is somewhat of a problem play, a study in heredity and environment. It is a play with a purpose, a plea for the betterment of the race mentally and physically by social and scientific means. The plot is ingenious and the play is written with a considerable amount of power.

# Society Reports.

## SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Twenty-fifth Annual Meeting, Held at Old Point Comfort, Virginia, December 17, 18 and 19, 1912.*

The President, Dr. J. M. T. Finney, of Baltimore, in the Chair.

**Intestinal Obstruction, with a Clinical Study of One Hundred and Eighty-One Cases.**—Dr. Alexius McClannan, Baltimore, stated that the form of operation required in any given case must depend on the nature of the obstruction and on the presence or absence of complications. Thus we grouped the operations performed into three classes, namely, relief of the obstruction, excision of intestine, and enterostomy. In order to judge the efficiency of any of these operations it was necessary that the procedures be compared with regard to the stage of the disease at which the operation was performed. This was the only logical basis for study of the treatment of obstruction and avoided the confusion of many classes as to causation, differences in position of the obstruction, and variations in the completeness of the occlusion. Each of these factors altered the rapidity of development and the duration of the three stages of the disease, consequently a study of intestinal obstruction from the point of view of the symptomatology and treatment of these stages balanced the relation of the various factors and made the comparison of operative statistics possible. Of thirty-four patients treated in the first stage, all recovered. Of these twelve were relieved of their symptoms by enemas and purgatives. The other twenty-two were operated upon; in fifteen the obstruction was relieved; resection was performed in three cases; enterostomy with short circuiting and enterostomy with relief of obstruction once each. Simple enterostomy was done twice. Relief of the obstruction, therefore, was the best operative procedure in cases treated during the first stage. When provision had been made for a delayed enterostomy, this was the best procedure in post-operative obstruction, probably because opening the previously brought up loop gave no operative shock. Sixty-five patients were operated upon in the second stage, fifty-five recovered, eleven of these died as a result of a second operation or some complication developing later than one week after the original operation. The operations performed were as follows: Relief of obstruction, forty-four, six fatal; short circuiting, two; excision, fourteen; enterostomy, four; enterostomy, with other operations, fifteen. One patient was relieved by an enema. Gangrene was present in ten cases; two were treated by anastomosis and excision; eight patients recovered; six were resected. Relief of the obstruction seemed the best operation in the second stage, provided gangrene had not developed. In the presence of gangrene resection was the best operation, provided the constitutional symptoms were not pronounced. In the latter event, enterostomy should be added to the resection, or if the condition of the patient was grave the loops might be brought out of the abdomen packed off with gauze, with an enterostomy above the obstruction. Eighty-two patients were operated on in the third stage; fifty-two died. Relief of the obstruction was done in 22 per cent. of the cured, 34 per cent. of the fatal cases. Enterostomy and relief in 22 per cent. of the cured, 8½ per cent. of the fatal. Simple enterostomy in 45 per cent. of the cured, 32 per cent. of the fatal cases. Enterostomy with other operations in the remaining cases, three cured, and nine fatal. Resection was done in one fatal case, and extrusion in two others. One patient was relieved by an enema and five died without operation. Gangrene was present in fifteen cases, two cured and thirteen fatal. In both the cured cases enterostomy and excision were done. In the third stage enterostomy should be done, either alone or in connection with the other procedures. In the non-gangrenous cases enterostomy was done in 77 per cent. of the cured and in but 41 per cent. of the fatal cases.

Dr. Joseph C. Bloodgood of Baltimore said that Dr. McClannan was the first to publish a large number of cases showing the importance of the effect of washing out the stomach and of giving enemas to aid in the early diagnosis of intestinal obstruction, a thing always neglected outside of the hospital, and often neglected in the hospital, namely, the importance of the stomach tube and enema in the differential diagnosis. In going over his cases years ago he was surprised at the difference between the mortality of cases of intestinal obstruction taking place in the hospital and those outside of the hospital. Those in the hospital had just been subjected to operation, and, therefore, were not considered good operative risks, yet the mortality from post-operative obstruction was much less than it was outside, due to the early recognition of the obstruction, and in the majority of cases early diagnosis had been made by the use of the stomach tube and enema.

Dr. Henry T. Byford of Chicago stated that one point in the treatment which it was necessary to consider, and one which involved the early diagnosis, was whether the obstructed gut was going to result in gangrene or some permanent injury, or whether the patient could be carried along for awhile without any resulting injury. In post-operative cases, in which there was a kink in the intestine or adhesions sufficient to cause paralysis, if we were in doubt as to whether there was really an obstruction or adhesions sufficient to cause paralysis, if we could introduce two or three quarts of fluid into the system we might be able to carry the patient over a week or more, so that there would not be any gangrene, as in a case of volvulus, intussusception, or hernia, and this explained why cases got along better in a hospital than those outside of such an institution.

Dr. John Young Brown of St. Louis said the importance of draining the distended loop of bowel above the obstruction could not be too strongly accentuated. A number of years ago, in a paper he read before the Mississippi Valley Medical Association, he reported a series of cases in which he resected the gangrenous gut and described a method of draining the loop of intestine above the obstruction, namely, to cut across the bowel, introduce a tube into the bowel, and while an assistant was handling the bowel above, the resection was made without losing any time. The use of the stomach tube and rectal tube, both before and after operation was of exceeding importance.

Dr. Ernst Jonas of St. Louis said that early operation in cases of intestinal obstruction by a poor operator was preferable to a late operation by the most experienced surgeon. The doctor should be warned about giving cathartics by mouth if there was any doubt as to intestinal obstruction. Cathartics in these cases aggravated the condition. If enema and lavage did not relieve the patient, preparations for operation should be made.

Dr. I. S. Stone of Washington, D. C., said that purgatives not only did harm, but they were rarely indicated. With the use of eserin and enemas, properly given, he had never seen a purgative necessary. Since he had been using that combination he had never found a secondary operation necessary where the conditions were not most formidable where that simple method of treatment was properly tried.

Dr. James E. Moore of Minneapolis wished to emphasize the axiom laid down long ago by Craig Smith, that the distended bowel should be relieved by making an opening into it.

Dr. Samuel J. Mixter of Boston, Mass., said in looking back on the fatal cases of intestinal obstruction it would be found death occurred in those cases where the intestine had not been emptied, or where an anastomosis had been done immediately and the septic contents of the occluded intestine had been poured into the lower intestine. Abbé pointed out that the intestine below was starved and ready to take up the material poured down from above, and in that way a rapid and fatal sepsis ensued.

Dr. Charles H. Mayo of Rochester, Minn., said in the last year, in cases of intestinal obstruction, they had in four cases through the appendicostomy incision been able by drainage to overcome the immediate obstruction.

Dr. Joseph Ransohoff of Cincinnati, Ohio, called attention to the use of the *x*-ray in locating the obstruction in acute cases. Outside of hospitals, this was out of the question, but when a patient was brought into the hospital it took but a short time to get an *x*-ray picture, and in three recent cases the obstruction was located by this means.

Dr. Robert T. Morris of New York City stated that for a year or more he had been using injections by rectum of bismuth solution, also using it by the stomach as far as possible, and then employing the fluoroscope, and in this way determining definitely the seat of the obstruction.

Dr. William D. Haggard of Nashville called attention to enterostomy as a temporary measure in saving the patient's life. He did four enterostomies last year, in three of which the patients required no secondary operation. They were all saved.

Dr. H. A. Royster of Raleigh, N. C., said if there

was retention of scybalous masses and the bowel was gripped on something and could not release itself, if the gut was much distended, and the patient was vomiting, with very little or no pain, we could give a few doses of eserin, say one-fourth of a grain of the salicylate, every two or three hours, until two or three doses were given, to be followed by an alum enema. If the patient was in great pain we could give one-hundredth of a grain of hyoscin, to be followed two hours later by an enema. With this treatment he had found some cases did not need operation at that time, and operation could be safely done later, while other cases did not need operation.

Dr. J. M. T. Finney of Baltimore said he had used the appendix after the method mentioned by Dr. Mayo in eight or ten cases of intestinal obstruction, and in his experience it did all that Dr. Mayo said it did, and it was a very valuable aid in those cases where the obstruction was low down. The indiscriminate use of eserin was followed by disastrous results. His attention had been called to the fact by Dr. Abel of the pharmacological department of the Johns Hopkins Hospital, that eserin under ordinary circumstances had a marked depressing effect. In one case it apparently had a very alarming effect. In one or two others it was followed by marked symptoms of depression, but its withdrawal was followed by decided improvement.

Dr. Rufus B. Hall of Cincinnati emphasized the point made by Dr. Brown in reference to draining the intestine above the seat of obstruction in those cases where it was thought best at the time of the operation to resect the gut. He had used the method advocated by Dr. Brown in a number of cases with satisfactory results. As to the use of eserin, he had seen a number of cases in which there was depression following its administration, and he usually gave it in no larger doses than one-fortieth of a grain.

Dr. Randolph Winslow of Baltimore said that neither eserin nor any other agent was going to relieve a patient when the intestine was mechanically obstructed, and there was nothing to do but to operate. Eserin could only do good in cases in which the bowel was not mechanically obstructed.

Dr. Henry O. Marcy of Boston said the earlier we operated in cases of intestinal obstruction the better. The lives of many patients were lost by delay. When the diagnosis was made it was not only important to determine to operate, but how soon to do so.

Dr. J. Wesley Bovée of Washington, D. C., had been using eserin as a routine in every case after operation ever since Dr. Craig of Boston brought it to the attention of the profession. It never failed to produce a bowel movement in a case in which there was no intestinal obstruction.

Dr. W. W. Crawford of Hattiesburg, Miss., had personal knowledge of a patient who was given one-fiftieth of a grain of eserin by mistake, and who was greatly prostrated by it, so that for two or three hours death seemed imminent. However, the patient did not die. Another patient, a clergyman, to whom he administered one-fortieth of a grain of eserin on the second or third day after the operation, told him he felt as though a stick of dynamite had exploded within him.

Dr. Gordon K. Dickinson of Jersey City said the diagnosis of intestinal obstruction was so uncertain in many instances that to wait until it was made definitely would be to wait until it might be too late to do any good. It was better to go in and tap the gut, and, if necessary, give saline solution subcutaneously, and resort to such other measures as might be demanded.

Dr. Robert Milne of London, England, said it was very fashionable in the London Hospital to give eserin, but it was only the extreme cases of distention that responded to the use of eserin. They did not give more than one-hundredth of a grain at a dose, and they did not give more than three such doses. He could not say that in any of the cases they had noticed any particular collapse from the use of the drug.

Dr. O. H. Elbrecht of St. Louis related some experiments with eserin on normal individuals. He found that small doses had absolutely no effect in many instances, whereas larger doses gave prompt action of the bowels. He found it was usually twenty minutes to half an hour before it acted.

**Pancreatic Cysts.**—Dr. Lomax Gwathmey of Norfolk, Va., reported a case of cyst of the pancreas, and said the fluid content from the large cyst showed considerable detritus, few degenerated epithelial cells and leucocytes, but no cholesterin crystals. The small cyst showed a few degenerated epithelial cells. Attempts to cultivate the organism from the cyst contents were futile. The cyst presented one or two interesting features. The fluid in the large cyst was entirely different from that in the smaller cysts, the difference being due to a hemorrhage or hemorrhages that took place in the large cyst. The smaller cysts were lined by epithelium, while in the large cysts not a vestige of epithelium could be found. The large cyst was evidently lined by epithelium, but this epithelium must have suffered autodigestion. The cyst was at one time uniformly colloid. A hemorrhage or hemorrhages took place in the large cyst, which caused the difference in the cyst contents, and which produced some trauma to the epithelium of the cyst wall, thereby allowing the ferments in the cyst contents to digest the epithelial lining. So lax was the abdominal wall after the removal of the tumor that the appendix was removed without difficulty through the same incision. It contained an extremely large appendolith in the tip and was actively inflamed. Old and fresh adhesions in the pelvis were broken up, adherent coils of small intestine removed from the cul-de-sac, and sigmoid properly placed in the pelvis. The kidneys, liver, gall-bladder and ducts, the pancreatic head, and other abdominal organs were found normal. The wound was closed without drainage. The convalescence was smooth and uneventful, and the patient left the hospital in nineteen days to go to her home in Chicago. A recent letter, six months since her operation, reported her in excellent health, much better than she had ever before experienced.

Dr. Rufus B. Hall of Cincinnati said that several years ago he reported to the association an operation for pancreatic cyst. In that case the cyst evidently arose from trauma. The man was lifting and injured himself. He came to operation five or six months after injury with an enormous tumor in his abdomen, which held more than 2½ gallons of fluid. He simply drained the cyst and stitched it to the abdominal wall. The man died from inanition the seventeenth day after the operation.

Dr. Joseph Ransohoff of Cincinnati reported five cases of pancreatic cyst on which he had operated.

**Increase of Newer Abdominal Surgery Due to Increase in Toxic Disturbances.**—Dr. Robert T. Morris of New York pointed out that cobweb adhesions in the attic of the abdomen belonged to the toxic group of manifestations, and said we were learning a great deal concerning how these toxic impressions lead to the formation of adhesions in cases without an acute inflammatory onset. In some instances bacteria penetrated the wall of the bowel. The endothelium was shed as a result of their presence and the lymph which exuded became disorganized and formed permanent adhesions that were common in the region of the cecum, largely in the region of the sigmoid, and largely in the region of the pylorus and the bile tract. Why were we having more abdominal surgery relating to Lane's kink, to Jackson's membrane, to cobwebs in the attic of the abdomen, than we ever had before? For the answer we should turn to the statistics which were being collected by the Equitable Assurance Association of New York. This company found a rapid increase in insanity and a rapid increase in the number of cases of arteriosclerosis. They found a rapid increase in the number of cases which belonged to the stage of decadence. When there was arrested development as a result of the decadent change that was now taking place in all the civilized nations in our present cultural period, physical defects or stigmata, as classified by psychiatrists, were increasingly in evidence. What were we going to do about it? Surgery had a place in a number of this group of cases and could afford much help, but the other part of the question related to a better development of individuals in the race. It was a question which was not under the control of the surgeon, but belonged to the physiologist and to the eugenist, and surgery, he believed, was very important in that it would require a higher degree of skill on the part of the surgeon decade after decade, and it would require him to be more alert and better able to analyze cases than he had been able to do before. There would be more Jackson membranes, more Lane's kinks, and more adhesions than before, due to the increasing toxic conditions which belonged to the decadent stage of our cultural period.

**Fractures Into and About Joints.**—Dr. Charles E. Caldwell of Cincinnati said the subject of fractures was too perfunctorily taught. A clearer understanding of their nature and complications would bring about better results and obviate many lawsuits. Fractures into and about joints required more discriminating diagnosis and treatment than the average fracture of the shafts of long bones. Crepitus was valuable, and its absence significant. Perfect apposition of fragments was of more conse-

quence in proximity to joints. The author considered fractures about the shoulder, and said that fractures of the anatomical neck were rare. In fracture dislocations, there was necessity for the removal of the head where reduction could not be accomplished. He pointed out the indications for operation, as well as contraindications, in fractures of the surgical neck. He likewise discussed the indications for operations in fractures about the elbow, mentioned the varieties, the diagnosis, and manner of reduction. He also discussed the treatment of fractures at the hip, and about the knee, as well as fractures about the ankle, their varieties and complications.

Dr. Randolph Winslow of Baltimore said he had had a number of cases of fracture of the surgical neck of the humerus, and he had found it impossible in some cases to effect reduction until the arm was drawn into a position of extension and the bones held together by means of screws, and he had had some good results by that method.

Dr. A. A. Law of Minneapolis stated that in the University of Minnesota they had a different procedure from that mentioned, and their results had been different from those related by Dr. Winslow. They resorted to the treatment suggested by Maxwell and Ruth in old people rather than let them be up and about, with the prospect of a deformed joint and a lack of function of the joint. One woman, 87 years of age, and another 92, had functionating joints and union by following the Maxwell-Ruth method. This method in old people was attended with uniformly good results.

Dr. Robert T. Morris of New York said that in cases in which we did not wish to do an open operation we could often, in selected cases, do a simple operation. First, put the limb behind the fluoroscope. Second, run a narrow-bladed knife down near the fracture. Third, put in a cannula. Fourth, run a drill through the cannula, and transfix both fragments. Fifth, run in a silver pin and leave it there, taking everything else out. One could pin a whole lot of fractures behind the fluoroscope with the patients under the influence of cocaine. This method did away with the disadvantage of keeping these patients in bed. In many cases of fractures in joints one could put in a pin and do a simple operation.

**Experimental Anatomical and Physiological Observations Bearing Upon the Total Extirpation of the Colon.**—Dr. August Schachner of Louisville said that when we considered the arrangement by which 20 or more feet of small intestine were being supported through a peritoneal attachment measuring 5 inches, the weakness of the abdominal wall in the inguinal region and the hernias that resulted from the gravitation of abdominal contents against this lowest and weakest point, if we compared the darkened lungs of the human subject with the clean pink lungs of the quadruped living under the same condition as a proof of how unequal the cilias were in their efforts to lift the dirt and bacteria-laden mucus against gravity, and when we watched the pathetic efforts of the tubercular subject to raise against gravity his expectoration, we got the full swing of the disadvantages of the upright position. Mr. Arbuthnot Lane through his work that extended over more than ten years, and especially his recent writings, together with Elias Metchnikoff, deserved the credit for calling the attention of the world to the injurious effects of intestinal stasis. While the end-to-end anastomosis was functionally the most natural, the end to side had the advantage of more security and practically the same advantages that applied to end-to-end. His experimental work justified him in believing that when an ileorectostomy, or ileosigmoidostomy was made by the lateral method, the intestinal contents did not pass through this opening as a rule, but continued the natural course through the colon provided no obstruction existed. In other words, it was a repetition of what occurred in the stomach after gastroenterostomy with a patulous pylorus. The work of Metchnikoff plainly suggested the chemical side of the question, that is, the chemistry of the large intestine when its functions were for any length of time interfered with. The influence of an abnormally movable kidney as a factor in the development of splanchnoptosis, had not received the attention it deserved. Few of us perhaps realized that the retroperitoneal position of the kidney when making excursions, enabled it to dissect loose through attrition the peritoneal attachment that served to anchor the viscera to the vertical column. He wished to emphasize the point that the problem was comprehensive enough to accept all the assistance it could through gymnastics, bandages, regulation of diet and habits, and still furnish an abundant percentage of human wreckage, as Mr. Lane expressed it, for the surgeon to attempt to reclaim.

**The Value of Complete Physiological Rest of the Large Bowel in the Treatment of Certain Ulcerative and Obstructive Lesions of This Organ.**—Dr. John Young Brown of St. Louis, Mo., pointed out the advantages of complete physiological rest of the entire large bowel in the treatment of certain diseases of this organ which had heretofore been treated by some of the surgical methods and described a technic by which this rest could be accomplished, and when its purpose had been fulfilled the bowel could be put back into commission in a manner both safe and satisfactory. Through a right rectus incision sufficiently long for general exploratory purposes, the abdomen was opened. The cecum was at once sought and the large bowel was carefully examined from cecum to sigmoid. All pericolic adhesions were then severed, the appendix removed and the stump buried. The ileum was next severed between two clamps, close to the ileo-cecal valve. The distal ileum was tied off and buried as was the appendix. At a suitable part of the cecum, a purse-string suture of linen was placed and the cecum was next incised. Through this incision, a large rubber catheter was inserted after which the purse-string was tightly tied. A second purse-string of No. 1 chromic catgut was next placed. Under the loops of this purse-string, three long catgut fixation sutures were placed. A stab-wound was next made at McBurney's point through which a forcep was inserted. The catheter and fixation sutures were grasped in the bite of this forceps and pulled through the stab-wound. The peritoneal surfaces of the cecum surrounding the catheter were next scarified and the catheter was pulled through the stab-wound, carrying with it the three fixation sutures. The catheter was now slipped through the button and the fixation sutures were threaded through the eyes in the button and tightly tied, thus closely approximating the serous surfaces of the cecum to the parietal peritoneum. A stiff rubber drainage tube was next inserted into the proximal ileum and fixed with a double purse-string suture. The ileum was now brought out at the lower angle of the rectus incision. The parietal peritoneum was made to hug it snugly by a few catgut sutures, and the abdominal wound was closed in the usual way. The indications for restoring the continuity of the large bowel were improvement of the patient's general condition and the return to normal of the discharge from the excluded large bowel, as shown after repeated chemical, microscopical, or cultured growth examination of irrigation fluids passed through it. This restoration should not be made too early particularly in the ulcerative lesions of the colon. When the surgeon deemed that the large bowel had sufficiently healed and desired to put this organ back into commission, this restoration was readily done by simply cutting out the anus at the lower angle of the rectus incision, closing its end with a purse-string suture, making a lateral anastomosis of ileum to ascending colon or by switching the ileum into the sigmoid. He had never found any difficulty in restoring intestinal continuity. On the contrary, the operation was simple and easy. This paper was based upon the experience he had gained from ten cases so operated. Two were cases of chronic intestinal stasis, with obstructions due to pericolic bands and flexures. Both had greatly improved and were now comparatively well. Three operations were done for the relief of amebic dysentery. All were cured. One was a case of ulcerative colitis with extensive involvement of the sigmoid and rectum. Patient was now in good health. One was a case of extensive obstructive tuberculous colitis. This patient received great relief from the operation and lived in comfort for two months. Three were for late and inoperable malignancies of the rectum. One lived six months, one five months, and the third patient was still living, nine months after operation, was comfortable and in reasonably good health, so there was no mortality in the series.

Dr. Joseph C. Bloodgood of Baltimore discussed the surgery of the colon, with special relation to the methods of resection and suture.

**Adhesion of the Sigmoid.**—Dr. H. A. Royster of Raleigh, N. C., said that sigmoid adhesion was associated with definite symptoms which he believed could be relieved by simple means. Three years ago he directed attention to sigmoid adhesion as a cause of pain in many cases of salpingitis which were attributed to the ovary and other organs. Further experience and observation had convinced him not only of the importance of this adhesion, but of its more widespread interest, so that the whole question had assumed a broader aspect and was coming into consideration in every case of abdominal diagnosis that we had presented to us. Women commonly complained of left-sided pain, but it was not always properly interpreted. The ovary was too often blamed as the

chief offender when, as a matter of fact, there was very little pain associated with ovarian disease. Most often the tube was the source of the pain and usually preceded any ovarian involvement. In a number of instances neither the tube nor ovary was found involved, yet the woman had pain. The particular thing which was characteristic of sigmoid adhesion, as observed clinically, was, first, pain during defecation, and not afterwards. In addition to this, some of the patients described a stoppage at certain points. Constipation was the rule, but in a few cases the condition was associated with mucous diarrhea or a mucous discharge from the bowel. Usually the pain was low down in the left iliac region, but it might be higher up, near the spleen or midway. Most of it was below the anterior spine of the ilium. A typical example of sigmoid adhesion was that of a married woman who had given birth to two or three children. She complained of incessant pain in the left quadrant of the abdomen, and was sent in as a case of tubal disease. Her greatest suffering was on going to stool. She was obstinately constipated. Pelvic examination was negative. Her abdomen was opened and a classic sigmoid adhesion revealed. This was dealt with and the abdomen closed. She had been free from pain now for more than two years. Other similar cases were cited.

Dr. Guy Leroy Hunner of Baltimore said the first of two or three cases he saw of this condition was operated more than once for pelvic and other conditions in the abdomen which might be imagined to be causing the real trouble, and finally these sigmoid adhesions were found and relieved, with recovery of the patient. As regards the etiology, some of these adhesions did not come from the large bowel, but from without to the sigmoid. He found in some of these cases the adhesions ran from the internal inguinal opening over to the large bowel in the shape of fan-like peritoneal adhesions. In other words, the infection had apparently not come from the large bowel at all, but from the lymphatics running into the peritoneal cavity with the broad ligament. He found in some cases chronic urethritis was associated with this condition of left-sided pain, but not all females with chronic urethritis who had pelvic pain had these adhesions.

Dr. Henry T. Byford of Chicago sated that in those cases in which the adhesions were not connected with the sigmoid he thought the pain was usually low down, extended off towards the false pelvis about the iliac region and made it more or less a backache; whereas in the other class of cases the pain extended up along the colon, was apt to extend into the back and be more to the left side.

Dr. James E. Moore of Minneapolis said sigmoid adhesion was a definite surgical entity, and we could relieve it by surgical measures. In a certain number of cases there was a definite symptom which would enable one to make a positive diagnosis from the ordinary examination, and that was a sausage-shaped tumor extending up the left iliac region toward the splenic flexure.

Dr. Walter B. Dorsett of St. Louis said if sigmoid adhesion was due to the colon bacillus or to some other organism, it occurred to him that it would be just as frequent in the male as it was in the female. In dealing with these cases he made the incision in the median line because of the fact that he had had some unpleasant complications in making the incision to the left of the rectus muscle.

Dr. Gordon K. Dickinson of Jersey City spoke of four types of immobilization of the sigmoid. One was the congenital type, where the attachment of the left adnexa to the sigmoid was rather closer than usual and interfered with its function. The second was the inflammatory type from the left adnexa. The third was one in which there were inflammations around the cecoappendix which drew it over to the right and immobilized it, and, fourth, the type described by Dr. Royster. To him he had given a very perfect description of diverticulitis or multiple diverticula of the sigmoid.

Dr. J. Wesley Bovée of Washington, D. C., said when there was infection of the left appendage it was entirely on the peritoneal surface; it would also spread under the peritoneum, and there was infiltration of tissue in the peritoneum which gave rise to adhesions. The one class of cases that gave rise to adhesions was that class in which upon examination he was not sufficiently expert to differentiate between tubal and ovarian disease and sigmoid adhesion. He was not expert enough in many cases to even find the tube or ovary where it had become diseased, for as the result of old infection it was plastered on the wall of the pelvis. If it contained pus, the pus was absorbed. We had a small tube and ovary buried in adhesions and on the surface one could not find them nearly as easily as he could find the round ligament or ureter by bimanual examination in normal cases.

*(To be continued.)*

## WESTERN SURGICAL ASSOCIATION.

*Twenty-Second Annual Meeting, Held at Cincinnati, Ohio, December 20 and 21, 1912.*

The President, Dr. L. L. McArthur of Chicago, in the Chair.

**Etiology of Ileal Kink, Pericecal Membrane, and Cecum Mobility.**—Dr. F. Gregory Connell of Oshkosh, Wis., drew the following conclusions: (1) "Anomalies of development offer a rational explanation for these conditions. (2) Coincident or resultant inflammation may cause confusion. (3) Describing the embryological changes in the ileocecal region under the single term 'Rotation' likewise causes confusion. (4) Such changes are: migration, rotation and fixation, one or more of which may be imperfect. (5) The Jackson or pericolic membrane may be due to excessive rotation, delayed migration, early or anomalous fixation. (6) The Lane kink may be due to excessive or anomalous fixation. (7) The cecum mobile is due to an absence of fixation."

**The Fetal Peritoneal Folds of Jonnesco, Treves, and Reid, and Their Probable Relationship to Jackson's Membrane and Lane's Kink.**—Dr. Joseph Rilus Eastman of Indianapolis called attention to the striking similarity of the fetal peritoneal fold described by Jonnesco and Juvara, and designated by them "the parietocolic fold," to the adult peritoneal anomaly described by Jackson as membranous pericolitis and generally known as "Jackson's membrane." Further attention was called to the probable causal relationship between the bloodless fold described by Treves and a pocket-like anomalous peritoneal reflection which was not rare in the adult, and which passed from the mural peritoneum upon the right side quite low down, extending upward and inward over the caput coli and vermiform appendix to be attached to the last two or three inches of the ileum, and to the peritoneum of the caput coli. It formed the boundary of a precolic fossa in which the cecal head and appendix might rest as in a pocket. It was likely that the caput coli with the appendix were, in not rare instances during operations for appendicitis, shelled out of this peritoneal pocket, the peritoneal fold, that is, the bloodless fold of Treves which formed the pocket being looked upon by the operator as an affair of adhesion formation. Moreover, although conceptions of Lane's iliopelvic band, the structure to which was ascribed an important part in the causation of Lane's kink, were somewhat varying, it might be well in discussing the nature and origin of this band to recall that Douglas Reid, of the University of Cambridge, had described under the name of "genitomesenteric fold," a rather common fetal fold of peritoneum which passed from the terminal portion of the ileum into the pelvis. Concerning this genitomesenteric fold, which might be found readily in a surprisingly large percentage of fetuses after the seventh month, or even after birth at term, the question might be raised as to whether it was not related to angulations or gravitations or other deformities of the terminal ileum to which it was attached. The parietocolic fold of Jonnesco and Juvara in most cases arose from the peritoneum at the left or inner side of the ascending colon, passing over the anterior aspect of the ascending colon in an upward slanting direction. It was attached to the parietal peritoneum at the right of the ascending colon. It might adhere to the anterior and lateral aspects of the colon. He ascribed to this fetal fold practically the same relations as were presented by the parietocolic fold when found in the adult. The fold which was described by Douglas Reid and called by him the genitomesenteric fold passed from the mesentery of the last part of the ileum down into the pelvis, being attached below to the genital gland. It would be seen that it had a secondary connection with the ileum and through the peritoneum of the mesoappendix with the appendix itself, a connection which was perhaps responsible for the frequent association of appendicitis and oophoritis. The author had seen this fold in the adult. By lifting the last part of the ileum upward, a thin fold of peritoneum which was quite loose could readily be seen passing from the mesentery of the last part of the ileum over the brim of the pelvis to the region of the ovary. There was no sharp border of this fold upon the right

side. It spreads out on the right into a rather narrow fold of Treves. Reid described this genitomesenteric fold as passing under the appendix, whereas the fold of Treves passed over the caput coli and appendix. In the author's cases the inner or left border of the bloodless fold of Treves had ended in each case below in the genital gland in the fetus at the ovary in the female after birth, and at the internal abdominal ring in the male at term. This was not seen as it was observed by Reid. Certainly it was not noticed as a separate distinct fold, but rather the inner prominent edge of the bloodless fold of Treves, passing from the terminal ileum to the genital gland. It was this genitomesenteric fold of Reid, or the prominent inner border of the fold of Treves as the case might be, which corresponded in its position and attachments to the iliopelvic band of Lane. The relationship between the fetal fold and Lane's band was, perhaps, only hypothetical, but it seemed not unlikely that they were identical. Concerning the origin of Jonnesco's fold, it might be said that several succeeding stages of its formation indicated that adhesions formed between the cecum and parietal peritoneum, while the cecum was still subhepatic. The subsequent descent with torsion or rolling inward upon the long axis drew the mural peritoneum over the ascending colon in a slanting direction.

**The Correlation of Appendicitis, Mucous Colitis and Membranous Pericolitis.**—Dr. A. E. Benjamin of Minneapolis read a paper on this subject in which he drew the following conclusions: (1) "The colon bacillus is a most deadly enemy of the human race. (2) Owing to the dietary habits and the upright posture assumed by man the propagation of the bacillus is favored. (3) The congenital body form and the imperfect development of the large intestine, as well as insufficient support and pressure of clothing, favors visceroptosis and visceroptosis favors stasis. Repeated attacks of colitis in children may terminate in a chronic form of the disease manifested in later life. (4) Intestinal stasis causes a multiplication of colon bacilli within the colon. (5) The weakest portion of the colon, namely, the cecum, owing to its anatomical location, is the natural receptacle for retained feces, mucus, bacilli, and other contents of the bowel. (6) The two fixed points, namely, hepatic and splenic flexures, inhibit fecal circulation, and where there are kinks, resulting stasis occurs. (7) The reverse peristaltic waves and the uphill course of the first part of the colon are prime factors in the production of stasis in the cecum. (8) When stasis and intercolonic tension exists, in the presence of retained infectious microorganisms, the law of osmosis is put in operation and a transmigration of these organisms through the walls of a thinned out colon occurs. (9) There is always a reaction on the part of tissue thus invaded and barriers offered to protect surrounding structures. (10) Without the colon these barriers are manifest in the form of a veil-like membrane radiating from the parietal peritoneum to and over the area of the colon most affected. (11) This membrane may not be placed uniformly over the colon or cecum, but often in an imperfect and crippling manner. (12) The pressure of these bands may cause degeneration and scarring of the intestinal wall with contraction, resulting in thick bands or dense adhesions which produce obstruction and secondary stasis. (13) When these fibers hamper the action of the large gut they are a menace to the health of the individual and must be removed. (14) The appendix is often caught in this veil-like membrane or dense bands with resulting constriction and degeneration of its walls. (15) When the freedom of action of the appendix is thus interfered with, bacteria are retained and further degeneration and infection result. Acute attacks of appendicitis may supervene following chronic symptoms of the disease. (16) A chronic colitis sooner or later may result in membranous pericolitis and demand surgical intervention to relieve an imprisoned or restrained portion of the colon or appendix. The results of such an operation depend to a great extent upon the inauguration of consistent dietary and general hygienic measures following the operation. (17) Button-hole incisions for appendicitis should seldom, if ever, be employed. (18) Surgeons must take a more comprehensive view of diseases of the abdomen, and especially of the right side and cease to focus their attention on the appendix alone. (19) A careful observation must be made of all the abdominal organs at the time of the operation, and a general view taken with a clear understanding of the clinical symptoms and careful investigation of the pathology requiring attention, and with an intelligent interpretation of these our results will be quite satisfactory.

Dr. Van Buren Knott of Sioux City, Iowa, said he had thought that the so-called Jackson membrane was more a congenital anomaly than a pathological entity. He had encountered it many times when the abdomen was opened for any pathological condition, when no symptoms existed which could be attributed to the presence of the membrane.

Dr. W. D. Haines of Cincinnati said there was a definite and known cause for colitis. It was an infection of the intestinal wall, and it was the same as other mucous lined surfaces when they became infected, the difference being chiefly in the mechanics of the part, whether it be the gall-bladder, the appendix, or gut itself. If one was not absolutely sure of the diagnosis before operation, the incision should be sufficiently large to permit one to see and act intelligently.

Dr. Jabez N. Jackson of Kansas City, Mo., said the main thing he had endeavored to force upon the profession was the recognition of a pathological or abnormal condition, whether it be congenital, inflammatory, or what not in its origin, a condition which was found about the right side of the colon in a very definite percentage of the cases, and a condition which was clearly definable. It was a clinical entity which presented an absolutely characteristic train of symptoms.

Dr. W. W. Grant of Denver reported to the Society in Denver a most interesting case in which there was a condition of the appendix without local symptoms other than those referable to the stomach. While examination showed hyperacidity of the stomach, an exploratory operation showed absolutely no disease of the stomach or gall-bladder, but the tip of the appendix was covered with the so-called Jackson membrane, looking exactly as it did in the fetus, except that there was a great deal of congestion and redness of the blood vessels covering the cecum. Removal of the appendix cured this patient in two months.

Dr. Daniel N. Eisendrath of Chicago suggested that cases be watched for the next two years, observations at the operating table made, and follow the cases along and see how much benefit they had derived from the various methods of operation, and how much need there was for any operation in a great many of these conditions. He had made notes in a great many cases of so-called movable cecum, of ptosis of the ascending colon and transverse colon, and he had been following them up. A chart showed contradicted what Dr. Jackson had said, namely, that the Jackson membrane did not form in ptotic colon. This picture showed that the cecum lay between the bladder and the right pelvic wall. Dr. Jackson had pointed out that the pericolic membrane covered the ascending colon down to the cecum. In these cases there was absolutely no symptom referable to the ptotic condition of the colon. The entire ascending colon and cecum were in the condition that had been described as cecum mobile or complete ptosis of the cecum.

Dr. Warren A. Dennis of St. Paul, Minn., thought this question could be definitely settled by means of co-operative work and by making definite records of the conditions found in the various cases. If all would record the actual conditions found in children operated upon, we could determine the relative frequency of this membrane in children. A certain number of cases would be operated on later in life, and some of them would develop this membrane, and perhaps some of them would not, but we could only reach a definite conclusion by having a good many men work together.

**Retrocecal Appendicitis.**—Dr. Jabez N. Jackson of Kansas City, Mo., described four separate anatomical subvarieties of the general postcecal type. (1) The appendix, possessing its usual mesentery, was only distinctive in the fact that it ran upward along the outer side of the colon which overhung and confined it in the limited peritoneal space external to the colon. (2) Another type ran upward external to the colon under cover of the peritoneum of the posterior parietes which formed its investment, usually incomplete, on its posterior circumference, and even though complete not furnishing a mesentery proper. (3) Again, he had found the appendix running up along the external wall of the colon itself and invested by its proper tunic and likewise without mesentery. (4) In the fourth type the appendix ran upward directly behind the colon beneath which it was buried in connective tissue entirely, and had no direct peritoneal investment whatsoever. In the retroperitoneal type we might permit embolic infection of the liver with multiple abscesses entirely beyond any hope of relief by surgical means or otherwise. He would, therefore, emphasize the need of early diagnosis and early removal of the appendix as particularly indicated in this anatomical type of appendix.

Dr. W. W. Grant of Denver stated that in a paper on "Retrocecal Appendicitis," read before the Colorado State Medical Society in 1903, he called attention to a symptom not mentioned by the essayist in speaking of the symp-

tomatology, namely, a tender point two inches above on an intersecting line directed upward from McBurney's point and from the umbilicus. In these cases of post-colonic appendicitis, without preliminary symptoms, one would find this to be the most distinctly tender point. A prompt operation in the class of cases described with drainage through the lumbar region would cure a large proportion of them.

Dr. Walter R. Dorsett of St. Louis said he was particularly interested in Dr. Jackson's classic description of this condition, but mostly in regard to the necessity for lumbar drainage even after we had opened anteriorly. Three such cases had come under his observation. In these he was fortunate enough to make a diagnosis of retrocecal appendicitis and opened, first, through the lumbar region, drained, and then went in afterwards in front and removed the appendix, for the reason that the appendix was very hard. He removed it through a lumbar incision. It was worth while to consider drainage before the ablation of the appendix.

**Gunshot Wounds of the Abdomen.**—Dr. Maurice Kahn of Leadville, Col., stated of 41 cases of gunshot wounds seen in civil practice, 13 (31 per cent.) were of the head, 8 (19 per cent.) of the chest, and 13 (31 per cent.) of the abdomen. He cautioned against dogmatism in asserting that portions of the body distant from the wound of entry were not involved, as remote organs were occasionally injured, and cited a rare case of his own: a boy was accidentally shot with a .22 caliber rifle, the bullet entering the external aspect of the right thigh at its middle third, and death from peritonitis resulted on the fourth day. He maintained that the soft tissues of the abdomen were incapable of deflecting a bullet, hence a bullet must traverse that cavity in the straight line of its projection. On account of the danger of hemorrhage, and the rapid absorption in the upper abdomen, he also combated the universal belief that wounds of the lower abdomen were attended with a higher mortality rate than were those of the upper abdomen. Despite the fact that army statistics showed that conservative treatment was the more successful in war, and that it was possible for a bullet to traverse the abdominal cavity without visceral perforation and he cited one case of his own in which this occurred, nevertheless in every case of penetration of the abdomen by a bullet, multiple perforations of the viscera were to be assumed and prompt surgical exploration demanded. The symptoms usually mentioned were not those of perforation, but were signs of hemorrhage or peritonitis. Given a case with indications of probable involvement of the abdomen one should not wait for symptoms, but should proceed at once with the operation. Needlessly long incisions, evisceration, rough handling of the gut and long exposure were to be condemned; however, much time might be wasted by attempting a thorough search through an insufficient opening; therefore, he always made an opening sufficiently large to permit rapid work regardless of its length. Also, in the presence of a belly full of blood, he turned out intestines abundantly to expedite finding the source of the hemorrhage, which, if profuse, arose from the solid viscera, mesentery, omentum or large vessels, as wounds of the hollow viscera bled but slightly. Trimming the bruised edges of intestinal wounds required time, which might be of great import, and was unnecessary, as the edges could be safely infolded. On account of the tonically contracted bowel, care should be exercised that the bite of the suture was no deeper than was intended. Thorough exploration for distant perforations was urged, as many cases had been lost by neglecting to repair all wounds. The general principles governing drainage in abdominal conditions would determine one's procedure in a given case. When in doubt it was safer to drain. Of 13 cases, 7 were operated upon. Excluding one, which involved the thorax and abdomen, and which died of secondary pulmonary hemorrhage, there were six purely abdominal cases with intestinal perforations operated upon within 8 hours of the accident; 5 recovered, and 1 died, a mortality of 17 per cent.

Dr. W. W. Grant of Denver said in reference to the diagnosis, if we knew the point of entrance of the bullet and its exit, we could tell with some degree of accuracy as to the course it had pursued; but often there was no exit; the bullet was lodged in the body, and under these circumstances and conditions he would suggest that the *x*-ray would locate the bullet, and knowing its entrance, even if we did not know its exit, we would know pretty well what course it had pursued, and this could often be done within an hour or two. It was a fact that every hour, after about four hours, increased the mortality from these wounds without operation. Therefore, operation in every case of wound from a bullet should be undertaken. If there had been no wound of the intestine or stomach the patient would not die from an exploratory operation. The first consideration was hemorrhage, and not extravasation, because it was the hemorrhage that produced shock; it was the hemorrhage that produced immediate death, and not peritonitis, so that the first consideration was to stop the hemorrhage.

(*To be continued.*)

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

*Special Meeting Held November 29, 1912.*

Dr. Franklin A. Dorman in the Chair.

**Cyst of the Corpus Luteum Simulating Ectopic Gestation.**—Dr. Franklin A. Dorman reported this case which was of interest because there was with it a story of a mistaken diagnosis. The patient was twenty-four years of age, married, and was first seen on October 25. Her menstruation began at the age of fifteen and occurred every twenty-eight days. Her last menses occurred on August 28. She had one child with instrumental delivery four and a half years ago. Three years ago she had a miscarriage. Nine months ago she was operated upon for chronic appendicitis. At the same time she had a Gillian suspension and a buttonhole suspension for prolapsed ovaries. Six weeks ago she began to have pain in the left lower abdomen, variable but increasing, together with morning vomiting and this had continued during the past four weeks. She was admitted to the hospital on October 25 complaining of severe pain; she then had a temperature of 99.2°, pulse 100, anad respirations 24. The blood count showed leucocytes 18,500 and polymorphonuclears 81 per cent. and lymphocytes 19 per cent. The examination revealed a mass which was very tender in the left fornix with fulness in the cul-de-sac of Douglas. As the uterus was held in place by the suspension operation, it was a difficult matter to determine the degree of enlargement of the uterus. A tentative diagnosis of ectopic gestation was made and operation was done on the following day. There was found a mass on the left side which was presented to the Section. The specimen consisted of a Fallopian tube of rather small caliber and tortuous in outline and it was intimately attached to a ruptured cystic structure about the size of a walnut. This was apparently an ovary, as it could be identified by the presence of a large corpus luteum. The microscopical diagnosis made was chronic salpingitis with a corpus luteum cyst of the ovary. The patient miscarried October 31. The cyst was thin walled and yellow in color. The point of special interest was the severe pain in a cyst of the corpus luteum of pregnancy.

**Large Intraligamentous Hyaline and Cystic Fibroid with Cystic Ovaries.**—Dr. Dorman exhibited this specimen which presented quite a surgical problem because of the position in the broad ligament. The surgical difficulty, however, was less than might have been because the tumor was shelled out beautifully. The patient made an uneventful recovery. The specimen was taken from a patient forty-one years of age.

**The Infant Pulmotor, an Apparatus for Artificial Respiration on Asphyxiated Newly Born Infants.**—Dr. J. Clifton Edgar presented this apparatus which was an adaptation of the Draegen adult pulmotor to cases of asphyxia neonatorum. The pulmotor was designed primarily to induce respiration in persons who had been overcome by noxious gases, the apparently drowned, those overcome by electric shock, or in any case where the respiration had stopped entirely, but where there was still slight heart action. In the case of the infant pulmotor by the aid of a certain mechanism controlled by hand the respirations could be so timed that a given number per minute might be obtained or so that inspiration and expiration of the machine might be timed so as to coincide with the abortive attempt on the part of the newly born infant. The complete apparatus was enclosed in a convenient wooden box, and consisted of a small high pressure cylinder of one liter capacity, which contained oxygen or varying proportions of oxygen and nitrogen, under 150 atmospheric pressures. By a reducing pressure the high pressure was reduced to a constant pressure of about five atmospheres. Attached to this reducing valve was a gauge which indicated the contents of the cylinder. By means of the reduced oxygen pressure two nozzles were put in action, one for suction and one for presssure. The first action was to force oxygen into the lungs at any given pressure, and the second was to empty the lungs of bad air, which latter was not sucked into the machine but was expelled outside. The alternate filling and emptying of the lungs was under the control of the operator. This control was brought about by simply moving a lever on

a dial. It was claimed for the machine that a mixing of the pure and impure air was impossible. In the limited clinical use to which the apparatus had been put it was pointed out by Roth of Lubeck that in the newly born inspiration as a rule was most successfully carried on with a water pressure of from 10 to 15 centimeters and expiration or suction of from 15 to 20. Two important details had to do with holding the tongue forward to prevent occlusion of the glottis and the closing of the esophagus to prevent forcing air into the stomach. The first was provided for by an attachment to the mask holding the tongue forward and the second was prevented by backward pressure on the larynx. A small rubber bag accompanied the machine for demonstration and testing purposes and a set of instructions for operating.

Dr. Franklin A. Dorman said that usually they could get the lungs expanded in these cases of asphyxia neonatorum by manipulation, but only by continued physical exertion and with bad reaction on the vitality of the child. What was presented was a very scientific way of approaching the matter of resuscitation. Every large maternal service should have the apparatus.

**Tuberculosis in Its Relation to Pregnancy, Labor, and the Puerperium.**—Dr. Ralph Waldo Lobenstine presented this communication. He said that he would endeavor to convince his audience that the strain of childbearing exhausted the vitality of the tuberculous subject and in a high percentage of cases brought about an untimely end. He considered the effect upon the pregnant woman of an active tuberculous lesion, the tuberculin reaction during pregnancy, the effect of an active tuberculosis in the parent upon the offspring, and the proper attitude toward lactation. From the figures presented and the opinion of those who might be considered authorities on these subjects, he concluded as follows: (1) Cases with a healed tuberculous focus might proceed through pregnancy, labor, and the puerperium with little or no disturbance. Rapidly repeated pregnancies had a tendency to cause a renewed outbreak. (2) Latent tuberculosis not infrequently became an active tuberculosis under the damaging effects of parturition. (3) Mild cases with slight fever and moderate cough might stand the strain of pregnancy with apparently little damage; on the other hand, many even of these mild cases were aggravated thereby (35 to 60 per cent.). (4) The deleterious effect was seen, without question, in the majority of the more severe cases. In all advanced stages of the disease, the danger was very great, terminating in practically all cases in an early death. (5) The two periods of great danger were (*a*) during labor and (*b*) in the early puerperium. The prolonged muscular exertion of labor, the loss of blood with its attendant exhaustion, the use of anesthesia, and the possibility of renewed toxins being thrown into the system from the placental site were all serious and far-reaching in their results. At this time the tuberculosis might assume a fulminating character and cause death in a surprisingly short period of time. The effect of tuberculosis in the parent on the offspring was shown in the greater tendency to abortion and to miscarriage among tuberculous women. This was particularly noticeable in tuberculosis of the larynx. While it was possible when the disease was stationary for a tuberculous woman to bring forth an apparently healthy child, the majority of these children kept under observation beyond the obstetrical period would show a tendency to develop malnutrition or tuberculosis itself. In the severer grades of tuberculosis the children were usually poorly nourished and underdeveloped at the time of birth. Congenital tuberculosis did occur but only in exceptional instances; however, the best of foreign observers were of the opinion that a good many so-called post-natal infections were in reality cases of intrauterine infection. In the light of recent work on tuberculosis of the placenta this possibility should be carefully weighed. According to Weinberg, 67.9 per cent. of the infants of tuberculous parents, whose mothers died within one year after labor, died, likewise in the first year of life. Of 50 infants born alive, whose mothers died within four weeks of labor, 78.8 died within the first year. If to these early deaths were added the vast army of children who later developed the disease from contact with tuberculous parents, the great toll on health and life due to faulty inheritance and faulty surroundings could be appreciated. Nursing of an infant by a tuberculous woman was a double menace and should never be allowed. Even though the mother seem to be in fairly satisfactory condition, her ultimate recovery was more likely to be retarded if nursing was indulged in. The majority of such children would thrive better on the milk of a wet nurse or on cow's milk properly prepared. In all truly active cases the ideal method was the isolation of the child. The general treatment of these cases resolved itself into practically the same general methods that were employed in non-pregnant women. The difficulties, however, were far greater as these cases were in more need of judicious care and advice. It was difficult to get them to go away from home and difficult to get them admitted to a sanatarium on account of their pregnancy. The obstetrical management of these cases divided itself into four operative procedures: (1) Simple artificial abortion. (2) Artificial abortion followed either immediately or at later date by resection of the Fallopian tubes. (3) Abdominal or vaginal hysterectomy after the removal of the fetus. (4) Artificial abortion followed by excision of the placental area *per vaginam*. During the first three or four months of pregnancy an abortion should be performed, if possible, in all active cases, and the less delay there was the better. In cases with a tuberculous tendency, but with no active lesion, this operation was not justifiable. It was not indicated in cases with healed lesions, providing the patients were in good health. The operation should be performed under strict aseptic precautions and preferably after a preliminary tamponage with 5 per cent. iodoform gauze. All operations performed under these circumstances demanded light and scientifically administered anesthesia. While the therapeutic abortion was so often indicated, the induction of premature labor was not. A consultation was essential before undertaking any one of the operations under consideration. The operation of salpingectomy was now widely urged in all active early mild cases in which the uterus was emptied. By emptying the uterus in these early mild cases the patient's health might be restored and life prolonged many years. If salpingectomy were performed the patient's health would have a better chance of remaining good and the danger of bringing poorly nourished offspring into the world would be removed. Radical interference was the only way of offering these women a fair chance of improvement. Veit from a study of 347 active cases in which abortion alone was performed, had shown that 43.3 per cent. were not helped by it; while Bardleben claimed that 50 per cent. of his active progressing cases died after artificial abortion. In those cases found to be progressing rapidly in the middle trimester or late in pregnancy, no operation would prove of much value. Dr. Lobenstine explained the unsatisfactory results in the severe cases as due to tuberculosis of the decidua or placenta which in the light of recent investigations had been shown to be of more frequent occurrence than was previously believed. Schmorl, Geipel, and Wertheim now asserted that tuberculosis of the placenta occurred in 45 per cent. of tuberculous pregnant women. The vaginal excision of the placental site was a new procedure which, despite the excellent results of its originator, v. Bardeleben, did not appeal to most of them. Abdominal hysterectomy seemed to him the operation of choice; it enabled one to make a more thorough inspection of the appendages, in case these were likewise the seat of disease. Dr. Lobenstine made an urgent plea for more stringent legislation in order to restrict the marriage of the tuberculous and, in the meantime, where the tuberculous married in spite of remonstrance, it was their duty to urge upon them the necessity for the prevention of conception. Knopf believed in vasectomy for all tuberculous male patients and salpingectomy for all tuberculous female patients, whether married or single, who would submit to the operation. He would make this obligatory for all acutely active cases. This attitude was shared by many clinicians who had studied the problem thoroughly and had broken away from the narrow-minded ways of the past. If this applied to tuberculosis, it applied with even greater force in the presence of mixed tuberculosis and syphilis or tuberculosis and alcoholism.

Dr. J. Clifton Edgar said that since Dr. Charles C. Tremley of Saranac Lake had read a paper on this subpect before the Section on Obstetrics and Gynecology three years ago it had been the consensus of opinion that the therapeutic operation would be the issue of the future, not only in the frank cases of tuberculosis but in the latent and so-called cured forms of the disease. Few could understand the attitude of Pinard of Paris, who claimed that certain cases of tuberculosis were improved by pregnancy. During the first few months of pregnancy these women seemed to be improved, but after the fifth or sixth month they seemed to fade away. The best attitude to assume was that of the alarmist from the very beginning. He could not see how pregnancy could better in any way any type of tuberculosis, whether it was latent, cured, or moderately active. The question before them was a difficult one when they considered the people in moderate circumstances and without proper surroundings. Many of

the children of tuberculous mothers appeared to be healthy but did not have the resistance to disease that other children had. In cases of incipient or so-called cured turberculosis, with no tubercle bacilli in the sputum and with no physical signs of the disease, or those even with a small spot, the consideration of the case came down to a question of environment and circumstances. In patients with a tendency to the disease, he believed that it was a dangerous procedure to empty the uterus in every case. If these patients had been allowed to go nearly to delivery, labor should be made as easy as possible. They should be let alone during the first stage of labor, but the second stage should be made as easy as possible; anesthesia should be used and instruments applied. With regard to the care of patients during the puerperium and nursing period, he agreed with what had been said. It should be borne in mind that in many of these cases it was better to cut off pregnancy by two weeks; this gave an easier labor and produced less shock and strain on the woman.

Dr. Herman J. Boldt said that the induction of an abortion on the indication "a tendency to tuberculosis" could not, in his opinion, be considered other than malpractice if he understood correctly the definition of "tendency to." One might say of any person who looked thin and was of slender physique, in whose family there was someone afflicted with tuberculosis, who might appear somewhat below par, that a tendency to tuberculosis existed. If such a person was a woman who was pregnant and whose desire was not to have her child this might be assumed as a reason for the induction of abortion. The induction of abortion was indicated only when the woman had incipient phthisis or phthisis not far advanced, in an active state, and if it was shown that under the influence of pregnancy the pulmonary condition was aggravated. For one's own sake as well as for that of the patient, it was advisable to have this certified to, not only by the family physician but by someone who had made a special study of tuberculosis and who was fitted to give an opinion based on experience from the observation of such patients. Sterilization was justifiable in all such cases. If done the technique should be such as would really assure prevention of conception. The tying of the Fallopian tubes was inadequate; but if the interstitial parts of the tubes were exsected and the uterine wound closed with a continuous suture, the patient retained menstrual function and was absolutely sterilized. Moreover, the operation was readily done by the vaginal route. Hysterectomy was not, in his opinion, indicated. The induction of abortion or of premature labor was contraindicated in all cases where the pregnancy had advanced further than the first half of the period of gestation, when the pulmonary lesion was so far advanced that a marked improvement of the patient, a quiescence of the disease, could not be hoped for. All patients who had had or who might have active pulmonary tuberculosis, accompanied by pregnancy, should be kept under most careful observation and at the first sign of renewed activity of the disease the patient should be advised to have the uterus emptied at the earliest possible moment. Questions of religion should not enter into consideration where human life was involved. To his personal knowledge in one strictly sectarian hospital in Germany, only the medical side was considered.

Dr. S. A. Knopf said that hitherto he had assumed the attitude of non-interference in early and moderately advanced cases of tuberculosis complicated by pregnancy, but he was willing to confess that he was more and more inclined to advocate the emptying of the uterus in all cases where a positive unhealed tuberculous condition existed. In addition to the authorities quoted by the reader of the paper, there were Schottelius and Schaute who stated in a recent article that they had come to the conclusion that, in view of the uncertainty of the prognosis in a tuberculous pregnancy the emptying of the uterus was indicated in every case. Carefully gathered statistics showed that in 75 per cent. of positive cases of tuberculosis the pathological process increased rapidly during pregnancy, and particularly after delivery, to a fatal termination. If after careful counsel with a competent, or, better, two competent consultants for internal diseases and an experienced obstetrician, the diagnosis of pregnancy was certain in a tuberculous woman, the careful and aseptic emptying of the uterus was indicated and was connected virtually with no danger. It went without saying that the ligation of the Fallopian tubes at the same time or soon after was indicated. The reader of the paper stated that 200,000 persons died annually in the United States from tuberculosis, but he did not give any adequate idea of the severity of the problem because he did not include the morbidity of the disease. It has been proven that there were eight times as many tuberculous individuals as were represented by the death rate. If one considered that the majority of this vast number were poor and might become a burden to the community, it certainly seemed timely to stop tuberculous procreation. Prevention was vastly better than interference, and Dr. Knopf said he was willing to take the responsibility before the law and his God for every time he had advised tuberculous individuals not to procreate. The uterus in these cases should never be emptied without the written and sworn consent of the husband and no subsequent sterilization should be resorted to unless the operation had been agreed upon by two competent internists and an obstetrician or gynecologist. The problem presented was an important one and it was regrettable that it was not presented to an audience as large as possible of general practitioners.

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Stated Meeting, Held December 23, 1912.*

The President, Dr. Charles Gilmore Kerley, in the Chair.

**Moving Picture Illustrations of Nervous and Mental Diseases.**—Dr. T. H. Weisenburg presented only 5,000 of the 20,000 films originally taken because of the time requirement. He had very little to say because the pictures spoke for themselves. He conceived the idea some five years ago of taking moving pictures for class room work. They enabled him to explain symptoms more easily. He expected to extend the picture taking to the operating room. The pictures illustrated every known form of nervous disease and their clinical symptoms. They also illustrated the methods of making examinations, including the taking of reflexes, the different types of gaits, stature, etc. Among the nervous diseases shown were hemiplegia, diplegia, paralysis agitans, locomotor ataxia, disseminated sclerosis, poliomyelitis, muscular dystrophy, syringomyelia, ataxic paraplegia, cerebellar and other tumors, Jacksonian and general epilepsy, spasms and tics in various parts of the body, Huntington's and Sydenham's chorea, astasia abasia, and hysterical states. Among the insanities shown were dementia præcox, which was illustrated by twenty-six cases, manic depressive insanity, chronic mania, paranoid states, paresis, melancholia, etc. Dr. Weisenburg believed that the work of the moving picture in medicine was limitless. It was an expensive method, but the expense was more than compensated for in the results obtained.

## Books Received.

*The* Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Physiothérapie Du Lupus. By Dr. L. Dekeyser. 121 pages; illustrated; paper. A. Maloine, Publisher, Paris.

Taschenbuch der Therapie. By Dr. M. T. Schnirer. 476 pages; cloth; price 2 M. Curt Kabitzsch, Publisher, Wurzburg.

Surgery of the Brain and Spinal Cord. By Prof. Fedor Krause, M.D. English Adaptation by Dr. Max Thorek. Vol. III. 1201 pages; illustrated; price $7.00. Rebman Company, Publishers, New York.

Diseases of the Mouth. By Prof. Dr. F. Zinsser. Translated and edited by John Bethune Stein, M.D. 269 pages; with 52 colored and 21 black and white illustrations; cloth; price $7.00. Rebman Company, Publishers, New York.

Aufgaben der Glaukombehandlung unter der Kontrolle des Schiotzschen Tonometers. By Prof. V. Hippel. 46 pages; paper; price, 1.20 M. Carl Marhold, Publisher, Halle.

Beiträge zur Beurteilung und Behandlung des Konkomitirenden Schielens. By Gustav Caesar. 41 pages; paper; price, 1.50 M. Carl Marhold, Publisher, Halle.

Hundert Totalexstirpationen bei Myoma Uteri Ohne Todesfald. By Dr. S. Flatau. 92 pages; paper; price, 2.40 M. S. Karger, Publisher, Berlin.

Beiträge zur klinik und Histopathologie der Gutartigen Hautepitheliome. By Priv. Doz. Dr. Walter Freiboes. 95 pages; illustrated; paper; price, 8 M. S. Karger, Publisher, Berlin.

## Therapeutic Hints.

**Antipyrine by Rectal Injection.**—A. Guérin notes that Montenius has recommended the use of antipyrine administered in the form of a small rectal injection in the treatment of infantile convulsions and vomiting. In these cases the dose is 25 to 50 centigrams dissolved in 15 grams of water. Guyon and Guiard state that when administered in this manner, with the addition of a small dose of opium, antipyrine acts as a marked sedative to the bladder, especially in prostatics. Mastboom employs antipyrine in the treatment of pelvic neuralgias, dysmenorrhea, and coccygodynia, according to the following formula:

℞ Cocaine hydrochloride, 0.10 gram.
Antipyrine, 10 grams.
Distilled water, 30 grams.

Of this solution one teaspoonful is to be administered in the form of an enema.—*Journal de Médecine de Bordeaux.*

**The Palliative Treatment of Cancer of the Esophagus.**—P. Sée details the following treatment as recommended in a recent volume by J. Thomas. The dysphagia is to be combated by the use of the following pastils:

℞ Cocaine hydrochloride, 0.0025 gram.
Morphine hydrochloride, 0.005 gram.
Antipyrine, 0.10 gram.
Sugar, 0.30 gram.

One or two of these pastils should be taken before each meal.

As an alternative prescription the following is recommended:

℞ Dionine hydrochloride,
Codeine hydrochloride, of each, 0.10 gram.
Cocaine hydrochloride, 0.25 gram.
Ammonium valerianate,
Bitter almond water, of each, 7.50 grams.

Of this solution, 15 drops should be taken three or four times a day.

Certain authors, as Liebermeister, advise the use of peroxide of hydrogen, in a one per cent. solution, of which the patient should take a mouthful every hour. The object is to cleanse the surface of the cancerous lesion and to increase the permeability of the stricture. The dyspnea which is symptomatic of pressure upon the trachea may be relieved by the use of ether, which may be administered by inhalation or by ingestion in the form of a syrup or in pearls; by the use of oxycamphor, in doses of 20 drops of a 50 per cent. solution in alcohol five times a day, or by the use of inhalations of oxygen.—*Revue de Thérapeutique.*

**The Prescribing of Creosote Carbonate.**—C. A. Ewald and A. Heffter recommend the following modes of prescribing creosote carbonate:

℞ Creosoti carbonat., 20 grams.
Vini tokayensis, ad 200 grams.
M. et Sig. One tablespoonful t.i.d.

℞ Creosoti carbonat., 15 grams.
Olei jecoris aselli, ad 150 grams.
M. et Sig. One tablespoonful t.i.d.

℞ Creosoti carbonat., 30 grams.
Syr. altheæ,
Cognac, āā, 15 grams.
M. et Sig. To be well shaken; 10 drops, t.i.d.; dose to be gradually increased.

This drug may also be taken pure, followed by milk, or mixed with fruit jam.

"Handbuch der allgemeinen und speziellen Arzneiverordnungslehre," 1911.

## Miscellany.

**Insanity and Epilepsy in Ancient Times.**—R. Jones notes that insanity was familiar to the Egyptians, whose mentally afflicted were taken to the Egyptian temples, where they were treated by the priests with incantations and sacrifices. Traditional medical knowledge in regard to the insane is said to have been carefully preserved in India. Among the Greeks, Æsclepiades constituted an hereditary order of priesthood, who were supposed to exercise curative powers over insanity; and there were Greek laws made 500 B.C. defining those lunatics who had to be confined. The Romans in their laws guarded the insane as well as their estates. Some of the earliest authentic cases of insanity, as well as of epilepsy, are related at considerable length in Holy Writ; for instance, the insanity of King Nebuchadnezzar, and also his recovery, after which it is recorded he was replaced as King upon the throne of Babylon. The history of King Saul, 1000 B.C., also relates his insanity, and there are several descriptions of epilepsy, the most typical being the only child, who was also a lunatic, for he "suddenly crieth out and foameth at the mouth and gnasheth his teeth," and "oftentimes he falleth into the fire and oft into the water." The ancients not infrequently ascribed epilepsy to the malice of demons, or to the anger of offended deities. If a person was seized with epilepsy in the forum, the Romans considered it an ill omen, the meeting was dissolved, and all public business was suspended for that day. Hence the disease was called *morbus comitialis. Morbus qui sputatur* was another of its names, because those present were accustomed to spit upon the epileptic, or into their bosoms, either to express their abomination and loathing, or to avert the evil omen.—*The Practitioner*, December, 1912.

**The Madness of Kings.**—The recent death of the aged Regent of Bavaria, and with it the reopening of the whole painful story of this ill-fated house, raises questions of peculiar interest in connection with the psychiatry of royal personages. It would appear at first sight that, if the moral and intellectual qualities of a sovereign can add to the enrichment and glory of a nation, the contrary should also hold good. It is remarkable to note, however, how little dependent the evolution of a nation really is upon the mental or physical health of its monarch. Moreover, the history of the House of Bavaria shows that a madman clothed in purple can on occasion be an excellent head of the State. The outstanding cases of insanity in reigning monarchs are not numerous. Perhaps one of the earliest to which historical reference is made, is that of Nebuchadnezzar, King of Babylon, who suffered from lycanthropy, a form of insanity of comparative frequency in antiquity as well as in the Middle Ages. Beyond being afflicted with jealousy amounting almost to monomania, there is no indication that Saul, King of Israel, was insane. More recently Peter III of Russia, grandson of two great kings—Peter I on the maternal side, and Charles XII of Sweden—was a degenerate in the full meaning of the term. Paul I of Russia, his son, was sickly, weak, and epileptic from birth. He it was who proposed that the sovereigns of Europe should settle their differences by mortal combat. Although he imperiled the country by his extravagance and eccentric habits, the pathological history of Paul is interesting in that he was the superior of his father. —*British Medical Journal*, January 4, 1913.

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## Original Articles.

### SOME NEWER PROBLEMS AND SOME NEWER PHASES OF THE ANTI-TUBERCULOSIS WARFARE IN THE UNITED STATES.*

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ABOUT two decades ago, when the sanatorium movement in Germany and in the United States received its greatest impetus from the results obtained by Dettweiler, a pupil of Brehmer, and by Trudeau, many believed that the problem would be solved if we could get enough sanatoria to treat the early cases, retain them there six months or a year, then send them out again to the ordinary walks of life, making room for new ones.

Future cases of tuberculosis we thought we could prevent from developing, or at least diminish in number, by our knowledge of the behavior of the tubercle bacillus as the direct agent of infection and propagation. Effective sanitary measures to prohibit the spread of tuberculosis by indiscriminate expectoration we thought the most essential measure. For a number of years after Koch's declaration at the London Congress in 1901, the transmission of tuberculosis by the bovine type of the bacillus was considered improbable, or at least of minor importance, until new evidence, brought forward by various investigators, particularly English and American[1], proved beyond a shadow of doubt that tuberculosis is caused in childhood in from 5 to 10 per cent. of cases by the ingestion of milk from tuberculous cows. New bovine laws were created or the older ones more rigorously enforced, yet as far as the United States is concerned the peculiar situation arising from the absence of a federal department of health and the lack of uniformity or total absence of bovine laws in some of the States of the Union, must be held responsible for the great prevalence of tuberculosis in childhood due to the bovine type of the bacillus. Thus, one of the first newer problems, or let me rather say, most important problems, is to do away with this source of tuberculosis in childhood. How bovine tuberculosis can be successfully combated among our milch cows is a topic with which you expert sanitarians are familiar and your experience in this work exceeds mine many times, but I know you will agree with me that without a federal department of health, without uniform bovine laws and federal authority to enforce them we are powerless.

*Read before the American Public Health Association at its annual meeting in Washington, September 19, 1912.

Milk inspection, pasteurization, the grading of milk, and milk standards, are subjects likewise so often and well discussed in this society that I do not feel I can add anything new, except to express my belief that with our present knowledge pasteurization is a necessity for protecting the general milk supply, particularly of a large city, from the germs of tuberculosis and other infectious diseases.

There is, however, one feature which seems to me deserves mentioning under new problems. I refer to the likelihood of infection from tubercle bacilli of the bovine type in butter. Investigations in this[2] and foreign countries by competent men have shown a rather frequent occurrence of tubercle bacilli in butter, and while it may be difficult to trace infections arising from this source, the presence of the tubercle bacilli in any article of food substance demands serious attention. The relatively small number of bacilli ingested with butter may not be injurious when not repeated, but Hess has shown that partaking daily of milk containing small numbers of tubercle bacilli may cause infection when the same quantity taken in one dose failed to produce tuberculosis.[3]

Because it is exceedingly difficult to examine all the specimens of butter coming to the market from sources where milk inspection is lax, obligatory sterilization of all cream destined for butter production, as is the law in Denmark, would seem the only method to do away with this source of infection from bovine tuberculosis. Here again we see the great and urgent need of a Federal Department of Health to protect the public.

The marriage of consumptives and whether they shall be allowed to procreate, is a problem which has received some serious attention of late. It is a subject large and important enough to be treated by itself, so I will now merely express my personal opinion on the subject as I did in a recent communication, entitled, "Primary Sources of Tuberculous Infection and Their Relation to Eugenics."[4]

Our social reformers tell us: The first thing you physicians must do is to prevent the tuberculous from marrying. This is more easily said than done. Certainly we know there are a number of States in which a certificate of health is demanded before a license is issued, and recently some brave clergymen, foremost among them the Very Rev. Walter Taylor Summer, of the Protestant Episcopal Cathedral of St. Peter and Paul of Chicago, have declared that they would bar all marriages unless the couples were armed with a physician's certificate saying that they have no trace of insanity, tuberculosis, or other communicable disease. If I have the quotation correct, I would object to the wording of this declaration, for, if the reverend gentleman really means that he will not marry anyone who has even a trace of tuberculosis, he will have a chance of perform-

ing the ceremony relatively rarely. What the old German Geheimrath said many years ago still holds good. I refer to the often quoted words, "Am Ende haben wir alle ein bischen Tuberkulose," which might be freely translated: taking all things in consideration, perhaps every one of us has or has had at some time or other a little tuberculosis.

A mere trace of tuberculosis should not bar any one from marrying and propagating, but with a distinctive lesion, likely to become acute at any moment, or with a very strong predisposition, marriage and procreation should be deferred until the prospective husband or wife is cured. I cannot speak for the experience of others, but as for myself in years of consultation practice, I have had occasion to prohibit marriage a good many times. Sometimes, those who had sought my advice obeyed it, more frequently they did not, and I have come now to the firm conviction that neither State law, clergymen's protest, nor physisian's advice will prevent people from coming together as husband and wife if they want to. I grant that there are exceptions but these exceptions are few.

A somewhat easier task is it when we are confronted with a tuberculous married man or woman whom we desire to convince that as long as he or she is acutely ill with the affliction there must be no children. Such advice the average tuberculous patient is willing to take, but obviously failures are frequent.

It would seem that the time had come for dealing more radically and energetically with this phase of the tuberculosis problem. I plead for vasectomy for all tuberculous male patients who are willing to submit to this operation. I should make this operation obligatory for any one who is acutely tuberculous and insists upon marrying. I would insist upon the ligation of the Fallopian tubes for all female patients in the same situation. I would teach even slightly affected tuberculous parents or married people, not only all the details of prophylaxis so that they may not infect each other, their children, or others, but should make it also a sacred duty to teach them how not to procreate while either one of them is acutely afflicted with the disease. To this end I should go so far as to urge that parents, even when they feel themselves apparently well and strong and recovered from a tuberculous lesion, not to decide on having a child without both submitting themselves to a careful physical examination. Only when found in really good health, as a result of a careful examination by a competent practitioner, should they feel that they have a right to procreate.

My studies in tuberculosis have also taught me another interesting fact which will justify the legitimate prevention of conception in tuberculous parents and the too numerous children to parents inclined to tuberculosis. In taking the history of tuberculous patients I have made it a practice for years always to ascertain the size of the family from which the individual comes and whether he was the first, second, third, fourth, fifth, etc., born of the family. This careful history taking has revealed the fact that the great majority of tuberculous individuals coming from large families were the younger ones. It is nearly always the later born who contract tuberculosis.

There is no doubt in my mind that perhaps the age of the father, but most frequently the system of the mother worn out by repeated pregnancies, has contributed to the physiological poverty of that later born child. The child comes to the world handicapped physiologically. In many instances when the family, because of the number of children, has been reduced to a state of relative poverty, the later born children cannot receive, or have not received either the good care or the good food which was given to the first born at a time when there were not so many mouths to feed. This condition might be considered the sociological reason of the child's predisposition to tuberculosis, added to the physiological causes above described. I have in my records a number of such later born individuals who had become tuberculous in adult life when there was no tuberculosis in their family, but the personal history revealed nearly always a state of health below par from early childhood, and the sociological study of the family a relative poverty.

It would not do, before an audience of this kind, to deny the possibility of direct bacillary transmission through the placenta. These cases are rare, it is true, but they occur, and they occur perhaps more frequently than our statistics seem to indicate.

Recognizing the physiological poverty which a tuberculous parent transmits to the offspring, the economical disadvantage of large families of the poor, the possibility of direct bacillary transmission and the almost certain post-natal infection of tuberculosis from close contact of the child with its tuberculous parent during the early years of life, who is there who would venture to say that the prevention of conception under such circumstances is not a sacred duty?

Concerning another phase of the problem under discussion, that is to say the advisability of emptying the pregnant uterus of a tuberculous woman, each case must be judged according to its own merits. Heretofore I have assumed the attitude of non-interference in early or very moderately advanced tuberculous cases of pregnancy; but I am willing to confess that I am more and more inclined to the emptying of the uterus in all cases where a positive unhealed tuberculous condition exists. I do not stand alone in this seemingly radical attitude. Schottelius and Schaute, in a recent very instructive article on "Abortus artificialis und Tubensterilisation wegen Lungentuberkulose" (Beiträge z. Klinik d. Tub., Band 20, Heft 2), have come to the conclusion that in view of the uncertainty of the prognosis in a tuberculous pregnancy the emptying of the uterus is indicated in every case. Carefully gathered statistics show that in 75 per cent. of positive cases of tuberculosis the pathological process increases rapidly during pregnancy, and particularly after delivery, toward a fatal termination. When, after careful counsel with a competent consultant for internal diseases and an experienced obstetrician or gynecologist, the diagnosis of tuberculosis and pregnancy is certain, the careful and aseptic emptying of the uterus by an expert is virtually connected with no danger. The non-interference means a mortality of 75 per cent. of the mothers and the birth of a tuberculous or predisposed child. It goes without saying that in the majority of these cases the ligation of the Fallopian tubes at the same time or soon thereafter to avoid further pregnancies is indicated.

Prevention of a tuberculous conception, the limitation of children in a tuberculous family, the emptying of the uterus of a tuberculous mother, otherwise doomed if not to an early death to prolonged invalidism, the prevention of tuberculous or predisposed children coming to the world not only handicapped by disease but also by poverty and want

and sure to become a burden to the community, is not race suicide but race preservation.

Until such a time as the radical procedures which I have just outlined will become universal we must have maternity sanatoria where we must isolate and treat hygienically and dietetically all such cases in which prevention and the emptying of the uterus has been neglected. In such maternity sanatoria the mother and her offspring should be treated at least six months before and six months after childbirth.

All children under five years of age who react to the von Pirquet test have, as a rule, a more or less active tuberculous process. In these little ones there has not yet been time to produce an absolute latency of the contracted infection. The von Pirquet test is absolutely inoffensive and I suggest to sanitarians and particularly to lawmakers who have the condition of the nation's health at heart, to make this test obligatory for every child at the ages of two, three, and four. I predict that this measure, which reveals a diagnosis of tuberculosis often difficult to make in children by mere physical means, if followed up by immediate and effective treatment, will prove one of the most successful features in our endeavors to combat tuberculosis.

For the benefit of those who may possibly object to this seemingly radical procedure, I will merely state that the von Pirquet test for tuberculosis rivals, if it does not surpass, the vaccination for smallpox in simplicity and inoffensiveness, and surely the parent who consents to have his child vaccinated for smallpox will not object to an equally simple procedure as a means of saving his child from becoming a victim to tuberculosis.

Open-air schools for tuberculous and predisposed children cannot really be considered a new phase of the antituberculosis warfare. On the other hand, those of us who know the relative scarcity of such open-air schools and who know the invaluable benefits which can be derived therefrom, must wonder why open-air instruction is limited to the few classes in primary schools. I feel so keenly on this one phase of the tuberculosis problem that I have made it the subject of an entire paper which I intend to read before the Congress on Hygiene and Demography which will convene next week in this city.

The equipment of these open-air schools, the cost of feeding, medical supervision, etc., have been so often described that I will not enter into consideration of these subjects; suffice it to say that it pays in the end in health, happiness, and economic gain to take care of these children at the right time and in the right place.

Besides the two types of outdoor instruction (outdoor classes in regular school buildings for the predisposed and outdoor schools for those afflicted with open tuberculosis), there should be that type of schools which are known in Germany as "Waldschulen" (schools in the forest or woods). They are, of course, mainly feasible in summer, but will be of inestimable benefit to the nervous, anemic, scrofulous, or poorly nourished children, all of them strongly predisposed to tuberculosis. To possess a system of such Waldschulen or vacation schools should be the ambition of every city. All these types of schools should be multiplied manifold. I go so far as to say if we really mean to wipe out tuberculosis among the coming generation, open-air schools and open-air instructions should be the rule, indoor schools and indoor instructions the exception. If, as has been proven, when the child handicapped by so serious a disease as tuberculosis, anemia, or scrofulosis is instructed in the open air, it not only holds its own but often does better work than the healthy child raised and instructed indoors, what may we not hope for from outdoor instruction given to the child throughout its school career? And in school career I include a kindergarten course. Because this latter institution rarely has a medical inspection unless it is attached to a public school where the school physician is on guard, it is to my mind a fruitful source of the propagation of infectious diseases. Most frequent of these are the mysterious colds which the little ones bring home and which upon investigation it is shown that all the children have. I am convinced that the open-air kindergarten would do away not only with these so-called colds (which are infections), but would also diminish the number of other infectious diseases children are so prone to.

I am very glad to be able to state here that according to the latest statistics kindly transmitted to me by Dr. Farrand, we have now in the United States 200 open-air schools. While this constant growth is gratifying in the extreme, the number of open-air schools must be many times multiplied in order to accommodate the 600,000 school children in this country who are afflicted with tuberculosis.

The city of Boston seems to be particularly energetic regarding open-air instructions. Its School Committee passed last November the following resolutions:

"Ordered, That the Schoolhouse Commission be requested, so far as feasible, to provide that all rooms in new school buildings shall, on one side at least, open wholly from floor to ceiling to the outer air, in order that during warm weather, at least, the pupils may have as much fresh air as possible."

And now a word about instruction in the open air in higher grades, that is to say, in high schools and colleges. I am aware, of course, that a number of branches in the curriculum of the high schools and colleges cannot be taught outdoors or in an open-air class, but many branches can, and I know from personal experience and from the report of army surgeons in Germany that the recitation and singing in the open air is most conducive to health, the development of sound lungs, and a well-formed chest.

Let instruction in the open air be carried out more universally in high schools and colleges for men and women whenever feasible as well as in primary schools, and I guarantee a stronger and better race physically within a decade, with no intellectual impairment whatsoever. I go even so far as to venture the satement that, if studying mostly in the open air makes it possible for the tuberculous child to accomplish as much and more in shorter hours and shorter sessions, the hours and sessions for the normal pupil of the primary school, high school, and college may also be shortened by this hygienic mode of studying and teaching.

To exclude young children and undeveloped children from the burdens of wage-earning industries.

To forbid employment of all children and youth in industries which menace life, health, and morals.

To limit the hours, forbid night work, and otherwise guard the conditions of children and youth who may be employed.

To promote the efforts of the public schools to meet the recognized needs of an industrial civilization.

These are the aims of the National Child Labor Committee as set forth in a recent announcement. Need I say that unless these conditions are realized in all our States, tuberculosis in childhood and adult life will never be eradicated from our midst?

Read the latest Child Labor Bulletin of August, 1912, published by the National Child Labor Committee, 105 East Twenty-second street, New York, and you will be amazed at the diversity of laws concerning child labor in the various States. How inefficient, how little protective, and even how dangerous they are in some! I cannot too strongly urge all those interested (and everyone should be), particularly our statesmen, to work for the universal adoption of a uniform child labor law, such as is so ably outlined by Mr. Lovejoy in the abovementioned bulletin, and which was adopted at the twenty-first annual meeting of the National Conference of Commissioners on Uniform State Laws (August 25, 26, 1911).

The examination of employees in offices, factories, and workshops is not an entirely new feature in the anti-tuberculosis crusade, and I mention it simply because it is as yet far from being a universal practice. If every employer of a large body of men could only realize what it means morally and even financially to all concerned to have his employees examined for tuberculosis and, when found afflicted, treated and cared for, he would soon follow the example of the few employers who are now doing this life-saving work. It is interesting to note here that one of our greatest life insurance companies—the Metropolitan Life Insurance Co.—has gone so far as to establish on Mount McGregor near Saratoga a special sanatorium for its tuberculous employees. The report of this company's success as a business corporation would certainly show that the unusual care for the welfare of its employees and the consequently increased efficiency of the employees pays in the end.

In a very interesting address recently delivered before the Life Underwriters Association of Canada, Mr. Haley Fiske, vice-president of the Metropolitan Life Insurance Co., very pointedly speaks of the immeasurable value of welfare work for the employees of insurance companies and other corporations with a view to fighting tuberculosis and of a notable victory which was obtained by the Metropolitan Life Insurance Co. in acquiring the legal right for the directors of any insurance company to establish a sanatorium for its tuberculous employees. There was a question of an insurance company having the legal right to spend money for the care of sick employees. To quote Mr. Fiske: "The Superintendent of Insurance, while sympathetic with the enterprise, doubted the power of the corporation to undertake the establishment of such a sanatorium. The question went to the Supreme Court of the State of New York; the decision is emphatic and comprehensive. The Court said:

"The duties of the employer to the employee have been enlarged in recent years, and are not merely those of the purchaser of the employee's time and service for money. The enlightened spirit of the age, based upon the experience of the past, has thrown upon the employer other duties, which involve a proper regard for the comfort, health, safety, and well-being of the employee. * * * It is well within the corporate power to assume, as it has done, the care and treatment of such of its employees as are afflicted with tuberculosis. And unless it is shown to be wasteful of the company's money and unproductive of beneficial results, the practice may stand as well within the scope of the business. The reasonable care of its employees, according to the enlightened sentiment of the age and community, is a duty resting upon it, and the proper discharge of that duty is merely transacting the business of the corporation."

Mr. Fiske continues: "And the court held that such care is not a gratuity, but is regarded as additional compensation. Thus, not only every insurance company, but every corporation, now has the duty imposed upon it to take reasonable care of its sick employees. Not the least service performed by the company has been the obtaining of this decision. The judgment has the support of public opinion. We hope our example in the care of agents will be followed not only by every company represented at this convention, but by every corporation employing labor. The directors have the power and have imposed upon them the duty to use the money of the policyholders and stockholders to care for the employees."

The one suggestion I would wish to make regarding this subject is that where employers alone may not be able to undertake preventive and curative tuberculosis work, employers and employees should unite in a mutual enterprise to insure the employee at least against tuberculosis. Since our political situation makes it seemingly impossible, for the time being, to have anything in the line of a national insurance act such as England is now blessed with, and which marks the beginning of a new era in the campaign against tuberculosis in that country, we must be satisfied with voluntary schemes in the same direction which are feasible at this time.

How this may be done has been very ably outlined by Lee K. Frankel, Ph.D., an authority on life insurance and welfare work of employees, and now assistant secretary of the Metropolitan Life Insurance Company. In his very admirable paper on "Insurance Against Tuberculosis," read before the Sixth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, in May, 1910, Dr. Frankel says:

"Existing agencies, such as labor unions, fraternal orders, establishment funds, and insurance companies can materially enlarge their present sphere of activities by adding to the sick or death benefits which they give special treatment for consumptives, either through physicians, nurses, or in sanatoria. Whether cash benefits can be given during invalidity is a question of obtaining a morbidity experience, and the ability of the members of policyholders to meet the necessary charges. In addition, any of the above-mentioned agencies may cooperate with antituberculosis associations in the United States, or on their own initiative may undertake a campaign of education to instruct their constituencies regarding the care and prevention of tuberculosis.

"Sickness insurance even on voluntary lines has had but very limited development in the United States, aside from sporadic efforts made by labor unions, fraternal orders, and mutual benefit societies connected with industrial establishments. Any concerted and comprehensive attempt to introduce sickness insurance is as yet unknown. Any such effort on the part of a municipality, such as had been developed in Leipzig, Dresden, and Vienna, has not even been thought of in the United States. It is true that the splendid development

in these cities is primarily due to the fact that the majority of members of the sickness societies are required by law to be insured. It may be assumed, however, in view of the enlightened public sentiment developing in the United States, and the efforts that are being made on all sides to fight tuberculosis, that municipalities and towns might organize similar insurance societies either against sickness generally or tuberculosis in particular. There are reasons to believe that cities, through taxation, might accomplish the same results as those obtained in Leipzig and Dresden. The right of a municipality to tax its citizens is not denied. It is not stretching the imagination too far to suppose that a municipality might impose a tax upon its citizens, which tax should be used specifically for the cure of sufferers from tuberculosis, and to carry out preventive measures for the eradication of the disease. Such a tax might be imposed on the basis of wages, and be apportioned among employers and employees on the assumption that industry to some extent is responsible for the spread of tuberculosis. The taxes thus collected might be set aside in a special fund to be administered by a board of directors made up of representatives of labor and capital, similar to the organization of the Leipzig sickness society. The problem of the care, treatment, cure, and prevention of tuberculosis would be placed in the hands of the board of directors."

Dr. Frankel, in mentioning the fact that these same schemes, when proposed thirty years ago in Europe, were thought visionary, yet to-day they are accepted without cavil and are in working operation in many countries with the approval of the government, employers and employees, then goes on to say:

"The day must come when these insurance schemes will receive recognition in the United States. The day has gone by when social problems may be considered purely from the standpoint of philanthropy. It is contrary to an orderly scheme of things to permit individuals to work under evil conditions, to receive insufficient wages, to subject themselves to disease, and to expect that they shall be satisfied, when they suffer from accident or disease, to receive as a privilege the dole which charity or philanthropy is permitted to hand to them. Germany realizes that the State has distinct obligations toward its citizens. Not the least of these is protection against the risks of life and health incidental to our complex industrial development. It is realized that the workingman alone cannot protect himself against the contingencies of life, particularly against sickness, accident, old age, and unemployment, and that opportunity must be given to him, through some insurance plan, to realize that these contingencies, when they arise, will not deprive him of the means of livelihood. Tuberculosis as a social disease must be considered as one of these contingencies. As a social disease it is recognized that its causes in many instances are obscure; that its effects are far-reaching and affect not only the individual, but the community.

"That it is possible to devise an insurance scheme to meet the exigencies arising from the results of the disease there can be no doubt. Of more importance, however, is the conception that in such a scheme there shall be the opportunity to prevent tuberculosis. Precisely what system may be finally adopted in the United States is still problematic. That the subject is worthy of the consideration of the best minds and the best thought goes without saying."

Although insurance against tuberculosis has not yet been effected by any of the United States life insurance companies, to the credit of the officers of a number of these companies it must be said that they are doing invaluable work in the prevention and cure of tuberculosis among their policyholders by a most efficient educational campaign. The Postal Life Insurance Company of New York even grants periodic examination to their policyholders, as stated in Dr. Eugene L. Fisk's admirable address on "The Physical Welfare of Policy-Holders and What Life Insurance Companies Can Do to Increase It."[5]

The Equitable Life Assurance Society of the United States publishes quarterly an interesting magazine under the name "The Human Factor." Its mission is to serve the officers, employees, and policyholders of the Equitable company and humanity in general by stimulating interest and action in the conservation of life and of life insurance. It is also designed to supply an attractive and instructive medium through which the members present and prospective may keep in touch with the management and with the progress of the society. The same company has an admirable Department of "Conservation" under the directorship of Conservation Commissioner E. E. Rittenhouse.

The Metropolitan Life Insurance Company, because it cannot yet take care of its tuberculous policyholders in its own sanatorium, furnishes cards to all policyholders to forward to the district office in case of sickness. Let me quote again regarding this valuable work from Mr. Haley Fiske's above mentioned address: "The agents, on their calls for premiums, look out for cases of sickness. The nurses visit the office, receive the cards, interview the agents and calls are promptly made. First aid is furnished, the patient is made comfortable, and where necessary the family physician is called, if there is one, or a dispensary or public physician interested where there is no ability to employ a doctor. The nurse then places herself under the direction of the physician and calls as often and stays as long as necessary. Sometimes a call or two suffices; but the number of calls upon a patient has been known to be nearly one hundred. No charge is made, no deduction made from claims. About a million visits are made a year, in about 1,100 cities and towns, at a cost of about half a million of dollars. The nurses employed are, whenever possible, those belonging to local associations. Where associations are not available, the company employs its own nurses. Tuberculosis, pneumonia, bronchitis, influenza, typhoid fever and among children, measles, diphtheria, and paralysis are the principal diseases treated." All these diseases predispose strongly to tuberculosis, and it must be obvious that this is most efficient anti-tuberculosis work. Its value is doubly enhanced by free distribution of the appropriate anti-tuberculosis literature issued by the company. Thus, for example, an illustrated pamphlet has been circulated printed in ten languages, to the number of four and a half million copies and entitled "War Upon Consumption." A supplementary pamphlet containing a list of tuberculosis sanatoria, hospitals, dispensaries, classes, and associations in the United States and Canada, was prepared and circulated in the hope that many sufferers would be directed to places of treatment. Another pamphlet followed, entitled "Directions for Living and Sleeping in the Open Air." It contained directions for making cheap shacks for

roofs, porches, and open spaces, and for window-tents in rooms, with illustrations.

To the student of the causes of tuberculosis as a disease of the masses, the housing of the masses will always be of greatest import. It has always seemed to me that the tuberculosis problem cannot be solved without improving the housing conditions of the poor and the moderately poor, and so I feel that among the newer factors which will be helpful in the solution of the tuberculosis problem in the United States I must mention the invaluable work of the National Housing Association which was founded in New York City a little over a year ago with Mr. Rovert W. De Forest, the president of the New York Charity Organization Society, as president; Mr. John M. Glen, director of the Sage Foundation, as treasurer, and Mr. Lawrence Veiller, former deputy tenement house commissioner, as director. The following are the objects of the association, which speak for themselves:

1. To improve housing conditions, both urban and suburban, in every practicable way.

2. To bring home to each community the importance of right housing conditions and the consequences of bad ones.

3. To study in various cities the causes of the drift of the population into the cities and the methods by which the population may be distributed over larger areas.

4. To encourage the formation of improved housing associations where they do not exist, and to aid in the work of all such associations by advice and direction.

5. To act as a clearing house of information for such agencies, and to furnish advice and suggestions to those interested in housing reform, and generally to promote popular interest in the subject.

6. To aid in the enactment and enforcement of laws that will (a) prevent the erection of unfit types of dwellings; (b) encourage the erection of proper ones; (c) secure their proper maintenance and management; (d) bring about a reasonable and practicable improvement of the older buildings; (e) secure reasonable, scientific, and economic building laws.

7. To aid in defending such laws when once enacted from the attacks of adverse interests, and in correcting them from time to time to suit changing conditions and meet new needs as they develop.

8. To train and equip workers for the various places of housing reform work.

A part of the anti-tuberculosis warfare, which as a whole is as yet sadly neglected, but which in numerous instances could be carried out at once, is teaching the tuberculous or the predisposed families the invaluable practice of outdoor sleeping. The little device known as the window-tent, which it was my privilege to bring before the profession some years ago, and the numerous similar arrangements suggested and manufactured since then, are suitable and applicable to nearly every home; for even the poorest they should be made common, particularly for people who are obliged to work indoors during the day. More elaborate devices, such as sleeping porches, sleeping balconies, wall-tents, starnooks, etc., are more adaptable to individual homes.

The National Association for the Study and Prevention of Tuberculosis, realizing the inestimable value of outdoor sleeping at night, recently instructed its assistant secretary, Thomas S. Carrington, M.D., to gather material and study the various methods of outdoor sleeping for the purpose of writing a popular book on the subject. The book is entitled "Fresh Air and How to Use It." It is to my mind one of the most valuable contributions to this phase of our tuberculosis warfare. This volume of 250 pages, with 150 excellent illustrations, is sent to all the members of the association, and non-members can procure it at the low price of $1, including postage, by writing to the association, 105 East 22nd Street, New York, or through any bookseller. A smaller pamphlet on the same subject, similar to the one mentioned under the Metropolitan Life Insurance Company's literature, can be obtained free of charge by writing to the association's executive secretary, Dr. Livingston Farrand, 105 East 22nd Street.

To plead for more institutions for the treatment and care of early cases is, as I have already stated, not new in the anti-tuberculosis campaign. But we have of late years become even more cognizant of the fact that institutions for the treatment and care, or we might say with equal emphasis, the isolation of advanced cases, particularly of the vast number which live under the most deplorable hygienic condition constituting an almost certain menace to their kin and neighbor, is of paramount importance if we desire to effectually combat tuberculosis.

The following table, recently published by Dr. Biggs, shows that the mortality from tuberculosis in 1911 was as follows:

| City | 1901 General Death Rate. | 1901 Tuberc. Death Rate. | 1911 General Death Rate. | 1911 Tuberc. Death Rate. |
|---|---|---|---|---|
| Paris | 18.2 | 4.32 | 16.7 | 3.59 |
| New York | 19.91 | 2.29 | 15.13 | 1.76 |
| Boston | 19.87 | 2.36 | 17.08 | 1.55 |
| Philadelphia | 18.26 | 2.23 | 16.50 | 1.87 |
| Chicago | 13.93 | 1.42 | 14.55 | 1.66 |
| London | 17.24 | 1.81 | 12.71 | 1.14 |
| Berlin | 18.00 | 2.18 | 14.65 | 1.78 |

The mortality from tuberculosis in the United States has been estimated by various experts to be about 200,000 per annum. From observations in cities where the most careful tuberculosis statistics are kept, as for example in Cleveland, Ohio, it has been positively shown that to every death from tuberculosis there are eight living tuberculous invalids capable of propagating the disease unless they are conscientious and trained in prophylactic measures or segregated in institutions. In our estimates for the care of tuberculous patients who are in need of institutional care we have made heretofore the number of deaths the basis for our calculations. One of the newer conceptions in the anti-tuberculosis problem must be to multiply by eight the number representing the deaths in order to know what we really need in the line of providing proper home or sanatorium care for our fellow citizens afflicted with tuberculosis.

In the United States we have at this time 525 hospitals and sanatoria for the tuberculous, representing accommodations for about 30,000 patients. Although hopeful and inspiring when compared with conditions of 20 or even 10 years ago, this number still offers only a drop of relief in an ocean of woe.

Poverty seems responsible to a very considerable degree for the prevalence of tuberculosis. The New York Association for Improving the Condition of the Poor has just announced the result of the investigation of 6,565 families that sought aid of the association between October 1, 1911, and June 30, 1912. Of this number, 1,605 sought aid because of illness, and the illness in 555 families was tuberculosis. This would indicate that 8 per cent. of the destitution in the homes of the city during

the above-named period was due to tuberculosis. The association says that some effective plan of home treatment must be found, because it will be many years before there will be enough hospitals to accommodate all the tuberculous patients. A comparison of the hospital provisions in the United States with the needs and growth of population shows that the demand is increasing twice as fast as the supply.*

London offers the lowest death rate of the world's great cities. The isolation of advanced cases to which our English coworkers attach the greatest importance, is said to be responsible for this remarkably low death rate from tuberculosis.

You are perhaps familiar with the very effective work which Mr. Homer Folks, this year's president of the National Association for the Study and Prevention of Tuberculosis, has done in the capacity of Secretary of the State Charities Aid Association. The Committee on Tuberculosis of this Association has worked and is working for the establishment of a tuberculosis hospital for advanced cases in every county of the State of New York. Mr. Folks expresses the hope that by 1915 there will be no uncared-for tuberculous individual in the State of New York.

I do not know if Mr. Folks includes the City of New York in his prophetic hope, his activities having not taken in the metropolis. Be this as it may, years of experience as senior attending physician to one of our largest tuberculosis hospitals in New York City, where the vast majority of patients are advanced cases, has taught me another new phase of the tuberculosis problem connected with the care of the tuberculous poor in the latter stages of the disease where isolation would seem imperative.

We now have in a few States of the Union, as we have in New York City, a law whereby the consumptive, considered a menace to his fellowmen, can be forcibly removed to one of the tuberculosis hospitals. The respective paragraph authorizing the removal of such patients is found in the Sanitary Code, Section 139, and reads as follows: "Whenever an inspector of this department shall report in writing that any person sick of any infectious disease, under such circumstances that continuance of such person in the place where he or she may be, is dangerous to the lives of other persons residing in the neighborhood, the sanitary superintendent * * * upon the report of the medical inspector of the department, may cause the removal of such person to one of the hospitals under the charge of this department or to a hospital delegated by the Board of Health."

To the best of my knowledge there are at this moment neither in the City of New York nor in any other of our larger cities sufficient accommodations to thus segregate all those who by reason of their environments ought to be placed in hospitals.

Why is it that so many patients must be forced to go to the hospital? Why do they not go voluntarily? Why do so many who go voluntarily become discontented and long to go back home where the hygiene and food may be poor and medical care wanting entirely?

Instead of enumerating all the objections which I have heard from patients or friends of patients, and the reasons why the latter do not wish to go or do not wish to stay in the hospital, let me suggest at once the remedies for this situation and then you will perhaps realize with me that it is indeed a new phase which we campaigners in the antituberculosis warfare must consider very seriously.

The great educational campaign has taught the consumptive and those living with him that a hospital for consumptives means a place to die in; a sanatorium a place to get well. My remedy for this is to call the institution in the city or near the city, destined to take care of advanced cases, "sanatorium-hospital" or "hospital-sanatorium." Because the advanced cases among the poor consumptives in large cities are numerous, the existing institutions are often overcrowded. Old former general hospitals are used for the care of such cases, and because of the seeming hopelessness of many of them relatively little care is bestowed upon all. If we wish to attract the advanced cases to such hospital-sanatoria we must above all make the place attractive, even beautiful. We must bestow upon our consumptive poor, though they are no longer in the incipient or early stages, the same care and comfort which are given to the well-to-do who are received in many private sanatoria in the advanced stages as long as they are able to pay. The disease in some advanced tuberculous cases can be arrested, in many their lives can be prolonged and made comfortable, and in not a few instances even an economic* cure can be accomplished.

That we often encounter objections to entering a sanatorium even among the earlier cases and also the well-to-do, is a well-known fact. This prejudice on the part of patients to entering sanatoria arises mainly in their fear of having to associate with individuals whom they consider more ill than they are themselves. Education through appropriate literature and tactful explanation on the part of the physician who sends the patient to the sanatorium, are the only remedies for this sanatorium-phobia.[6] A more serious reason why the poor consumptive hesitates to enter or to remain any length of time in a sanatorium or hospital, no matter how attractive and well equipped it may be and how kindly he may be treated, is the thought of those left at home who may have been more or less dependent upon him.

I know from my sanatorium and hospital experience how badly the patient will do when anxiety and grief is added to his physical suffering; how his appetite will improve, serious symptoms will subside when the cause for his grief and anxiety has been removed. The care of the family when the tuberculous breadwinner is incapacitated, whether in sanatorium, hospital, or at home, is one of the newer phases in the anti-tuberculosis warfare which must receive our most serious attention. In Australia there exists a special tuberculosis invalid pension and ten shillings per week are granted to those in need and unable to work.

Among the following activities which form the basis of our Health Department's work in New York, there may be relatively little that is new, but the summary of this tuberculosis work as it is now

*The State of New Jersey recently enacted a bill entitled "An Act Concerning Tuberculosis" (Chapter 217, Laws Session of 1912) which in its provision for hospital facilities is the most advanced and efficacious thus far enacted by any State.

*By economic cure is to be understood a condition in which the disease has been sufficiently arrested to allow the trained patient to take up some occupation whereby he can earn his livelihood without aggravating the relatively quiescent stage of his disease and, of course, without endangering those with whom he has to work and associate.

being carried on is a strking example of what can be done by an efficient health department of a great city.

There is (1) the notification and registration of all cases of tuberculosis, which was started in 1894. (2) The free bacteriological examination of sputum to facilitate early and definite diagnosis. (3) Educational measures of various kinds, circulars, lectures, newspaper articles; tuberculosis exhibits in the various parts of the city including outdoor exhibitions with moving pictures during the summer months. (4) Visiting of consumptives in their homes and continuous supervision of cases in tenement houses by a corps of trained nurses. (5) Free disinfection by the Department of Health, and issuance of orders for the renovation of rooms vacated by consumptives. (6) Reference of cases to proper charitable organizations. (7) The provision of five classes of institutions:

*a* Free hospitals for advanced cases;

*b* Free clinics for diagnosis and treatment of ambulant cases unable to go to sanatoria;

*c* Free sanatorium for incipient and early cases;

*d* Free day camps;

*e* Establishment of the Tuberculosis Hospital Admission Bureau, for the proper selection of cases for institutional care.

(8) Forcing certain cases of patient into a hospital and retaining them there. (9) Enforcing regulations concerning spitting in public places. (10) Enforcing regulations forbidding use of public drinking cups. (11) Research studies concerning the mode of infection, the rôle of bovine tuberculosis, characteristic of the tubercle bacillus, etc.

An equally comprehensive program containing some newer phases of the problem and which in its ensemble might be considered a model for health ordinances for cities which are resorts for consumptives to follow, is contained in the report submitted to the Section on Preventive Medicine and Public Health of the A. M. A. at the session held in Los Angeles in 1911.* The subjects dealt with in these health ordinances are as follows:

I. REGISTRATION.

Physicians' Duty to Report all Cases of Tuberculosis.

Duty of Authorities and Hospitals, Sanatoria, etc., to Report all Cases.

Duty of Managers or Owners of Hotels, etc., to Report all Cases.

Duty of Department of Health to Visit Patients in Hotels, etc., not Attended by Physicians, and to Leave Literature.

Duty of Department to Make Microscopic Examinations, and to Leave Literature, at Request of Physicians.

Duty of Department to Keep a Record of all Cases.

Penalty for Wilful Misstatement by Physician.

II. SCHOOL CHILDREN.

No Tuberculous Child, or Child of Tuberculous Parents is to be Admitted to School Except by Permit from Department.

III. DISINFECTION.

Premises Vacated by Tuberculous Persons to be Disinfected.

Such Premises not to be Reoccupied Except as Permitted by the Department.

Placard to be Placed on Door of Infected Premises.

Unlawful to Dispose of Belongings of Diseased Persons Unless Disinfected.

IV. PUBLIC FOUNTAINS AND DRINKING CUPS.

No Fountain is to be Erected in Public Places or Buildings Unless Properly Constructed; No Drinking-Cups to be Attached to Public Fountains Unless Provison be Made for Properly Rinsing.

V. EXPECTORATION.

Illegality of Expectorating in Public Places.

Posting of Notices Regarding Danger and Illegality of Expectorating.

Duty of Police and Others to Cause Arrest of Offenders.

Placing of Cuspidors for Use of Public and Employees.

VI. LAUNDRY.

No Linen of Tuberculous Persons is to be Handled at Public Laundry Unless Sterilized.

VII. STREET SWEEPING.

Frequency of Sweeping and Removal of Dirt Once Every 24 Hours.

Time and Method of Sweeping and Removal of Dirt between 6 A.M. and 11 P.M. and Previous Flushing and Sprinkling with Water.

VIII. FOOD AND DRINK.

Premises where Food is Sold Not to be Occupied as Living Rooms.

Articles of Food Carted Through Streets to be Properly Protected from Dirt, Dust, and Flies.

Articles of Food Offered for Sale to be Properly Protected from Dirt, Dust, and Flies.

No Tuberculous Person to be Employed at Manufacturing or Selling Foodstuffs.

Penalties.

IX. GARBAGE.

Duties of Owners, Tenants, etc., to Provide Proper Receptacles for Garbage.

Manner of Collection and Removal of Garbage, Once in 24 Hours, in Watertight Tank and Closely Fitting Cover.

Garbage Not to be Used for Filling-in Purposes, or as Food for Animals Unless First Cooked.

X. MANURE.

Accumulation of Manure in Vicinity of Dwellings Illegal Except as Approved by Department of Health.

Manner of Removal and Disposal of Manure, etc. Removed at Intervals Prescribed by Board of Health.

XI. SMOKE.

No Dense Smoke to be Emitted Into Open Air from Any Building or Engine.

There is one feature of the dissemination of tuberculosis which, to my mind, has been overlooked by most of our authorities. I refer to the tuberculosis germ carrier who is not under the care of a physician. Such individuals are far more numerous than we think. Among these are, first of all, the patients who, although known to be tuberculous, think themselves free from tuberculosis germs because one or two examinations of the sputum were negative. Unfortunately, there are still some physicians who likewise consider the presence of the bacillus in one or two specimens of sputum as the only positive evidence of tuberculosis.

Besides the typical tuberculous patient without medical supervision or who has passed through the hands of a careless practitioner, there are the vast number of patients who go through life with rela-

*Report by Committee: G. Walter Holden, M.D., Denver, Col., Chairman; W. Jarvis Barlow, M.D., Los Angeles, Cal., and H. Anderson, M.D., El Paso Tex., *Jour. A. M. A.*, Dec. 9, 1911, Vol. LVII, pp. 1897-1900.

tively little functional disturbances, nay, even attaining old age because an early attack of tuberculosis has conferred upon them a relative immunity. Then there is another group of tubercle bacilli carriers who, on examination, show almost a normal chest and still their sputum is positive. I do not even venture an explanation for such a condition, but all those who see and examine a good many patients will and must admit that these seemingly physiological bacilli carriers exist.

The greatest danger arises, of course, from the bacilli carriers without a home. Our tuberculosis committee recently made an investigation which revealed that among the 29,460 cases of tuberculosis registered at the Department of Health of New York, 5,053 were homeless. Of these 1,064 were actually without any homes, 2,099 were reported as "not found," 1,346 lived in lodging houses, and 544 in furnished rooms.

Aside of these homeless individuals there is that, alas, vast number of tuberculous patients among all classes of society who, although they know that they are bacilli carriers, still are careless in the disposal of their sputum or become so from the lack of provision of sputum receptacles.

The remedies I venture to offer to do away with the source of infection arising from these knowing and unknowing bacilli carriers are as follows: examination and reexamination for tuberculosis, including repeated sputum examinations, of every individual who desires to seek employment in no matter what sphere. By such a policy the number of careless, homeless bacilli carriers may certainly be diminished. A careful physical examination should also be made of all school children and students in high schools and colleges, parochial and private schools, also of the inmates of prisons and reformatories, and of all municipal and federal employees and officers.

Because of the very nature of the work of our post-office employees,[7] their handling of mail bags, packages, letters, and stamps which in turn are handled by the public, the stamps being moistened with saliva by the aid of the tongue, these employees should be examined and periodically reexamined and no bacilli carrier permitted to continue to do work whereby he may become a source of infection. When one watches the selling of stamps at the average post office in city or country and sees how the gummed side of the stamp passes over the window ledge which is fingered by hundreds of individuals every day, one cannot help feeling convinced of the likelihood of the transmission of tuberculosis and other microbic diseases by stamps and even letters. It should be taught to old and young that licking stamps is dangerous because of the possibility of contamination.

The masses should be educated to the effect that the sputum of any individual may be infectious, that it is dangerous to expectorate anywhere except in the middle of the street where the sputum may have a chance to be rendered inoffensive by the sun and air and will have little chance to be carried on the soles of people's feet into the houses. In public buildings and wherever possible, sputum receptacles should be installed with covers to prevent flies and other insects from getting at the sputum. They should be well kept and frequently cleaned, and above them should be placards explaining the danger from promiscuous spitting. But instead of the headline "Do not spit here" or "Do not expectorate" we should rather attract the attention of the individual who must spit by the positive command, "Spit here."

Everybody should be taught that to cough without holding one's hand before his mouth is not only impolite but dangerous. All kinds of germs such as those of tuberculosis, grippe, and pneumonia, may be expelled with the small drops of saliva ejected during the so-called dry cough. The danger from droplet infection should be mentioned in the circulars prohibiting indiscriminate expectorating.

The masses should be most thoroughly educated concerning the danger arising from the careless spitter. This is, to my mind, one of the most important ways of diminishing the sources of infection arising from the bacilli carriers. For the comfort of the individual who may be so unfortunate as to be a tuberculosis bacilli carrier, let it be known, however, that by the proper personal care he may become a perfectly safe individual to associate with. His case is not at all to be compared with the typhoid fever carrier who should be isolated until all evidence of his being the disseminator of disease germs no longer exists.

The Chautauqua Salute, the waving of handkerchiefs by the entire congregation in honor of some person present or to express their religious joy, is, to my mind, a dangerous practice, as these handkerchiefs may often contain dried infectious pulmonary and nasal secretions. This custom should be suppressed by enlightened clergymen. It is particularly dangerous within doors.

The next important problem and a relatively new one is the employment of a discharged tuberculous patient. Until recently it was held that the best occupation for the cured tuberculous individual was farming, horticulture, or a similar outdoor occupation. When the individual who has contracted tuberculosis had been a farmer, the return to outdoor work when cured might be the ideal, but to make a tailor, a shoemaker, a carpenter, a bookkeeper, clerk, or teacher into a farmer after he has spent six months to one year at a sanatorium in an enforced physical idleness is an entirely different problem. Those who have studied the question most thoroughly are now convinced that it is best to return the cured patient not to his former environment, but to let him go back to his former occupation under improved conditions with his new knowledge of hygiene, his new need of fresh air, and the experience he has gained as to the amount of work he can do.

Many of our more progressive sanatoria resort to occupation therapy as a means of strengthening and improving the patient's health. Graduated labor is, to my mind, one of the most valuable modern adjuvants we have in the hygienic and dietetic treatment of the tuberculous patient. The problem of occupying the patient arrested or cured, discharged from the sanatorium is a difficult one. He is rarely strong enough at once to return to his former occupation and resist the debilitating influence of overcrowding by day and night. I would suggest therefore in connection with our system of sanatoria and sanatoria-hospitals, intermediate stations which you might call health work stations where patients may be able to resume their former occupation in exceptionally good sanitary environments for at least six months after their discharge from the sanatorium. I am convinced that such intermediate stations would greatly reduce the number of relapses and much of the vast sums we are now spending for the care of tuber-

culous individuals would not have been spent in vain.

In a recent paper read before the State Medical Association of New York, I showed that we spent last year in our city over $2,000,000 for the care of the tuberculous and yet of the estimated 50,000 tuberculous patients of New York City, 10,258 died. This is far too large a percentage for the sacrifices made by the taxpayers and the medical profession. I hold the frequent relapses and the hasty return of the half cured patient to his former occupation in the same environments responsible for this altogether too great morbidity and mortality. Dr. David R. Lyman of the Gaylord Farm Sanatorium, at Wallingford, Conn., has demonstrated that the arrested cases when following their usual trade under better hygienic conditions, live better and consequently longer because of their earning capacity being better than if they had endeavored to learn a new trade.

Prof. Fisher showed that in this Gaylord Farm Sanatorium, with which he is also connected, it actually "pays" the State of Connecticut in cold cash to save the lives of consumptives, especially incipient consumptives. The $200,000 expended in this work has resulted in restoring so much working power that already those discharged from the institution have earned $300,000 and still have a potential earning power, good for many times this amount. On the basis of this experience, he concludes that every dollar expended in such institutions saves in a short time at least five dollars, to say nothing of the gains to the consumptive himself. At present, about fifteen million dollars a year is put into the tuberculosis fight in the United States. When several times this amount will be invested—enough to isolate or at any rate "educate" every one of the million-odd consumptives in the United States, now spreading infection—we may expect to see the beginning of the end of the great white plague. We must be more rational in our prophylaxis as well as our treatment and in the aftercare of our consumptives, otherwise we will never master the disease.

As one of the newer problems in our fight against tuberculosis, I would be remiss in my duty would I not mention the all absorbent question of the high cost of living. Not to have enough food or not enough nutritious food predisposes to tuberculosis. Every phthisiotherapeutist knows that ample food and good food is one of the essentials in the successful treatment of tuberculosis; and furthermore, those of us who are interested in the treatment of the tuberculous poor in institutions or at home, know what a problem it is nowadays to make both ends meet, and yet provide enough nutritious food for those under our care.

I am not enough versed in statesmanship or politics to suggest a remedy along that line. The only thing which appeals to me likely to serve as an amelioration or perhaps even a rational remedy for the situation is to follow the advice of men like Mr. James J. Hill,* Professor Cook of Yale,[8] and the numerous experts of our Agricultural Experiment Station. Philanthropists and generous minded citizens in general should cooperate with these experts to make agricultural life profitable and also pleasant. When by the provision of sound and sane social enjoyment and intellectual advancement for the young generation of farmers living in the country can be made as attractive to young people as living in the city, when the farmers will have been taught to double and treble the yield of their products, and when transportation to the consumers will be made easy, farming will become an occupation to be sought by many. Its returns will be profitable and the consumer will receive the products which he needs at a cost within his means.

I come lastly to that phase of the tuberculosis problem for which it is difficult to find a name but which we might call "shifting the responsibility,"—sending patients away to be cared for by others. Whether this shifting of responsibility is done conscientiously or not, it is not fair. The Governor who pardons a tuberculous prisoner without being sure that this tuberculous individual will not become a burden to his family or the community, is not doing a fair thing. The Eastern municipality, physician, or any individual who sends the poor consumptive to a Western State to let him there fight for himself until he becomes a burden to the strange community, is not doing a fair thing.

How keenly this injustice is felt you will see from the fact that near the middle of April of this year, at the call of Governor O. B. Colquit of Texas a Southwestern Conference on Tuberculosis convened in Waco, Texas, to consider "ways and means of aiding the tuberculous stranger in the Southwest and to discourage further migration of indigent consumptives to Southwestern States."

The steamship companies who send their agents throughout Europe, advertising cheap rates, holding out great promises to the emigrants and bringing them here with tuberculosis to become a burden to the community, do not do a fair thing.

What is the remedy? Let us enlighten our pardoning governors on this subject. Let them be impressed with the fact that any discharged tuberculous prisoner with an open tuberculosis constitutes a menace to the community. The discharged or pardoned tuberculous prisoner is often, because of his social status, even a greater menace than the ordinary tuberculous individual. If special sanatoria for this class of patients are needed let them be established by the State.

Against the injustice of unloading the consumptive poor of one State into another, the above mentioned conference in Waco suggested a very good remedy which was advocating the publicity as to lack of free hospitals for stranger consumptives in those sections, the inability of charity organization societies to aid such, the difficulty of securing suitable employment, and the fact that consumptives coming to the Southwest should have funds sufficient to carry them for about one year. Of course, making the problem of the consumptive poor as much a state and federal problem as it is now a city and state problem, would be the most rational solution. Let a federal department of health assume the responsibility of controlling the care of all the needy consumptives and let state and city anti-tuberculosis agencies act under its supervision, and such injustice as making one state pay for the consumptive poor of others would not be possible. A good suggestion was made at the above mentioned conference, namely, to call upon the federal government to convert abandoned forts and military reservations in the Southwest into sanatoria-hospitals for consumptives. In the meantime let every citizen realize the enormity of the offense of sending a consumptive without means to another State, and let him be punished for it if discovered.

*Letter to the *New York Times* of August 24, 1912.

Again, what can we do to stem the tide of tuberculous immigration? This is also a large subject and worthy of separate consideration.* Tuberculosis must be considered a world problem, a problem for every civilized nation. Let European governments understand that they must take care of their own tuberculous people as we take care of ours, and that in the end, by united efforts, it may be possible to conquer the white plague in all countries.

Every prospective emigrant should be examined to ascertain his freedom from tuberculosis by two competent medical men, one appointed by his home government and one by the steamship company which is to transport him to this country. A certificate showing freedom from tuberculosis, signed by these two medical men should be in the possession of every emigrant wishing to come to these shores. An individual discovered to be afflicted with disease should be returned to the care of the authorities of the city or village from which he came with the diagnosis and recommendation for treatment. Exceptions can and should be made in the case of an individual with ample means who is simply visiting, or seeking to recuperate his health by a change of climate, or desirous of entering an American sanatorium for treatment.

The laws relating to deportation should be changed to the effect that if the holder of any such certificate, or any immigrant develops tuberculosis within six months to one year from the date of his arrival here and becomes a charge to the community, he shall be deported to the port whence he came. The expenses for this deportation should be borne by the steamship company who brought the immigrant to our shores, and not by the State Board of Charities.

The suggestion has been made that physicians of the Public Health and Marine Hospital Service be stationed at the important points of departure in Europe so that each emigrant can be thoroughly examined, and those entitled to a clean bill of health be allowed to take passage. I question whether the international law would sanction such a procedure. Secondly, there are too many minor ports from which emigrants could take passage and escape the United States Government physicians' examination. Of greater value would it be for foreign governments and steamship companies to make it known that if a man expects to stay in the United States he must not become a public charge; that he must be physically, morally, and mentally sound. With such publicity and the additional examination in the manner above outlined, the United States Government will be less burdened with the care of tuberculous aliens who, uncared for, are a constant menace to the community.

For want of space I must refer my readers for further details to the article on this subject in the MEDICAL RECORD of July 13, 1912. I might, however, add here a very valuable suggestion made at the recent International Tuberculosis Congress in Rome by Dr. Antonio Stella of New York. It was to the effect that every emigrant should be insured against tuberculosis, the cost of insurance to be added to the price of the steamship ticket, the policy entitling the bearer to return transportation and free treatment in a sanatorium, in the event of his contracting tuberculosis within a specified time.

I hope that through federal control we may obtain fair play regarding tuberculosis emigration from one state into another, and through international agreement, from one country into another, and may thus justly distribute the burden we have to bear and I am sure are willing to bear. The eradication of tuberculosis from our midst is not an easy thing. The greatest of all predisposing causes—poverty, want, bad housing, insufficient food, lack of employment are not new phases of the tuberculosis problem. They confront us at every step, more urgently to-day than yesterday. They are known to you as they are known to me and they will need attention, for not until there will be more social justice, a more wise understanding and generous fulfilment of our obligations toward our less fortunate brothers and sisters, may we hope for victory over the great white plague. Fortunately the skies are clearer. Instead of asking "Am I my brother's keeper?" many truly great and noble minded men and women say "We must be our brother's keeper." According to the fourth annual statement issued by our National Association, nearly $19,000,000 were spent in the anti-tuberculosis campaign in the United States during the last year. Thus, it is true, much has been done of late, but there is much more for all of us to do. May our labors be blessed and crowned with success.

*I made it the theme of a special paper, entitled "The Immigration of the Tuberculous into the United States. A Problem for Every Nation." It was intended to be read before the Congress on Tuberculosis in Rome last April, but owing to my inability to be there it could only be read by title, but it was read in full at the recent Symposium on Immigration of the meeting of the American Academy of Medicine in Atlantic City, and appeared in the MEDICAL RECORD of July 13, 1912.

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16 WEST NINETY-FIFTH STREET.

## REMARKS UPON THE GASTRIC MOTOR FUNCTIONS.

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IT is only within comparatively recent years that the motor functions of the stomach have received the clinical attention which they deserve. This refers especially to the minor disturbances of activity. Unless these functions were affected to almost a surgical degree, calling for mechanical interference, they were considered in a superficial manner. Certainly, it has not been the custom to attribute to the lesser motor affections their due importance and influence in shaping the development of the ordinary gastric diseases. Not only does the progress of any gastric disease, however, depend upon the behavior of the motility of the

organ, but most of the distress of the chronic dyspeptic is due to it. It is fairly well established that the average stomach can support a very decided acidity without rebellion, and it is only when in the course of the disease a disturbance of relationship between acidity and motility occurs, that the ordinary symptomatology of dyspepsia begins. Most of the distress of chronic gastric conditions is due to changes of intragastric pressure and not to chemical changes in the food contents. Intragastric pressure depends primarily upon muscular tone, and it is the influences bearing upon the latter which are of primary importance in determining the final result in each case. In this respect remote influences are very apt to be underestimated. This attitude is manifestly unreasonable, for it is fair to assume that whatever bearing such influences may have upon the secretory functions, they must necessarily exercise the same upon the motor functions.

As most cases of chonic dyspepsia are resolved by analysis to a basis of disturbed relationship between acidity and motility, the question always arises as to which function succumbed first. So heated was the discussion upon this topic at one time that the camp of gastrologists was fairly divided into obstructionists and non-obstructionists. Given advanced cases of hypersecretion with food retention the primary disturbing cause was attributed to either one function or the other, according to the particular bent of the individual. The decision depended upon physiological or mechanical mental tendency. Surgery has always favored the obstructionist view, and indiscriminate gastroenterostomy became the rage. Fortunately, a healthy reaction has set in, due partly to many recurrences of symptoms following operation, due also to a better knowledge of the regulating mechanism of the motor functions themselves.

This question of priority must always possess a certain purely scientific interest apart from its practical bearing. It can be partly decided from its biological aspect. Regarded in the latter light, all digestion can be looked upon as a self-preservative and defensive measure, and as all defenses of organic life were at one time chemical, the actual digestive secretion should be regarded as first in importance, to which all other activities are subservient. As digestion expanded, however, and the chemical processes concerned became more complicated, muscular changes in the alimentary tract kept pace accordingly, so that from the simple passive pouch of primitive life there gradually developed the extensive digestive system of the present-age vertebrate. Always, however, has this muscular development been subservient to the chemical function, and in this light it should be judged.

In a broad survey of the whole field of digestion these well-known facts are not as irrelevant as would appear at first sight. Into every case of advanced disturbance of relationship between acidity and motility, this question always projects itself —often with great practical significance, and while it cannot always be decided positively in the individual, on account of complicating factors, it can be said in a general way, by reason of this biological development, and substantiated by the histories of the great mass of clinical material, that the secretory function was the first to succumb, to be followed by changes in motility as a matter of accommodation, adjustment, or protection. The muscular structures act as protectors against excessive secretion or as aids to diminished secretion. Hence, it is that in cases of excessive gastric secretion the tendency is always toward retention, whereas in diminished secretion the opposite effect or rapid expulsion results. In the intestine the relationship is the reverse. Excessive secretion is followed by rapid expulsion and *vice versa*. These fundamental physiological facts should always be borne in mind when judgment upon obscure conditions of secretion and motility of the whole alimentary tract is demanded.

With such a parallelism of evolutionary development, it is evident that the regulating mechanisms of the two systems must be more or less alike, so that any influence affecting the one must necessarily affect the other. It is impossible to conceive any distinction in this regard. Both systems must respond in their respective fields of activity, in like manner to like influences. It is not probable that conditions that stimulate the secretory function would depress the motor function. Hence, all those remote influences which have heretofore been judged competent to affect the secretions, not only the immediate physiochemical or psychoneurotic influences of adult life, but also the distant pernicious dietetic habits of childhood and hereditary predisposition, must have a direct bearing upon the motor functions. It is these remote influences, included among the latter, which have not received the consideration they deserve, for it is they which determine in great measure the probable course of development of motor dyscrasias of later life.

That tendencies affecting the motility of the gastrointestinal tract can be transmitted is sufficiently evidenced by the familiar types, gastric atony, chronic constipation, or chronic diarrheas. These are but hereditary tendencies to hypo- or hypermotility. They do not indicate that a child inherits an abnormal musculature. They more likely indicate a definite mode of response on the part of the musculature to external or internal stimulation. They are conditions of disturbed equilibrium between excitation and inhibition, and as such are distinctly hereditary. These tendencies are present and potent in every case and guide the destinies of the cases, so that, given a certain number of individuals, subject them to the same insults, and we will see in a certain number sluggish activity, and in others hyperactivity in the propulsion of the chyme content. The early recognition of these tendencies is of considerable practical importance. This should be done, if possible, in each case before any local readjustment—sure to occur as the case advances—has had time to obscure this fundamental issue involved. Thus, in many cases of the familiar combination of hypersecretion and retention, an early examination would have revealed both hypermotility and hyperchlorhydria. Had this principle been inculcated into gastrology earlier, much discussion about primary pyloric obstruction would have been avoided.

These, however, are the extreme cases. We are dealing here more with the average cases as they occur in practice or clinic, states in which the graver conditions of myasthenia have not developed. While it is generally admitted that the minor emotional states have a direct influence upon the secretions in these cases, no special attention has been directed to their influence upon the motor function. These were supposed to proceed normally, except perhaps in cases of severe shock. When

we consider, however, that 90 per cent. of our ordinary chronic dyspepsias possess a determining neurotic element, that 90 per cent. of these neurotic elements are of the type known as anxiety neuroses, in which the emotional state is liable to be markedly exaggerated, and, lastly, that 90 per cent. of the disagreeable sensations in the stomach experienced by these individuals are due to either increased or decreased muscular tone of the stomach, it becomes evident that the minor influences of everyday life must bear directly upon the muscular activities themselves, and that the determination of these activities, their present and past tendencies, is an item of considerable moment for a proper estimation of every case.

As the object of a series of tests of the gastric secretions under varying food intake is to determine the average secretory capability of the organ, so here the object must be to determine the general motor capability. In order to accomplish this effectively repeated observations are necessary. Just as the secretions may vary quantitatively from day to day under various influences, so the motility may vary. This is especially true in the neuroses, where days of depression may well be accompanied by loss of muscle tone, only to be followed on succeeding days by exaggerated contractibility as a result of general irritability and hypertension. Single examinations under these circumstances may well lead to false notions of motility, and would only determine the state existant at the time and for the particular circumstances operating at the time. Hence, both atony and hypermotility may be diagnosed on succeeding days, in the same individual, which, in case only one test is made, would obviously lead to incorrect conclusions.

In endeavoring to determine the various effects of changing daily conditions upon the gastric motor activities, we encounter the same difficulties attending such determination in the secretory sphere. Why an emotional state should induce hyperchlorhydria in one individual and hypochlorhydria in another, is beyond our present knowledge. Corresponding enigmas of neurotic projection would be the very prevalent anorexia and the occasional bulimia, the frequent nervous diarrhea and the rare spastic constipation. Whatever explanations may be offered for these directly opposed conditions there can be no doubt that they follow some law of determinism. It is certainly reasonable to suppose, in this connection, that the inborn tendencies of muscular innervation must wield a very considerable influence in determining the immediate effects of the daily insults of modern life, both upon the secretion and motility of the stomach, and that the final outcome of chronic conditions will depend largely upon such tendencies.

To a certain extent the effects of insults to the stomach, from without or within the organism, can be explained by biological conceptions. They are defensive measures primarily intended to guard the general organism. The great frequency of certain forms must have been apparent to all observers. In the secretory province it is excessive secretion. It is pretty safe to assume that the great majority of secretory disturbances start as excesses, which in the course of time are modified by local conditions. Every danger to the organism arouses activity of function, not passivity, and excess of hypochloric acid in an insulted stomach is but a natural result of such danger. Normal stomachs must respond in this manner. In lowest organic life digestion is the only method of defense. Hence, this activity has been handed down through the ages. Certain neuroses are classified as "defense neuroses." The same may be applied to gastric conditions. They are defensive measures in the beginning.

The effect of daily influences may not be so apparent in the motor sphere, but they are present always. An emotional state will produce either hypoactivity or hyperactivity. Given the some conditions of habit, life, and environment, some individuals will respond to insult with atony, others with hypermotility. The only reason for this may lie in constitutional tendencies of muscular innervation. It is significant to note, however, that in their early stages most cases exhibit hypermotility. The combination of hyperacidity and hypermotility is the commonest combination of our clinics, and can be elicited in most cases, provided they are seen early enough. This is to be expected, for the biological reasons already stated. The two conditions run parallel for just so long as the hyperacidity does not constitute an active menace to digestion. From the moment this occurs, retardation of the chyme current begins.

That constitutional tendencies are influential in determining local abdominal development has long been known. In so far as it concerns hypotonic states, it has been fully described by Stiller as constitutional asthenia. To it is due much of the atony and most of the ptoses of the organs of digestion. In such individuals the stimuli carried to the alimentary musculature meet with indifferent response. These cases are theortically atonic long before evidence of the same manifests itself.

It is only within comparatively recent years that we have been brought to a realization of the importance of excessive muscular activity, of hypertonicity as such. As gastric hypermotility it has been recognized and described, and its clinical value has been largely connected with the causative relations of such secretory disturbances as hypersecretion. As a clinical entity, however, and as constitutional tendency it has not received much attention. This is partly due to the fact that as a local manifestation it is often only apparent during the early stage of a gastric affection, and can easily be overlooked. It is marked during the later stages by local adjustment and demands.

Hypertonicity, as a constitutional tendency, is quite as entitled to recognition as a predisposing factor in directing the development of local conditions as hypotonicity. In this respect it shows itself very early in life. It is the underlying cause of the various pyloric spastic states of infancy, which are but part of a general lack of inhibitory control. This tendency can well be carried into adult life, in which case the individual exhibits extreme irritability in all the motor areas. In the stomach this would show itself as hypermotility, and is usually associated with its counterpart in the secretory sphere, namely, hypersecretion. Both are due to the same constitutional influences. In such individuals any insult to the stomach will result in this combination for a certain length of time, at least, and it is fair to assume that most of the ordinary cases of chronic dyspepsia started in this manner. The duration of the combination is a matter of individual disposition.

An appreciation of this combination is of some practical value. When we consider that the ma-

jority of our chronic gastric diseases are the result of conditions of life rather than indiscretions, that they are localized in a peculiarly sensitive and naturally predisposed area, that they are determined many times by psychological as well as physiological conditions, and that the final result in each case is entirely a matter of individual disposition, it must be evident that a general conception of the average course of these cases must be of some import. It is often impossible for the general practitioner to make the necessary functional tests. Time for these may be lacking, disinclination may be present. Heretofore, under such circumstances, the usual attempt to guess has resulted in the diagnosis of atony. It has become an automatic conception. How far this can be erroneous may be judged from what has already been said, namely, that 75 per cent. of all secretory gastric disturbances are hyperacid; of these fully 90 per cent. have a decided neurotic basis; of these neurotic states the majority belong to the category of anxiety neuroses; that the effect of anxiety and fear is to induce hyperactivity in all bodily functions. If these conceptions are the correct ones, it is evident that they must have a very practical significance for those who have not the time or opportunity to subject their cases to the customary examinations.

It is to be presumed that the predisposing influences which produce these effects upon gastric function would produce similar effects upon the rest of the alimentary tract. If hyperchlorhydria, hypersecretion, and hypermotility may be expected in the stomach, the intestines should respond with diarrhea and hypersecretion. In a small proportion of cases this does occur for a certain period of time. In the majority of cases, however, the very conditions in the stomach militate against like conditions in the intestine. This may be accomplished by a decided pyloric reflex. The excessive secretion in the stomach may induce a compensating dryness of the intestinal contents. Again, the intestine presents a remoter automatism, does not stand in the same close psychic relation to the individual; hence, the forces of habit, environment, and emotion are not so effective and affective, are distributed over a much more extended area, and lose their power proportionately. Further, if the evil effects are present in the small intestine, they may be marked by the automatic arrangements and reservoir capacity of the large bowel. In this manner an alimentary tract which gives all evidence of hypermotility and hypersecretion at its beginning may exhibit hypomotility or constipation at its end. These diverse effects of external influences upon the two ends of the alimentary canal are facts of common observation. The motor function of the stomach is quite beyond help from the usual voluntary general motor activity. Bodily exercise plays very little part here. In the intestines active voluntary exercise aids the local activity. Hence, individuals who lead sedentary lives and suffer from chronic constipation in consequence, may exhibit contemporary gastric hypersecretion and hypermotility.

The importance of a comprehensive understanding of the subtler features of motor disturbances is evident. The course, duration, and final result, in each case, will be determined by these. Heretofore, the final results have largely engaged attention—atony, dilatation, displacement, obstruction. Clinically, comparatively little regard has been directed to ultimate reasons or predisposing tendencies. Psychic tone must now be recognized to the same extent as psychic secretion. It is half the battle. Most of the symptomatology of ordinary dyspepsia is due to it. Given perfect muscular action and the majority of the secretory anomalies would pass unrecognized. The stomach is extremely tolerant of chemical irritation. It rebels at once against changed conditions of internal pressure as a result of increased or diminished muscular tone. Thus, we may have sensations of fullness or emptiness, apparent gas formation, gnawing, rapid satiation or loss of appetite, painful sensations of any degree, depending upon extreme relaxation or extreme contraction. The inspiration for appetite would seem to depend upon the state of muscular contraction. In short, most of the disagreeable sensations, the little daily discomforts of the chronic dyspeptic, may be traced to either of these states.

These observations must have a practical bearing upon treatment, especially dietetic treatment. Most of us have had our illusions as to the possibility of influencing abnormal secretory conditions of the stomach, by carefully arranged and specific diets, dispelled. All such activity has resulted in failure. Extremes of secretion in the majority of cases have come to stay, and the best that we can do is to so arrange the diet as to meet the disturbed relationship between acidity and motility. Viewed in this light the physical properties of food, its distribution as to time of administration and quantity, acquire greater importance than its chemical composition. The chemistry of food has produced fads and fancies in dietetic management which may impress the patient, but which certainly cannot impress those with any knowledge of the mechanism of these cases. The indigestibility of certain foods remains the same whether the stomach be hypoacid or hyperacid. The simplest example would be that of hard or tough meat. This cannot be administered in achylia because there is no acid to attack it. It cannot be given in hypochlorhydria because of its prolonged sojourn in the stomach. This crude example will serve for all the rest. After a fair trial, extending over years, of the various specific diets for specific secretory conditions, I have come to the conclusion that practically the same chemical constitution of food applies to both hypo and hyperacid conditions in the common-sense management of the ordinary chronic dyspeptic, and that chemical affinities of food constituents to enzyme action as demonstrated *in vitro* in the laboratories, theoretically correct, are of very little value in practice. The general requirements of the average case will be met by fresh meats, roasted, broiled, or boiled, without fat or fiber, fish, only fresh, boiled, broiled, or baked, without made sauces, the avoidance of vegetables prone to fermentation, such as boiled or fried potatoes, onions, cabbage, cauliflower or turnips, simple desserts, such as rice or custard puddings, stewed fruits, and cream. Take these simple products, distribute them over the day at intervals and in quantities determined by local conditions of motility and general conditions of occupation, mental and physical strain, contribute so far as it is permissible to the general contentment of the individual, and we have the safest and sanest method of the dietetic management of the average case of chronic dyspepsia without special complications.

In order to do this intelligently it is necessary to have some data by which the motility, general

or local, may be judged and appreciated. Stiller has given us certain landmarks for the recognition of general hypotonic conditions. In the narrow intercostal angle, the floating tenth ribs, the general muscular relaxation and the tendency to ptosis of the various abdominal organs, we have fairly reliable indications of a general lack of muscular tone, which, in the majority of cases, in order to have produced such results, must have existed from early childhood and been inherent in the individual from birth. For the early recognition of hypertonic conditions we have no such reliable signs, but there are certain features of personality in each case, which can guide us in this respect. In those cases where it is possible to make the necessary local tests of motility, the tendencies can be determined for the stomach, at least. In the majority of cases, however, this cannot be done, and, as a matter of fact, is not done. In these cases the indications must come from general observation. This may reveal the history of convulsions, night horrors, tendency to exaggerated food regurgitation in early childhood or of more or less troublesome colic; in other words, an exaggerated irritability of all motor areas. Later in life this shows itself in general muscular tension and a tendency to localized muscular spasms. There is usually present a hyperactivity of the vasomotor apparatus as indicated by the marked dermographia, poor "distal circulation," or momentary vertiginous attacks. Palpitation is usually pronounced and all the reflexes are exaggerated. In the sensory sphere there exists increased affectivity. All organic response to the emotions is excessive. In most of these cases we have to deal with an anxiety neurosis of varying degree of intensity. There is a concealed propelling force somewhere, and this force projected into the motor areas will produce hyperactivity. These are but a few of the signs. Given these, however, and an environment, habits, or occupation to foster them, and it is pretty safe to assume that in the alimentary tract we will have to deal with hypermotility. This tendency may exist where local manifestations of the same are not pronounced. It may be masked by what in case of the gastric secretions, has been termed the weakness of overstimulation (überreizbare Schwäche, Riegel).

General considerations of the kind attempted in this paper are not popular in gastrology. They, as a rule, meet with an indifferent reception. The practical spirit of the times, here as elsewhere, demands specific methods to meet specific conditions. The stomach is looked upon as an animated machine, and the mechanical gastrologist is having his day. Every new device is greeted with enthusiasm and diseases of the stomach have been uprooted from the soil of medicine and transplanted into the field of exact physical science. One very respected authority in a review of the development of this branch, points out the general mechanical tendency, and goes so far as to predict that the day will come when every competent gastrologist will perforce have to be a surgeon. This certainly constitutes a very gloomy outlook for those whom Nature has not endowed with mechanical genius.

This instrumental exploitation was necessary, important, and unavoidable. It has served its purpose, for it has demonstrated the extent of its usefulness. It has shown that most of the attempts to approach the subject upon purely physical lines, with exceedingly few exceptions, have been futile, and the various contrivances devised for this purpose have retained only an historical interest. Most of them were conceived in a superficial spirit of pure utility, without due regard for physiological difficulty, and were doomed to failure at their very inception.

Careful experimental observation in any gastrological clinic will impress those who wish to see with the fact that there is a vast number of cases which cannot be reached by chemical reaction or mechanical device. We make our routine chemical and physical tests in these cases and stand bewildered before the results. They defy the test tube and the stomach tube. They are the *bête noir* of the gastrologists, and are usually sent about their business with a bottle of medicine and very vague directions as to diet. In these cases too assiduous gastrological application may do more harm than good. The local reactions are immaterial, for they are but accidental manifestations exhibited in this region through remote and predisposing tendencies. These are the most difficult cases with which we have to deal, for they shatter our ideals of technique and demand for their proper appreciation the broadest possible conception of the subject of gastrology in its scientific, psychological, and sociological aspects. These are cases not only for the gastrologist, but also for the psychologist and the educator. Treatment consists of a process of readjustment and reeducation. It demands patience, perseverance, and sympathy, qualities which are noticeably absent in those wedded to strict laboratory methods. Among these strict material causal relationship is demanded.

The time has come for a division of labor in gastrology. There is the purely mechanical side for those interested in concise local organic conditions. There is also the broader philosophical side, which, while not neglecting the advantage gained by knowledge of local conditions, uses these latter only to obtain a proper perspective of the whole.

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## HYGIENE FOR THE NORMAL CHILD.*

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The basis of a long life is hygienic living. The struggle for longevity is made difficult through the general ignorance of basic hygienic principles. Hygiene is now a word to conjure with though in the practical affairs of the world it is largely neglected.

Educational institutions are beginning to appreciate the value and importance of instruction in hygiene in the public schools. The stress of present methods has been placed upon securing a hygienic environment for abnormal children. Apparently a premium has been placed upon physical or mental abnormality as a prerequisite to securing sanitary environment or hygienic education. It is time that the rational process of education assumed that the education of the normal child after all represents the main educational problem. The hygienic training of the normal child should be the main element in hygienic education in order to accomplish the greatest good for the greatest number.

The purpose of teaching hygiene should be con-

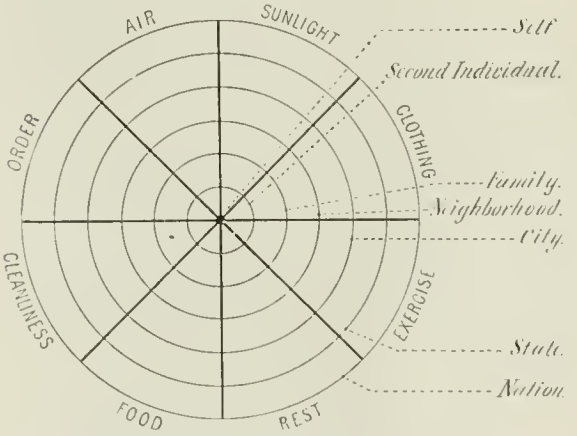
*Read before the Association for the Study of Exceptional Children, November, 1912.

sidered in dealing with methods and in making arrangements for a carefully adjusted curriculum. Instruction in hygiene possesses both a medical and educational value. The medical value is twofold; corrective and preventive. The educational phases of hygienic instruction are cultural, economic, and social.

It appears to be beyond controversion that hygiene for the normal children will affect the bulk of our school population, because 92 per cent. of our school population may be regarded as normal despite the existence of numerous physical defects. Judging from statistical studies, the normal child is not essentially a child without physical defects.

Obviously, in order to secure effective instruction in hygiene, it is essential to secure the instruction over the longest period of time that is practicable. This suggests that hygiene must be taught in the schools throughout during the period of compulsory school attendance.

Taking into consideration the medical inspection of school children of New York City during 1911, it is noteworthy that of 282,463 children examined only 75,369 children were found to be free from the physical defects sought by the medical inspectors. There were 7,913 children with malnutrition, 1,167 with tuberculous lymph nodes, 2,227 with




A diagrammatic scheme for teaching social hygiene.

heart disease, 798 with pulmonary diseases, 3,800 with skin diseases, 1,514 with orthopedic defects, 28,884 with defects of vision, 2,854 with defects of hearing, and 162,962 children with defective teeth. This marked evidence of the nature of the defects that exist in our school population indicates the type of hygienic instruction which is essential for the correction of such physical defects. For example, the dental defects suggest the necessity of teaching the hygiene of the teeth, careful mastication, the use of the tooth brush, the character of the foods which best develop teeth, the care of the primary teeth, the correction of dental deformities, and the relation of the teeth to malnutrition.

The tuberculous lymph nodes call for attention to the hygiene of environment, fresh air, ventilation, the danger of overcrowding, the spread of tuberculosis by direct contact, the germ theory of disease, the value of fresh air, open windows, open-air schools, and similar topics.

The cardiac defects call for the hygienic problems that must deal with circulation, as adequate exercises, proper methods of breathing, the dangers of overstrain, the advantages of physical education, the dangers of overindulgence in athletics.

The pulmonary diseases for corrective purposes require discussion of the hygienic themes dealing with correct methods of breathing, the care of sputum, the danger of infections by direct contact, the value of food, the importance of fresh air, the dangers of dust, the protection of sputa from flies and other insects that might serve to convey the disease to others.

The various skin diseases by inference demand instruction as to the hygienic value of bathing, the various kinds of baths and their general effects, the use and abuse of soaps, the importance and value of individual towels. For the contagious skin diseases the importance of protection of the lesions and the necessity of caring for soiled dressings becomes of paramount value, together with the importance of medical inspection and the advantages of quarantine and isolation.

The defects of vision arouse interest in teaching the proper position when studying, writing, reading, the importance of adequate light, the relation of vision to occupation, the dangers of contagious eye diseases, the relation of optical defects to the general health and the damages that occur to vision as a result of industrial accident and disease. These few random thoughts as to the hygienic precepts which are corrective in nature indicate the importance of hygienic instruction on the basis of the defects that have already been found in our public school children.

The preventive phases of hygiene are manifest in such problems as vaccination before entering school, the exclusion of children by reason of contagious diseases, the system of quarantine and isolation as maintained by the health department, the purpose and value of medical inspection in the school and visiting nurses in homes. The use of individual glasses, cups, pencils, towels, all have their practical prophylactic lessons. Similarly one may develop those sides of hygiene which deal with the care of animals and the possibilities of infection from them. The nature of home hygiene as related to the kitchen, the dining room, the bedroom involving the problems of air, light, food, rest, clothing, and bathing possesses a tremendously potential power for the prevention of physical defects and contagious diseases. It must be understood that the educability and the mental powers of the child are enhanced through such preventive hygienic instruction.

Industrial hygiene as related to the dusty trades, the dangers from metals, dust, and fume, the importance of safeguarding machinery, belts, gears, and saws, the proper adjustment of a man to his labor afford excellent fields of hygiene which may be reaped if the hygiene for the normal child is to be possessed of intrinsic value for his future welfare. It is unfair to permit the child to enter industrial life without a knowledge of the inherent hazards and the best methods of safeguarding his health and welfare during the years devoted to earning his bread and butter.

I might say that the school itself should give rise to some discussion and training. It is difficult, however, to give hygienic precepts in unsanitary school buildings, where most of the principles of hygiene as regards furniture, ventilation, and cleaning are very shamefully disregarded.

The cultural aspects of a course in hygiene may be summarized briefly as securing the relation of hygiene to the various other subjects in the curriculum. It is designed to reveal the interdependence of personal health and the communal health.

The dependence of national health upon laws relating to the sanitary control of cities and states points out a broad principle of citizenship which is altruistic in its conception. Civics and health are closely united. Geography presents many applications of hygienic principles in a consideration of the methods of housing, clothing, and feeding under various climatic conditions in the development of nations. The rise and fall of governments afford many valuable incidents evidencing such hygienic factors as alcoholism, malarial infections, and the contagious diseases. The story of the building of the Panama Canal contains in itself a large series of extraordinary lessons dealing with family, municipal, industrial, and State hygiene. The cultural phases of instruction thus correlated cannot be overestimated.

The economic aspect of such a broad hygienic horizon is reflected in the educational gains that are to be derived from such instruction. As a result of attention to hygiene, fewer absences will result; children will be capable of better education; their memories will be developed, and less retardation will result. It is needless to go into the actual economic gains resultant from an improvement in the mentality of the children and a consequent lessening in retardation.

The essence of educational purpose is preparation for citizenship. Social progress will result from making practical application of hygienic principles to the various affairs of everyday life. A course in hygiene should make children conscious of their civic duties and cultivate a spirit of social hygienic responsibility. One may readily understand the interrelation of environment and personal health. This involves teaching the facts relating to the protection of water supplies, sewage disposal, street planning, and the value and necessity of municipal institutions. Even such problems as parks, playgrounds, street lighting, smoke nuisances come naturally under the head of the subjects that might be given attention in public schools in order to develop intelligent ideas in the minds of future citizens. The social phases of hygiene are especially noteworthy and form an indispensable part of any course of instruction designed for the great body of children who comprise the elementary school population.

Bulletin No. 4, 1911, of the United States Bureau of Education, states: "There is an increasing feeling that this subject should be closely allied to the demands of modern life; particularly is this true in courses of study for city children who live in congested districts." The stress of the teaching should be in the application of hygienic principles rather than an exposition of the underlying theories. Such problems as deal with anatomy may well be relegated to the background. Hygiene should be practical and capable of demonstration and application. The teaching of anatomy possesses little essentially practical information for the child's everyday life. It is unimportant to know how many bones there are in the body or the size and shape of the stomach or the length or the texture of the intestines. It is important, however, to know how to stand and sit correctly; to know the value of mastication and the period of time required for digestion as related to bodily activities; and it is valuable to teach regularity of bowel habits. Wherefore I believe that the teaching of hygiene should precede anatomical studies or the teaching of anatomy should be incidental to those questions of hygiene with which they are correlated.

At the present time elementary school hygiene takes up about 340 minutes per week in our elementary school systems, while music, for example, is given 550 minutes. This serves to indicate how inadequate is our present system of hygienic instruction.

The purpose of education is to protect the State from all dangers arising from ignorance, disease, moral degeneracy, industrial retrogression, criminality, and civic unrighteousness.

Hygiene is the science that treats of the laws of health. Social hygiene is the science that treats of the laws of health, in the broadest sense, as related to the welfare of society as a whole. Social hygiene includes personal hygiene, family, municipal, state, and industrial hygiene.

The expression, "dry as bones," aptly describes much of the recent teaching of physiology and hygiene. In the mode of teaching the cart is placed before the horse. The average child will readily grasp and appreciate the facts that are essential to the correct mode of living while it lacks the interest so necessary to stimulate attention to the wired assortment of anatomical and physiological statements that are supposed to form an essential part of the school curriculum.

Considerable knowledge of the close harmony of the various parts of the body may be acquired in a normal manner through the study of hygiene. The appreciation of the reasons for the hygienic principles that tend to prolong life and to promote bodily health necessitates an understanding of the most practical facts in anatomy and physiology.

A careful analysis of the general subject of hygiene discloses the fact that it is based upon the consideration of a few fundamental topics that appear to be closely interrelated and that are the main factors in determining the physical and mental status of an individual or a community. Air, sunlight, clothing, exercise, rest, food cleanliness, and order form the basic subjects that in the aggregate, with adequate discussion, constitute hygiene.

Society as a whole is built up of various units, all of which may be resolved into individuals. In the consideration of a method of approaching the subject so as to secure the greatest effectiveness for the teacher or the scholar, a synthetic method is far more valuable than an analytic method. To grasp the relation of personal hygiene to the health of the family is a stepping stone to an intelligent conception of the relation of individual hygiene to the health of a group of families such as would constitute a neighborhood.

Further extension of the same principles of personal hygiene is involved in the understanding of the particular problems that are indissolubly connected with the city. The State, the nation, the world are three greater syntheses of a small social unit, the individual. Thus society may be regarded as a series of concentric circles, possessing the individual as a common center. The outermost circumference embraces all the other circles, though the area involved consists of an aggregate of individuals whose various combinations are delimited by the several lesser circumferences.

If one regards the few basic hygienic factors as centering in the individual and going therefrom in direct lines there appears at once a simple system for the instruction of the young or the old in the general scheme of social hygiene. A careful and intelligent study of the laws of hygiene as they affect the individual leads to an intelligent appreciа-

tion of the relation of hygiene to civilization and organized society.

In an outline to cover various grades of the public school it is essential to get the bulk of the hygienic material into the curriculum during the period of time for which the maximum number of children are at school. This makes it necessary to grade a course in hygiene so that the main elements are disposed of before the sixth grade. The continuation of the development of hygienic themes is to be found in the upper grades of the elementary school and might well be carried throughout the secondary schools.

It is unnecessary to go further in the development of our program. I believe the suggestion is clear without further elaboration. The plan in brief is to consider the evolution of hygiene in an elementary school upon the basis of the evolution of society and to so arrange the information to be given to the children that it is adapted to their age, grade, and experience, while at the same time the course is naturally developed from a single point of view instead of being thrown into a curriculum without plan or thought and too frequently left to the discretion of the teacher. The importance of correlating all the topics in hygiene to natural history, geography, civics and economics is not to be overestimated.

If public schools are to prepare for citizenship, it may be recognized that a citizen who is conscious of his hygienic duties and sanitary responsibilities is of far greater value to a community than one who is brought up in ignorance of these important topics. The main feature that we would call attention to is that hygiene is taught as a subject by itself and the physiology is drawn in as it were through a discussion of the hygienic problems, instead of appearing as a formal subject on the program. Anatomical details are entirely omitted inasmuch as to the child in the elementary school they are of no value theoretically or practically, save in so far as they have some relation to his everyday life. In the highest grades it might be desirable to take up the subjects of anatomy and physiology as formal studies, but in that case the perspective will be practically hygiene and the interest of the children in the subject will be enhanced, whereas under the present system it is merely a test of memory.

The social hygiene instruction practically is constituted from the educational content of the various subjects already on the curriculum. It is necessary to correlate history, civics, domestic science, physical education, geography, and similar subjects so that they all bring to social hygiene their proper betterment of the hygienic conditions of the community in which children grow to become citizens.

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## THE CLINICAL EXAMINATION OF THE FECES.

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The examination of the feces is in many respects as important from a diagnostic standpoint as is that of the urine, yet in this country we see very little of this work done. It is, as a rule, only the specialist who makes these examinations, the general practitioner considering his duty done when he gives a casual glance at a stool occasionally saved by the person nursing a bed-ridden patient. The excuse often given by physicians for not examining the feces is that esthetic patients object to bringing stools to the office. When the importance of this examination is explained to them, I have yet to find patients who will refuse to bring the small amount of stool necessary. Most physicians of the present day have facilities for the examination of urine, so that the addition of a very few reagents will suffice for making a simple stool examination which will often be a valuable aid to diagnosis.

The feces are most advantageously studied after special diets, but even on an ordinary diet much can often be learned. The stool of a healthy person on a general diet consists of (1) the indigestable remnants of the food, such as cellulose, bone, cartilage and elastic tissue, seeds, etc., (2) the unabsorbed portions of the food in varying amounts, (3) large numbers of bacteria, and (4) the secretions poured into the intestinal tract, viz., the bile, traces of pancreatic and intestinal secretions, and epithelial cells. Mucus is normal in moderate amount only. Abnormal elements are blood, pus, parasites and their eggs, and particles of connective tissue.

*Macroscopic Examination of Feces* (general diet).—*1. Consistency and Form:* Normal, firm, soft, and sausage shaped, or, after large quantities of fats or vegetables, mushy.

Liquid, diarrheal stools may be due, according to Klemperer, to (1) increased peristalsis from (*a*) nervous irritation, fright, fear; (*b*) chilling of the body; (*c*) the presence of irritating substances in the alimentary canal, such as ptomaines, fermenting foods, or insufficiently digested foods, as in achylia gastrica; (*d*) the presence of specific organisms causing inflammation of the bowel, such as the Shiga bacillus, the cholera vibrio, etc.; (*e*) ulcerations of the mucosa, from chronic catarrhal colitis, amebic dysentery, typhoid fever, tuberculosis, or syphilis; (*f*) the presence of toxic substances in the blood, as in uremia, and also in various infectious diseases and carcinoma. (2) The insufficient absorption of the chyme, due to degeneration of the bowel mucosa. Several of the above-mentioned causes also act in this way, but the particular causes of this condition are: (*a*) amyloid degeneration of the bowel mucosa, (*b*) stasis of the portal circulation (cirrhosis, etc.), or of the systemic circulation (uncompensated heart lesions). The stasis also leads to catarrh, placing it also in the other groups. (3) Exudation of fluids into the bowels, as in many inflammatory and infectious diseases. Diarrhea of short duration may be due to psychic disturbances, chilling of the body, and acute gastrointestinal catarrh. More chronic diarrhea occurs in portal stasis and cardiac insufficiency, in toxemias and bacteriemias, as in uremia and typhoid fever, in chronic enteritis, amebic, tuberculous, or syphilitic ulcers, and in amyloid degeneration. Tuberculosis is usually secondary to other tubercular foci, amyloid degeneration occurs in phthisis, syphilis, malaria, or chronic suppuration.

Dry, hard, constipated stools may result from (1) bad habit—insufficient exercise, improper diet (one containing an inadequate amount of residue and of water), or disregarding of the call of nature to stool; (2) intestinal stasis from atony, ptosis, or kinking of the bowel.

Goat stools, consisting of numerous small, round

masses of feces, are usually due to spasms of the bowel musculature.

Narrow, flattened, ribbon-like stools indicate obstruction, as in benign or malignant stenosis, in hypertrophied prostate, or any pressure on the large bowel from without.

II. *The Color.*—Normal, on a mixed diet, is brown, varying from a light brown on a diet rich in fats, to a dark brown or almost black after vegetables, berries, etc. Various medicinal substances cause changes in the color of the stool. Iron, manganese, bismuth, and lead give black stools; rhubarb, senna, and santonin, yellow, and calomel, greenish stools.

Clay-colored, fatty stools are seen in obstruction to the common bile-duct from any cause. Very fatty, light-colored stools occur in pancreatic disease.

Rice-water stools are typical of cholera, pea-soup stools are described as typical of typhoid fever.

Blood in the feces changes their color according to the origin of the blood. Swallowed blood, or blood from gastric or duodenal hemorrhage produces black, tarry stools; blood from hemorrhage in the large bowel is bright red and more or less mixed with the stool, according to the distance of the bleeding point from the anus. The stool of amebic dysentery is liquid, with many small particles of mucus stained grayish-red by blood, and containing some streaks of blood, whereas the feces in a case of rectal carcinoma or bleeding hemorrhoids may be merely streaked with blood on the surface.

Pus may be in streaks or mixed with the feces and gives a very foul odor to the stool.

Mucus may occur as small flecks of white translucent jelly, or as long, flat strips or cylinders of the same substance. Mucus is pathological in excess only. The cylinders and membranous pieces are seen in mucous colitis.

III. *Odor.*—The normal odor is due mainly to indol and skatol. Vegetable or milk diet produces very slight-smelling stools. Rapid passage through the large intestine, by preventing fermentation, as in cholera, produces more or less odorless stools.

A foul, putrid odor is due to proteid decomposition, which may result from too long retention in the bowel, or to the presence of excessive numbers of putrefactive organisms. The presence of blood or pus also causes a foul odor, and in the absence of bile, stools are particularly foul, because of the loss of the antiseptic action of the bile.

A butyric or acetic odor is present in diarrheal stools which are undergoing carbohydrate fermentation.

IV. *Abnormal macroscopic elements,* in addition to those already referred to, are: (1) Parasites—round worms, pin worms, and segments of tape worms; (2) gallstones and enteroliths; (3) undigested food-particles. These elements may be recognized by rubbing in a mortar or by diluting with distilled water and passing through a sieve.

*Microscopic Examination.*—On a general diet, microscopic examination of the feces is of definite value only in determining the presence of blood, pus, mucus, and of parasites and their eggs. The various forms of tape worm usually proclaim their presence by discharging segments in the feces, but their eggs are characteristic, and the microscope is often needed to identify the head. The microscopic examination is of particular value in the presence of round worms, which may be passed spontaneously only at long intervals, but whose eggs are almost constantly being discharged.

The *Entameba coli,* the specific cause of tropical dysentery, is found in stools which have been kept warm, specimens of the stool to be examined being placed on a heated slide. The amebæ die rapidly when exposed to cold, and are then difficult to distinguish from leucocytes. They are distinguished when alive by their ameboid movements and by their frequently enclosing red blood-cells in their bodies.

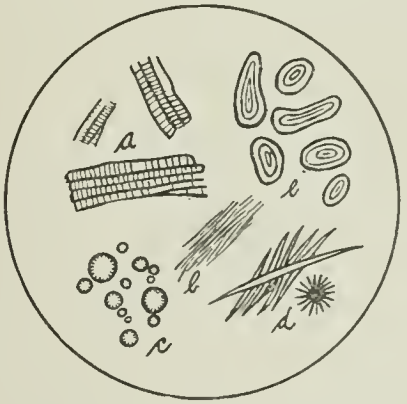
The microscopic examination will be further discussed under the next heading, the findings being of more value after a regular prescribed diet.

*The Schmidt Test Diet* is a form of diet used to get a standard on which to base the findings in examination of stools. An initial cathartic is given, and then the diet is followed for three days, a soapsuds enema being given every day if necessary. The diet is as follows: *Breakfast:* 1 pint of milk, or, in case of diarrhea, 1 pint of cocoa, made of 1 tablespoonful of cocoa, ½ tablespoonful of sugar, a small cup of milk, and water to 1 pint. *In forenoon:* One-half of the following gruel: 3 ounces of oatmeal, boiled with water and a little salt. To this add 1 pint of milk, 2 eggs, 1 tablespoonful of butter. *Lunch:* ¼ pound chopped beef, salted to taste, and superficially fried in 1 tablespoonful of butter, so that it remains raw inside; 1 large plate of mashed potatoes in which a small cup of milk and ½ tablespoonful of butter have been stirred. *In afternoon:* As at breakfast, milk or cocoa. *Supper:* Remainder of gruel. In addition to this there are to be taken, through the day, 12 zwieback crackers.

The light-colored stool of the third day is to be saved for examination.

I. *Macroscopic Examination.*—(1) Consistency, color, odor, and admixtures are observed as described under general examination. (2) Some of the stool is rubbed up with distilled water in a mortar, which will disclose calcareous particles. Some of this liquid mixture is then poured out on a black plate, when we may distinguish remnants of meat and connective tissue, mucus, parasites, gallstones, etc. The various suspicious particles are then removed and placed on slides and examined microscopically.

II. *Microscopic Examination* of the slides prepared as above, diluted with a little normal salt solution if too thick. We must distinguish: (Fig. 1)




(1) Muscle-fibers (*a*) normally present in moderate amount. If in large masses, grouped together, they indicate insufficient stomach digestion, the gastric juice being essentially the agent dissolving the connective tissue between the fibers. If in

large numbers, isolated, they indicate insufficient digestion in the small intestine. (2) Connective tissue fibers (*b*)—large numbers have same significance as large numbers of muscle-fibers. (3) Fat-globules (*c*) and needles, and fatty acid crystals (*d*), normally present in small amount are increased in pancreatic disease, common bile-duct obstruction and intestinal catarrh. (4) Potato-cells (free starch granules) (*e*) and clostridia (a fermentation product of the cellulose starch envelope) are best distinguished by putting a drop of Lugol's solution at the edge of the cover-glass and allowing it to work its way slowly under it, the starch and clostridia being stained blue by the iodine. Their presence always indicates intestinal catarrh. (5) Eggs of parasites—described above. (6) Bacteria. The study of the bacteria of the intestinal canal is intensely interesting, but cannot be discussed in an article of this scope. They are studied by simple staining and by cultural methods. Bassler has demonstrated the value of introducing cultures of the normal intestinal bacteria into the bowel in certain intestinal diseases. (7) Blood, pus, mucus, and portions of malignant tissue have a significance of their own, as described above. (8) Plant-cells occur in many forms, and are often a cause of confusion. They are usually symmetrical in form, and have a glistening, highly refractive enclosing membrane.

III. *Chemical Examination.* — (1) *Reaction:* Normal, with litmus paper, weakly acid or alkaline. Excessively acid reaction indicates carbohydrate fermentation, excessively alkaline reaction, proteid fermentation. The fumes from a portion of feces boiled in a test-tube will color litmus paper red when butyric or acetic acid is present—carbohydrate fermentation.

(2) *Schmidt's Sublimate Test.*—A portion of the feces the size of a pea is rubbed with a few drops of a concentrated solution of bichloride of mercury (2 to 5 per cent.), put in a covered watch-crystal, and set aside at room temperature. At the end of six to twenty-four hours the production of a red color is normal, indicating the presence of normal bile-pigment. A green color, even of microscopic portions, showing the presence of bilirubin, is abnormal, indicating the presence of intestinal catarrh. Absence of any color indicates common bile-duct obstruction.

(3) *Fermentation Test.*—A portion of well-stirred feces the size of a walnut is put into a fermentation tube in an incubator. If after twenty-four hours more than one-third of the water has been displaced and the reaction is strongly acid, an abnormal degree of carbohydrate fermentation in the intestine is indicated.

*A Meat-free Diet,* meaning a diet entirely free from blood, that is, total abstinence from meat, meat-soups, meat extracts, etc., for three days, is necessary before a test for *occult blood* in the feces is done. Neither should any gastric or esophageal instrumentation, such as passage of a stomach tube or bougie, be done for three days, to avoid even a slight bleeding from these causes. After ruling out the possibility of swallowed blood and blood from hemorrhoids, fissure or fistula in ano, we may conclude that the finding of occult blood in the stool is due to gastric or intestinal bleeding. Frequently blood is found in stools the color of which would occasion no suspicion of its presence. In slight bleeding from a gastric or duodenal ulcer, the stools may be light in color, but occult blood may be found.

Three tests for occult blood are in general use—the guaiac, aloin, and benzidin tests. The benzidin test requires considerable care to obtain accurate results, and is considered by some authorities to be too delicate, disclosing the presence of even the faint trace of blood which might result from the trauma of the food in the intestinal canal. The guaiac and aloin tests are done as follows: A portion of feces the size of a pea is rubbed up with a few drops of glacial acetic acid and placed in a test-tube. A few c.c. of ether are then poured on top. After gentle agitation for a few minutes, the acetic acid-ether extract is decanted into another test-tube, and a few drops of a freshly made alcoholic solution of guaiac or aloin added, together with a few drops of old oil of turpentine. The mixture is shaken thoroughly, and after a few minutes a blue color is produced in the guaiac test, a red color in the aloin, if occult blood be present. The blue color of the positive guaiac test appears more rapidly than does the deep red of the aloin test, but the latter is much more permanent.

*Tests for Ferments.*—The diagnosis of pancreatic affections, which has in recent years aroused considerable interest, is often greatly aided by certain tests for the presence of the pancreatic ferments in the stools. An absence or diminution of trypsin or amylopsin in the stools would point to pancreatic insufficiency or obstruction. The tests for these ferments in the stools require considerable time and skill, and their value is as yet in some doubt, so that their consideration in a paper of this scope would hardly be advisable.

This brief outline for the clinical examination of feces will, I hope, have some effect in interesting and aiding my readers in the study of an excretion which is often overlooked and often would reveal a long-suffering patient's true condition, resulting in a clear prognosis and rational, efficient treatment, and redounding to the benefit of the patient and the credit of the physician.

889 Union Street.

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**Action of the X-Rays Upon the Eosinophiles.**—C. C. Aubertin states that the irradiation of the hemopoietic organs in a person presenting a pronounced degree of eosinophilia causes an immediate leucocytosis that lasts for several hours. This is not, as in the normal subject, a pure polynucleosis; it consists in an increase of the pre-existing eosinophilia to which is added an increase in the number of neutrophiles.—*La Presse Médicale.*

**Urethral Folliculitis.**—Georges Luys states that the inflammation of the glands of Littré in the course of a gonorrhea, if more or less pronounced, is called a folliculitis. This complication is very common and the abuse of injections appears to be the most frequent cause. The treatment consists in slow and methodical dilatation of the penile urethra, followed by direct endoscopic treatment. This is superior to external surgical excision. Inspection of the urethral mucosa reveals the site of the lesions which may be evacuated similarly to ordinary furuncles by incision and pressure. This method obviates the production of a urinary fistula, and the cure is complete and permanent.—*La Clinique.*

**Prognostic Significance of the Atropine Reaction in Cardiac Diseases.**—J. E. Talley notes that the atropine reaction in the normal heart is probably from 30 to 40. A reaction of 20 or less, in a heart not recently subjected to exhausting disease, points to a degenerative process in the cardiac tissue which makes the outlook for improvement under treatment unpromising. Cases of auricular fibrillation with responses normal or above are promising subjects for treatment. Two atropine reactions in cases of auricular fibrillation, one before and one on full digitalis, enable us to determine whether the vagal or the cardiac tissue factor is the greater. The patients with a large cardiac tissue factor are the ones who usually are sufficiently improved by treatment to return to their occupations.—*American Journal of the Medical Sciences.*

# MEDICAL RECORD.

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## AN IMMUNITY REACTION IN PELLAGRA.

WITH the increase in the work on pellagra has come apparently a diminution in the number and enthusiasm of the adherents of the zeistic theory of the etiology of the disease. The antizeists, however, are not agreed among themselves but have advanced several hypotheses which are in accord only in that they all list pellagra among the infectious diseases. Tizzoni has supported a so-called "infectious dietetic" theory and has described a streptobacillus which he thinks may cause pellagra in individuals subjected to certain dietetic conditions. In the course of this research he discovered a reaction in the blood of pellagrins which so far he has found to be pathognomonic. This reaction (*Centralbl. f. Bakt.*, vol. 67, p. 175) is brought about by the presence in the blood of the pellagrous patient of an antihemolysin which suppresses the hemolytic powers of the normal heterolysins.

The presence of this substance is demonstrated in the following manner: To a tube containing about 10 c.c. of ordinary bouillon, such as is used for culture media, is added 0.2 to 0.3 c.c. of serum from the patient and about two drops of fresh defibrinated rabbit's blood, the whole being mixed and placed in an incubator. In such a tube containing serum from an individual who is healthy or suffering from a disease other than pellagra, the red cells settle slowly and without agglutination, and after 24 hours there will be seen slight but definite hemolysis. If, however, the serum is from a patient suffering with pellagra, the cells sediment rapidly, forming a rather tenacious mass, and no hemolysis occurs even after ten days. This reaction takes place even if complement be added to the mixture.

Tizzoni claims that "the existence of an immunity reaction in the blood speaks for the infectious nature of the disease" and intends to investigate the hemolytic power of his streptobacillus. This claim is not above criticism. He asks us to believe that the stimulus of a bacterial lysin results in the production of an antilysin which is not specific. He apparently has not investigated the presence of an antihemolysin in the blood of patients infected with other hemolytic organisms. The presence, coincidently, of agglutinins is not explained. Tizzoni's past work, however, has been of a very high grade and it will be important and quite interesting as well to see what conclusions he finally arrives at after further investigation of this subject.

## NEW ASPECTS OF PANCREATIC ORGANOTHERAPY.

SEVERAL years ago Brieger announced that pancreatin, even when given by the mouth, will lower the abnormally high antitryptic index of the blood which characterizes certain severe diseases—cancer, tuberculosis and pernicious anemia. In a very recent article entitled "Combination Therapy of Pernicious Anemia" (*Deutsche medizinische Wochenschrift*, November 12), he announces three cases of success in treating pernicious anemia with a combination of pancreatin and arsenic over long periods of time. One patient has seemingly been kept alive for three years while in the other two cases life was greatly prolonged and made endurable. The same author is so impressed with the power of pancreatin to lower the antitryptic index in tuberculosis that he predicts as the eventual treatment of that disease a combination of tuberculin with pancreatin. His clinical results in this sphere of activity will be published in time. He recommends no attempt to protect pancreatin from the digestive fluids, merely giving the powder on the end of a knife blade.

One week after Brieger's latest announcement, Strubell made the definite statement that pancreatin tablets increase the opsonic index to the staphylococcus. This may explain some of the benefit to the nutrition of the diabetic which often follows the use of pancreatin. The number of drugs which increase the opsonic index to various bacteria is not large. Arsenic and thyreoidin (in small doses only) are two of these.

Ever since the introduction of pancreatin into medicine it has been known as a substitutive specific in total failure of the external secretion of the pancreas. This condition is so infrequent and requires such pains to demonstrate its existence beyond doubt (including metabolic studies) that the remarkable nature of the cure has escaped general attention. It is, however, every whit as convincing as the thyreoidin cures in athyreosis which are now so common. Bramwell's case belongs in this category as his patient was also a pseudocretin. The total absence of a natural pancreatic secretion was shown among other procedures by Sahli's iodoform test. The latter also proved that the pancreatin swallowed reached the intestine in active form. Several years of treatment restored to the patient the stature to which he was entitled as part of the removal of his infantilism which was believed to have been due to the suppressed pancreatic activity.

The future may witness the routine use of pancreatin in tuberculosis, in affections of the internal secretions (in addition to diabetes), and in many chronic affections with lowered opsonic index, in the latter case in conjunction with thyreoidin and arsenic.

## THE TEETH AND PULMONARY TUBERCULOSIS.

It is now well recognized that the condition of the teeth exerts a profound influence upon the health. The state of the teeth is, to a large extent, a monitor. If the mouth is in an aseptic condition then, as a rule, disease, functional or organic, is absent. while if oral sepsis does prevail, health is seldom satisfactory. This fact is at the present time fully appreciated in civilized lands and the physical well-being of a nation may be more or less correctly gauged by the mouths of its individual members. The teeth in relation to pulmonary tuberculosis is a subject which has not been widely discussed and yet it is more than probable that the condition of the teeth, gums, and mouth generally has a distinct bearing upon the incidence and progress of that disease.

In the *Medical Press and Circular,* January 8, 1912, is an article by George Thomson, in which he deals with this question of teeth and tuberculosis. Mr. Thomson is a dental surgeon and therefore, perhaps, may be regarded as a not altogether unprejudiced observer. He premises his statements by announcing that he holds the view that the prevention of dental caries will do more, directly and indirectly, towards the prevention of tuberculosis than any other measure that has yet been conceived. In considering the mouth as an area of infection it may be well to remind ourselves of certain anatomical and physiological facts as well as some of the fundamental principles with which he have to deal: 1. The mouth is lined with mucous membrane, which is continuous with the alimentary tract and forms part of it. 2. Mucous membranes are much less resistant to pathogenic bacteria than the skin. 3. Mucous surfaces near the external surface of the body possess a stronger power of resistance to certain bacteria than others. 4. For the first six months of life the mucous membrane of the mouth is continuous and intact but after that period hard structures pierce through its external surface and continue to do so at varying intervals, until adult life. There is nothing analogous to this in any other part of the body. 5. The mucosa of the mouth has certain specific functions, *e.g.* secretion of mucus which undergoes alkaline decomposition in the presence of mouth organisms, and is to be regarded as a protective agent to the teeth. 6. The mouth contains certain secreting glands, furnishing large quantities of saliva of variable quality and quantity having antiseptic as well as digestive properties and cleansing values. 7. Among civilized races from the earliest period the mouth has seldom been found to be normal and healthy, but is almost invariably affected by certain diseases, stomatitis, pyorrhea, alveolaris, or periodental disease, and dental caries, the latter by far the most prevalent of all.

Thomson argues that whether tuberculosis is due to bacterial invasion and symbiotic associations, or whether the disease may be looked upon as a general depression of vital resistances and a condition of malnutrition, the fact is the same, that dirty conditions favor the multiplication of adverse foes, and in the first case food and soil are provided for bacteria, and in the other case vital resistances are lowered by stagnation areas and infective foci. He claims that of all dirty conditions which tend to arouse the latent tuberculosis or fan its smouldering embers into flame none is so dangerous as the septic mouth and teeth.

Many writers have, of late, laid stress upon the menace of a dirty mouth, and it seems more than plausible to contend that it is a factor of the first importance in inciting and spreading pulmonary tuberculosis. In the campaign which is being so actively waged against tuberculosis in most countries, the condition of the mouth must be always considered. Although Mr. Thomson's views that the question of the extirpation of tuberculosis is mainly a question of sound teeth and a clean mouth may be deemed somewhat unduly optimistic, still few will be found to dispute the assertion that an aseptic state of the mouth is a great asset so far as preservation of health is concerned, and it may be that it confers a certain degree of immunity to pulmonary tuberculosis.

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### Statistics of Cholelithiasis.

The subject of the incidence of chronic conditions of endemic prevalence is always of great interest, but it is on relatively rare occasions that physicians go extensively into the necessary statistical research so that certain characteristics become firmly established. Among the chronic maladies of universal interest is certainly cholelithiasis, and very recently Courvoisier of Basle has summed up the gallstone incidence in over 16,000 autopsies which cover a period of several decades (*Berliner klinische Wochenschrift,* December 23, 1912). The material reaches back to the opening of the Basle Pathological Institute, while Courvoisier's service alone extends back for twenty years. The entire figures show a constant 10 per cent. incidence in cadaver finds. The frequency increases directly with the age. Thus every twelfth male adult and every fourth female adult show stones at autopsy. This ratio of 3 or 4 women to 1 man which obtains in middle life is greatly reduced as the male adult becomes an old man. Thus between 50 and 60 one man in seven is affected, between 60 and 70 one in five, and between 70 and 80 one in four; so that in time age will offset sex. Above the age of 80 one man or woman in three presents gallstones. Basle represents a region in which the disease is very common, much more so than in Berne for example. Attempts to account for these differences are for the most part unsuccessful, as are likewise those which seek to connect the malady with other chronic affections of wide prevalence, like arteriosclerosis.

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### Nonspecificity of Diseases Due to Anomalies of Internal Secretion.

The opinion constantly gains ground that, owing to the number and correlation of the endocrinic glands, we are no longer safe in associating special syndromes with failure or overproduction of special hormones. It is readily seen that several of these glands may be implicated together in a common disease process; that when one gland fails another may overact, or may also fail; and so on. In the

discussion of a paper of this scope by Goldstein, to which we have previously directed attention, which is to be found in the *Deutsche medizinische Wochenschrift*, January 2, Borchardt expresses his opinion that all disease of the endocrinic glands is evidence of the status thymico-lymphaticus. Increased size of the thymus is evidence of this status, as is hypoplasia of the genitals. Castration of an adult woman never leads to any disturbances of internal secretion in organs other than the ovaries. Diabetes occurs in nearly one-half of all cases of acromegaly but cannot therefore be ascribed to defective or increased internal secretion of the hypophysis. Zander mentioned the fact that in many monsters with defective development of the fore-brain (hemicephali, syncephali) there is always a hypoplasia of the adrenals. The association of intracranial hypoplasia, tumors, etc., with adiposity and hypoplasia of the genitals, is susceptible of a variety of explanations which may or may not involve speculations as to the hypophysis and pineal glands.

## News of the Week.

**Health of the Canal Zone.**—During the month of November, 1912, the total number of deaths from all causes among employees was 48, of which 32 were due to disease and 16 to violence, making an annual average death rate of 10.96 per thousand. This is a slight increase over the same month of 1911, when the rate was 9.75. The death rate among the entire civil population in Panama, Colon, and the Canal Zone was also increased during the month, being 25.46 in 1912, and 20.29 in 1911. As usual, no cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

**Public Health Commission.**—The first meeting of the new public health commission of New York, recently appointed by Governor Sulzer, was held in New York City on January 20 at the United Charities Building, when testimony as to the necessity for reform legislation and as to the present conduct of the State Health Department was heard. It was pointed out that the present laws were inadequate in that they did not define the powers of the local health officers nor the powers of the State on matters of health, and also that the salaries paid in the department were entirely inadequate and, especially in the smaller towns, were too small to permit the securing of properly trained men for the work. Prof. C. E. A. Winslow of the College of the City of New York stated what he considered to be necessary to effect a diminution in the death rate, and Dr. Baldwin of the commission submitted a plan for the reorganization of the State department.

**Osteopaths Have Hearing.**—The New York City Board of Health on January 21 gave a hearing to the osteopaths who are urging the amendment of Section 163A of the Sanitary Code, which provided that all certificates of death must be signed by a doctor of medicine. The osteopaths contend that this section, which prevents them, of course, from signing the certificates, is a discrimination against them not substantiated by the attitude of the State in permitting osteopaths to practise. Representatives of the New York and Queens County Medical Societies appeared to protest against the change.

**The Quarantine Question.**—The conduct of the New York Quarantine Station has again been the subject of official investigation, this time by the Commission of Inquiry appointed by Governor Sulzer. The commission is divided two to one on the question of transferring the station to Federal control, the chairman being in accord with the medical profession of the State in favoring this control, the others opposing it and holding quite illogically that the direct control of the State is necessary because the volume of immigration is so great and the dangers of disease so menacing. To cover the cost of maintaining the station it is suggested that provision be made for increasing the fees charged for examination and fumigation of ships.

**Pills by the Million.**—Testifying before the Committee on Public Medicine in London recently, Sir Joseph Beecham stated that his firm sold a million pills a day, the approximate weight of those sold every year being fifty tons. He also stated that he expended a sum equal to $500,000 each year in advertising the pills.

**Plague in Adrianople.**—A dispatch received at Belgrade on January 20 reported the appearance of the plague in the Turkish garrison at Adrianople.

**Sir George Turner,** who was included in the list of King George's New Year honors, received thereby a recognition of his services as medical officer at Cape Colony, Africa. During his twelve years' service there he completed the work of stamping out the rinderpest begun by Koch, supervised the military hospitals during the Boer War, and devoted much time to work among the lepers in the asylum at Pretoria, and to a study of the disease. He is said now to have become himself a leper and to have been living in retirement in England, though he intends to return soon to South Africa to continue his work among the afflicted people of the leper colony.

**Another Ambulance Accident.**—In the triple collision of an ambulance from the Polyclinic Hospital, a taxicab, and a brewery truck, at Fifty-seventh street and Eighth avenue, early in the morning of January 22, the ambulance surgeon, Dr. G. W. Keil, and the chauffeur and extra man on the ambulance were all seriously injured.

**The Friedmann Tuberculosis Serum.**—Dr. Friedrich Friedmann, whose declaration that he had discovered a cure for tuberculosis has received world-wide attention, decided recently that it was useless to attempt longer to maintain his policy of secrecy, and on January 24 announced his intention of handing to the chief of the public health department of Berlin a tube of his serum with the request that the Government designate physicians to cooperate with him in giving the cure an exhaustive trial. It is now said, however, that he has postponed this publication of his remedy because a New York business man, interested in the promised cure on account of illness in his own family, has offered Dr. Friedmann one million dollars if he will come to this country and cure 95 out of 100 patients placed in his charge. If Dr. Friedmann cannot come to America the offer calls for the treatment of 100 patients with his serum at Saranac Lake by Dr. Lawrason Brown, the cure of 95 to be followed by the payment of a reward. The attempts of Dr. Friedmann to place himself upon a sound financial basis as a result of his promised cure have caused much unfavorable criticism.

**Courses in Tropical Medicine.**—The Harvard Medical School has recently established a new

department of tropical medicine, with Dr. Richard Pearson Strong, director of the Government biological laboratory at Manila, as its head. The department will give courses in the study and treatment of diseases of the tropics to graduates in medicine, as well as to the undergraduate students in the school. It starts auspiciously with a guarantee of sufficient funds for five years. Dr. Strong is a graduate of Yale University and of the Johns Hopkins Medical School, and has been professor of tropical medicine in the Philippine Medical School.

**Scarlet Fever Epidemic.**—Because of the prevalence of scarlet fever the schools at Sea Cliff, L. I., have been ordered closed for two weeks, the public library having been closed some days previously.

**Deaths of 1912.**—During the past year the death rate in New York City was 14.6 per 1,000 of population, the lowest recorded in the State's history. The total number of deaths was 5,000 less than in 1911. There were large decreases in the number of deaths due to typhoid fever and tuberculosis, as compared with the figures of preceding years, the total in the latter case falling from 14,200 in 1911 to 13,600 in 1912; and a low record for deaths due to diphtheria was made. The death rate from cancer, however, was slightly increased. Of the less usual diseases, one death was ascribed to leprosy, two to pellagra, five to rabies, five to glanders, and 100 to tetanus. Infantile paralysis caused nearly two hundred deaths.

**Death of Brother Dutton.**—News was received here recently of the death at Molokai of Ira Barnes Dutton, who for nearly twenty-seven years had served among the Hawaiian lepers. Brother Dutton succeeded Father Damien in his work in the leper settlement.

**X-Ray Injuries.**—In Chicago on January 19 a verdict for $10,000 was awarded to a woman patient against a practitioner of that city, the plaintiff declaring that her face had been disfigured and her eyesight impaired by burns due to the use of X-rays to remove a mole without proper protection of the rest of the skin. The case will be appealed by the physician.

Director Simon of the Radiographic Institute at Geneva, Switzerland, must, it is reported, undergo amputation of his left hand owing to injuries by the X-rays. His colleague, Dr. Leroyer, is said to have lost two fingers also.

**Saving Infants.**—That 300,000 babies die every year in the United States and that half of them might be saved by proper care is stated in the first publication of the Children's Bureau at Washington The bureau calls for proper birth registration laws in all the States, which would make it possible to trace all infants and give assistance through physicians, visiting nurses, and social workers to those born under adverse conditions. A model registration law has been drafted.

**To Reorganize Medical School.**—Pending a reorganization of the Medical Department of the University of Minnesota, every member of the faculty of the school on January 15 handed his resignation to Dean Wesbrook to be presented to the president of the University when the plans are completed. On the same day the Board of Regents of the university appointed a committee consisting of Dean Wesbrook; Dr. Charles L. Green, Minneapolis; Dr. L. D. Wilson, Rochester; Dr. E. L. Tuohy, Duluth; Dr. Theodore W. Bratrud, Warren, and President Vincent of the University, to prepare plans for the reorganization. In its growth the medical department has absorbed the St. Paul Medical College, the Minnesota Hospital College, and the Medical Department of Hamline University, and had thus developed a faculty much too large for the best work. The move toward reorganization is heartily supported by the members of the present faculty, who will continue their work as outlined through the remainder of the year or until the new scheme is ready to be put into effect.

**Vaccination Not Desired.**—In Philadelphia three persons were recently placed under police guard in one of the large apartment houses because of their refusal to submit to vaccination by the health authorities, and a quarantine of eighteen days was ordered. Two cases of smallpox in a negro settlement in the center of the city led to the vaccination of 6,000 people within three days, the patients being removed to the Municipal Hospital.

**To Honor Dr. Freer.**—A model of a bust and tablet to be erected at the University of Manila in memory of the late Dr. Freer has recently been completed in Berlin. The tablet is of stone with relief figures in bronze, representing "Science Aiding Humanity and Future Generations." Science is symbolized by a woman holding out a healing draft to Humanity, represented by a mother with Posterity, a sick child, in her arms. This acts as a background for a life-size bust of Dr. Freer. The work is executed by Miss Kühne Beveridge, an American sculptor.

**Dr. Kunitzer and the County Medical Society.**—At the meeting of the Medical Society of the County of New York on Monday of this week a vote was taken on the motion to expel Dr. Robert Kunitzer of the Sydenham Hospital on the charge of having permitted the falsification of the case records of the hospital by Dr. Ewald. The attendance at the meeting was very large and the discussion was protracted into the morning hours; the final vote was short of the necessary three-quarters, so Dr. Kunitzer retains his membership in the County and State Societies.

**Smuggling Drugs to Convicts.**—A new use for picture cards has been developed recently, a discovery of the fact being made accidentally by one of the keepers at Sing Sing prison, who, while sorting the prison mail, dropped a weight upon one of the heavily embossed cards much favored by the friends of the convicts. A fine white powder emerged from under the embossed figures which proved to be cocaine, and an investigation of other cards of the same type revealed the same condition. It is believed that this find clears up the mystery of how the inmates of prisons have been able to secure drugs, such as opium, morphine, and cocaine, in spite of the vigilance of the officials, and that it will not be possible for a time at least to shut off the supply.

**Down with Mosquitos.**—A conference on the subject of mosquito prevention in and about New York is shortly to be called by Commissioner of Health Lederle, whose requests for appropriations to carry on the work of exterminating mosquitos in all the boroughs of the city were refused by the Board of Estimate. The residents of Westchester County had prepared to do considerable work in draining swamps, etc., but as many of the swamps extend southward into New York City no good results will be achieved unless the city does its share. It is hoped that some plan of interesting the land owners to clean up may be evolved.

**Gifts to Charities.**—The Brockton Hospital of

Brockton, Mass., receives a bequest of $40,000 by the will of the late Horace Williams Howard of that city, who made a further bequest of $185,000 for the establishment in Brockton of a home for aged men.

**The Harvey Society.**—The postponed lecture by Major F. F. Russell on "The Prevention of Typhoid Fever" will be given at the New York Academy of Medicine on Saturday, February 8.

**Hospital Gift Withdrawn.**—The Sinking Fund Commission of New York decided recently to reconsider its transfer to the Hahnemann Hospital of title to the block at Park avenue and Sixty-eighth street for $5,000. This transfer of the city's rights worth several hundred thousand dollars was made four years ago, the understanding being that the hospital would care for the poor. The commission believes that this agreement has not been kept, and the mayor has appointed a committee of three to investigate.

**The North Carolina Board of Medical Examiners.**—The date of meeting of the North Carolina Medical Society having been changed, it becomes necessary to change the date of meeting of the Board of Medical Examiners from June 10 to June 3, 1913.

**Philadelphia Medical Club.**—On the evening of January 17 the club was honored by a visit from President Taft, who delivered an address to the members. Officers for the ensuing year have been elected as follows: *President,* Dr. James C. Wilson; *Vice-Presidents,* Dr. Wilmer Krusen and Dr. McCluney Radcliffe; *Secretary,* Dr. William S. Wray; *Treasurer,* Dr. Lewis H. Adler, Jr.

**New York Neurological Society.**—The following officers were elected for the year 1913: *President,* Dr. Smith Ely Jelliffe; *First Vice-President,* Dr. E. G. Zabriskie; *Second Vice-President,* Dr. E. W. Scripture; *Corresponding Secretary,* Dr. J. Ramsay Hunt; *Recording Secretary,* Dr. C. E. Atwood; *Councilors,* Drs. Dana, Starr, Sachs, Fraenkel, Kennedy.

**The Guild of St. Luke.**—At a meeting of this society of physicians of the Catholic faith, to be held at 120 West Fifty-ninth Street on Thursday, February 6, at 8.30 P. M., the subject for discussion will be: "How Much of Eugenics Is Scientific?" Those interested may obtain cards of invitation by addressing the president, Dr. Charles E. Nammack, 42 East Twenty-ninth Street, or the secretary, Dr. James J. Walsh, 110 West Seventy-fourth Street.

**Federation of State Medical Boards.**—The annual meeting of the Federation will be held at the Congress Hotel, Chicago, on Tuesday, February 25, 1913, under the presidency of Dr. Arthur H. Brown of New Orleans. Particulars may be obtained from Dr. George H. Matson, secretary-treasurer, State House, Columbus, Ohio. An invitation to attend the meeting is extended to all members of State medical examining and licensing boards, to teachers in medical schools, to delegates to the Council on Medical Education of the American Medical Association, and to the Association of American Colleges.

**A Society for the Advancement of Clinical Study** has recently been organized in New York City, the purpose of which is to maintain a bureau of information which will furnish to resident and visiting physicians definite information regarding the clinical facilities of the hospitals and laboratories of the greater city. For this purpose a bulletin board has been installed at the Academy of Medicine, 19 West 43rd Street, in charge of a special clerk who will be on duty between the hours of nine and six to answer all telephone inquiries (Telephone 974 Bryant). The bulletin board will consist of two sections, on one of which will be posted month by month, the regular clinics, medical and surgical, and also laboratory demonstrations, all of which are held at stated hours. The second section will include full announcements of daily operations and demonstrations of cases both medical and surgical, which as far as possible will be announced on the day preceding their performance. It is believed that these facilities will afford physicians, who are interested in observing particular operations and operators or clinicians, an opportunity to obtain the desired end with the least trouble. It is hoped that by this means the large and unexcelled clinical facilities of New York City will be made more accessible to those who may desire to make use of them.

**The DeRoaldes Prize.**—A prize consisting of a gold medal is offered by the American Laryngological Association for the best essay upon some subject relating to laryngology and rhinology, preferably containing suggestions of practical value resulting from original work. The competition is open to all practitioners in regular standing in the United States and Canada. The essays must be typewritten in English and be accompanied by a sealed envelope containing the author's name and the title of the paper. They must be sent to the secretary, Dr. Harmon Smith, 44 West Forty-ninth street, New York, before May 1, 1913.

**Obituary Notes.**—Dr. Ernest Palmer of Brooklyn, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1879, a member of the American Medical Association, the New York State and Kings County Medical Societies, the Associated Physicians of Long Island, the Society of the Alumni of St. Mary's Hospital, and the Brooklyn Gynecological Society, consulting gynecologist to St. John's, the Kings County, and the Jewish Hospitals, Brooklyn, and clinical professor of gynecology and attending surgeon at the Long Island College Hospital, Brooklyn, died at his home on January 20, aged 63 years.

Dr. Frank L. McKee of Wilkes-Barre, Penn., a graduate of the Bellevue Hospital Medical College, New York, in 1882, and a member of the American Medical Association and the Pennsylvania State and Luzerne County Medical Societies, died at his home from appendicitis, on January 13, aged 52 years.

Surgeon Francis W. Mead of the United States Public Health and Marine Hospital Service, in charge of the United States Marine Hospital at Vineyard Haven, Mass., a graduate of the Georgetown University School of Medicine, Washington, in 1858, and a member of the American Medical Association and the Massachusetts State and Dukes County Medical Societies, died at the hospital on January 18, aged 74 years.

Dr. Willard H. Titus of Oshkosh, Wis., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1873, a member of the Wisconsin State and Winnebago County Medical Societies, and an expert in Indian ethnology, died at his home on January 8, aged 65 years.

Dr. Richard C. Allen of Philadelphia, Penn., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1868, died at his home on January 19, aged 84 years.

## Correspondence.

### OXYGEN IN THE TOXEMIA OF PREGNANCY.

To the Editor of the Medical Record:

Sir:—In your issue of January 25 Dr. S. J. Druskin, referring to my article on oxygen in the toxemia of pregnancy, says: "The injection of oxygen under the breasts in eclampsia is not altogether new or unknown." This is true. Not only was it so used by Wertheim, as Dr. Druskin recalls, but it has also been used by Dr. Espy M. Williams of Patterson, La., and (in cattle) by Healy and Castle of the Kentucky Agricultural Experiment Station. In all these cases, however, the oxygen was used in order to isolate or destroy some hypothetical toxin generated in the breast.

On the other hand, the experiments which I conducted at the City Hospital were made, not upon cases of eclampsia, but upon cases of pre-eclamptic toxemia. They were not based upon any theories about the mammary secretion, but, as I expressly stated, upon the definite hypothesis that suboxidation plays a large part in the etiology of the so-called toxemia of pregnancy. It was to the systematic and continued use of oxygen in toxemia with the idea of preventing eclampsia, and not to the occasional or empirical use of oxygen in eclampsia proper, that I referred, when I said, "I have found no reference in English, French, or German, to the use of oxygen in the toxemia of pregnancy." The distinction is perfectly clear.

In addition to the free use of oxygen either by inhalation or subcutaneously, I would advise the use of iron, calcium oxide, and other oxygen carriers; and of alkalies to combat the acidosis that is so constant an accompaniment of incomplete oxidation. It is interesting to note that these agents have been found useful on different grounds and by different observers. Dr. John A. McGlinn of Philadelphia, in a recent article, emphasizes the importance of keeping toxemic patients out-of-doors, and states that he has obtained good results by having his patient sleep in the open air, following the lines of the modern treatment of pneumonia. This, too, is significant.

In pregnanc· the whole organism cries out for oxygen. Who has not noticed the subjective dyspnea so common even in cases approximately normal? What observant physician is unfamiliar with the bad effect of stuffy and ill-ventilated rooms, and with the relief afforded by the open window?

What can be done in the treatment of eclampsia proper? Healy and Castle have reduced the mortality in cattle to a very low figure, but it remains to be shown that the disease is as malignant as in the human subject. Dr. Williams treated his case on the theory that the toxin is a mammary product, but shrewdly observes that it is unlikely that we can shut off the blood supply of the breast by the injection of oxygen, and thinks that the effect may be due "to a direct action of the oxygen on the toxins themselves." He notes that although the distention of the parts was extreme, extending even up to the clavicles, the absorption of the gas was very rapid.

Without doubt the preventive treatment of eclampsia will always be more satisfactory than the curative, but even here the oxygen treatment is rational.

George P. Shears, M.D.
203 West One Hundred and Third Street.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE CRISIS—MEETINGS, ETC.—HEART DISEASE IN CHILDREN—KEITH ON NAPOLEON'S DEATH AND ALLEGED SPECIMENS—OBITUARY.

London, January 10, 1913.

London practitioners have spoken. On Tuesday about 1,500 met and denounced the "unfair methods of intimidation" used for "coercing" them to go on the insurance panels. Probably never before has such a high pitch of feeling been expressed by the profession. Our late medical lord mayor, Sir T. B. Crosby, an octogenarian practitioner, presided, feeling in doing so he was as he had been all his life loyal to his profession. Much more gratifying would it have been, he said, if he had been privileged to give thanks for a beneficial act which medical men would gladly work to complete success. The resolution of protest was then moved by Mr. E. B. Turner, who voiced in a vigorous address the indignation of the assembly, which reponded with round after round of cheers. The campaign for the Act had, he said, been carried on by deliberate lies and false statistics served up to the press morning, noon, and night. Then came downright intimidation and threats of ruin, with the Chancellor of the Exchequer rushing about like a malign comet, wagging behind him a daily lengthening tail of threats, contradictory assertions, repudiated utterances and broken promises in his determination to force a free profession into compulsory service. To carry his point he organized, to use a sporting term, "a rot" in the profession so as to set up a stampede on to the panels. Suppose the Chancellor told a body of laborers that in future they must work under government rules and at government prices or interlopers would be brought in to ruin them. Would they not hear the tramp of thousands on the march to the parks and the government tumbling down to come to terms and pass a short act through all its stages in a day or two to give them all their demands. But laborers votes counted.

Mr. Macnamara seconded the resolution, saying he would take no orders from moral lepers, who degraded the name of statesmen and begging any who had joined to recant. Mr. McAdam Eccles supported and said they were fighting for free choice of a doctor and for the honor of the profession. Mr. Boomhill and Mr. Montgomery Smith followed with caustic denunciation of the Chancellor's despotism and bribery of voters. Then amid loud cheering the resolution was carried without a single dissentient.

Every day since this meeting has brought some change in the position. The government went on steadily with their plans boasting that the panels were being rapidly filled. On the opposition side the danger of giving was urged. We were assured that for London 975 men had given their names, and yesterday there would be more than 1,000. Opponents said, "Wait and see." This morning the number agreed is 759, but the disappointment is diminished as it is declared 100 more who live on the border are willing to come in but have not yet decided in which district they will serve. These, and the commissioners boast others, too, can be brought in and, of course, will take the patients of the residents, as has happened in the country where this threat has been effectual; *e.g.* at Wisbeach only two men offered and the committee gave notice to the others that unless they joined in forty-

eight hours those two would be requested to engage assistants enough to work the locality. In another town a deputation of the profession desirous of coming to an arrangement were told "there is the Act —it will be worked. You may either work it yourselves or be ruined." The insured person may also have a say if "free choice between doctor and patient" as promised is admitted. Many have, therefore, applied to "contract out," as permitted by the Act. But to this move the commissioners reply that every applicant must satisfy the committee that there are special circumstances why he should have free choice and that the doctor he chooses must engage to fill up the same reports and certificates as those on the panel. A great number have signed the request to contract out, but it is doubtful whether they will put further pressure on the government. Several meetings are being held and others are arranged for all the coming week.

A number of practitioners who at first went on the panels to see, as one said to me, "how the cat would jump," have resigned. To meet this the officials have circulated a warning that they are liable for breach of contract. The natural reply is, prove your damages and fancy a government prosecuting any one for resigning an office.

The London Committeee of the B. M. A. has issued the long-talked-of alternative scheme. It is of interest as the opposition in the metropolis is being carried on more actively than in most other parts, and the association maintains that it will continue to oppose in every way the introduction of new men or of assistants to coerce the profession.

A discussion on the treatment of Heart Disease in Children at the Royal Society of Medicine was of special interest to me. It was opened by D. E. Cautley, who spoke of modern methods of treatment as a survival and improvement of the past consequent on the recognition of myocarditis and its results. In childhood the heart was a growing organ and age to some extent modified treatment, but happily degenerative changes were extremely rare. Functional disorders were comparatively unimportant, but in many of the cases so diagnosed the cause was myocarditis—a sequel of some infective disease. Treatment was chiefly by rest, the duration of which must be proportionate to the degree of dilatation and differing somewhat in pericarditis, endocarditis, and myocarditis, being most prolonged in the last named. Massage, active, and passive exercises, Nauheim methods and electrotherapy had their place later. Of older methods in acute inflammations Dr. Cautley found blistering distinctly beneficial in pericarditis, but of doubtful value in the other cases. Bleeding required caution in childhood. Mercury was useful if the liver became congested. The pill of digitalis, squill, and mercury was a favorite combination which had not been improved. The bowels should in all cases be kept free by mild laxatives and edema or backward pressure called for purgation. Diuretics, too, were required, aided by dry-cupping over the kidneys. In edematous cases liquids and salts should be limited. Of digitalis the tincture has rather displaced the once favorite infusion and many prefer the alkaloid preparations; others diuretin and theocin sodium acetate. Vasodilators were not needed. Morphia, aconite, and belladonna might sometimes be useful. It is still unsettled what may be the value of salicylates or iodides. Paracentesis and drainage as well as cardiectasis were also considered.

Dr. James Mackenzie pointed out that the significance of murmurs and irregularities was often mistaken. These phenomena might be compatible with healthy hearts. The cause of a functional murmur was not the cause of heart failure. This failure was always due to impairment of the cardiac muscle. The signs of the efficiency of this muscle had not been sufficiently considered and therefore the meaning of phenomena which were quite normal had been misunderstood and so not seldom taken as indications for treatment.

Sir Jas. Goodhart could not express his own opinion on the subject better than Dr. Mackenzie had done, and for forty years he had been examining these cases. On one point he did not agree with Dr. Cantley, who did not seem to think functional disease in childhood common, whereas he himself saw more cases so diagnosed in whom nothing was the matter than of those in whom there was something. Bad cases were recognized at once, but many borderland cases were thrown into the limbo of diseased hearts though there was no real disease. He had seen a child condemned to bed for weeks though nothing was the matter. The apex might have beaten in a little different position, but that varied enormously in children. A busy general practitioner was apt to be too hurried over his diagnosis and should ponder over it. Treatment was a matter of rest and the crux was how long, for it was possible to take too much—and even in definite advanced disease, too. One condition interested him much—mitral stenosis, rare in childhood, but common at 16, 18, or 20; essentially a disease of females and not congenital; or rheumatic endocardial condition leading slowly to thickening. It might be compared with urethral stricture which, before becoming serious, had been in existence a good while, the passage being kept open by the urinary stream. So in this stenosis the blood passing through the valvular apertures maintained the passage.

Dr. John Hay regarded heart disease as an infective process, probably streptococcic, beginning in childhood and leading to sclerosis and other effects in adults. Therefore prophylaxis is needed in the active stage and also in the slumbering infection with exacerbations later on. The idea that infection entered by the nasopharynx was spreading and measures directed to this should be resorted to as far as possible in every child that showed any sign of rheumatism.

Dr. Walter Carr's experience was mostly in hospitals where functional cases were not common, but acute rheumatic disease was. Rest for these was first and foremost, proportioned to the degree of carditis—more prolonged if pericarditis was also present, and most if there were nodules. In any rheumatic trouble it was safe to assume myocarditis was present. He had often seen relapses of cardiac rheumatism with pericarditis in patients while taking salicylate of soda, and mentioned one in which a boy of nine was taking 50 grains per diem and was kept at rest. In convalescence iron often disagreed and seemed to him to favor relapse. Digitalis he had never known do good. Cod liver oil not diluted or combined, was a good food ½ to 1 dram two or three times a day, and children took it well.

Dr. Sutherland protested against treatment of children in whom all activity of heart disease had passed off, leaving no symptoms. Such were often seen in the public schools and treatment supposed

to be required, but it was not and it was only desirable to prevent further rheumatic infection or strain of the heart. If a child went about its own way it would not strain its heart, but it might if compelled to do certain exercises.

Dr. Alex. Morison thought the dread of opium in childhood was too great. There was in these cases a constitutional excitement—dilated pupils, and capillaries, quick pulse—a sort of pathological belladonnaism, or physiological antidote to opium.

In cardiac infantilism one saw patients of 15 or 16 with a development of 10 or 11, very anemic and puberty delayed. He gave them thyroid as he had seen the gland atrophied post mortem and thought the laboring heart might have its activity lessened, as the gland had become exhausted. His experience of cardiectasis had not been rosy, but the principle he admitted seemed right.

Dr. Cautley in reply said that some speakers had based their remarks on adolescents rather than children. True functional heart disease in children he found distinctly uncommon. He did not mean mere irregularities. Many cases thought functional had a myocardial origin, mostly resulting from infection and must be treated by prolonged rest. No competent practitioner would say a girl had organic disease merely because she fainted.

Prof. Arthur Keith, Conservator of the Museum at the Royal College of Surgeons, has studied carefully the specimens preserved there and alleged to have been obtained from the body of Napoleon. There has been much controversy as to their genuineness in the past and it is natural to consider the opinion of such an able observer as Keith whatever one may have thought previously. One cannot forget, however, that these cancerous specimens have been pronounced not to be so by such micropathologists as Eve and Shattock. Professor Keith, in his second Hunterian lecture, gave the result of his studies of the specimens and their history and considered portions of the controversy they have provoked. They came into the possession of the college through Sir Astley Cooper, who was living at the time of the death of the captive of St. Helena. Sir Astley received them from Dr. Barry O'Meara, Napoleon's physician, a post also held by Dr. Antomarchi, who was questioned about inheritance of cancer by the Emperor, whose father died of cancer of the stomach. From his study of these specimens Mr. Keith concludes they were actually derived from Napoleon's body and throw a new light on the drama of St. Helena. They consist of small intestine with outgrowths, and though slight documents to shed light on the old vexed questions, the lecturer believes they have the advantage of other available documents inasmuch as they are documents for all time. Sir James Paget, when revising the college catalogue in 1883, described the outgrowths on the specimens as rounded plaques of cancer. Sir Astley Cooper's entry of the specimens in the MS. Catalogue of his museum is "Incipient Fungus in the Glands of the Intestine. Napoleon, Barry O'Meara to Astley Cooper." Professor Keith said his faith in the genuineness of the specimens rested on his belief that Sir A. Cooper would not have left the statement on the label unless convinced of its truth. His collection was acquired by the R.C.S. in 1841, when it was reported to the council that Sir Astley had only attached the briefest descriptions to his specimens and that full histories could only be obtained by careful search through his private papers—a search never carried out. Professor Keith thinks it is clear that Napoleon suffered from endemic fever and his liver was affected. In the course of his illness cancer supervened, but the symptoms were masked by the earlier disease. The case might well have baffled the most able physicians until the terminal illness in 1821 when the stomach was suspected to be the site of the trouble. It was still an open question whether fever or cancer was the cause of death, but it is certain that in St. Helena or elsewhere cancer would have eventually killed the great Emperor.

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# Progress of Medical Science.

**Boston Medical and Surgical Journal.**

*January* 16, 1913.

1. Antitoxin Administration. W. H. Park.
2. The Importance of Venereal Disease. J. H. Cunningham.
3. The Relation of Accident and Injury to Pulmonary Tuberculosis from a Medico-Legal Point of View. J. B. Hawes, 2d, and Arthur Drinkwater.
4. Chronic Focal Suppuration of the Head with General Symptoms, Especially in Adults. F. P. Emerson.
5. Fracture of the Fifth Metatarsal Bone by Inversion of the Foot. W. P. Coues.
6. Brain Tumor. Operation. Autopsy. Findings. F. D. Bond and A. H. Peabody.

**1. Antitoxin Administration.**—W. H. Park states that in Boston the tendency is, in light cases of diphtheria, to give from 6,000 to 10,000 units, repeating if improvement does not follow; in moderate cases 10,000 units repeated every six or eight hours; in bad cases from 20,000 units to 30,000 units, repeated every six to eight hours, until a total of 200,000 or 300,000, or even 400,000 units have been given. As to the method of injection, it is noted that the subcutaneous method is the rule, and the size of the individual is disregarded. Koplik, in New York, advises a maximum of 20,000 units. In Germany Baginsky gives a maximum of about 6,000 units, and Feer of Heidelberg, 10,000. Hutinel of Paris regulates dose by age, and Ker of Edinburgh, by the intensity of the disease. From all the observations one is impressed with the belief that amounts of antitoxin beyond 25,000 units in a child, and 50,000 in an adult, are absolutely unnecessary and useless; and that an initial dose of 10,000 in a child and 20,000 in an adult is probably sufficient for the whole course of the disease. The object is to get enough antitoxin into the blood to neutralize any toxin present there, so that no further toxin is able to pass out to the tissue cells. Very few really appreciate the fact that what is given subcutaneously as a single injection is being absorbed for days, and that the accumulation of antitoxin in the blood reaches its highest point from the second to the fifth day. It should be recognized that the size of the patient is one of the important factors in deciding the dose of antitoxin. The author is of the opinion that one should give in the first dose all that is required for the entire disease. Intravenous injection is urged not only in cases of malignant diphtheria but also in all cases of tetanus.

**4. Chronic Focal Suppurations in the Head.**—F. P. Emerson points out that every infection must have some portal of entry. Bacteria do not invade normal mucous surfaces. The path of infection being by way of the lymphatics, it is obvious that one should examine carefully the glands and lymph follicles through or from which the infection must come; also the teeth and sinuses of the head. This is more important in adults than in early life in the case of the tonsillar tissue, as its resistance is lowered on account of the fact that it is the seat of a chronic hyperplasia. Also the blind closure of the crypts favors the formation of enclosed abscesses during the process of retrograde metamorphosis, when the resistance to infection

is lessened. A small amount of tonsil tissue entirely concealed behind the anterior pillar may be but the shell of such an abscess. On the other hand, it may lie deep in the space between the superior constrictor and the tonsil with only a small sinus communicating with the surface, so that the focal reaction is only manifest in the deep cervical lymphatics and pus may not be detected without grasping the glandular tissue with strong forceps.

## New York Medical Journal.

*January* 18, 1913.

1. Superficial Metastatic Growths in the Diagnosis of Deep Seated Malignant Tumors. W. W. Babcock.
2. Edema of the Lids. G. W. Vandegrift.
3. Bismuth Paste in the Ear and Nose. G. M. Coates.
4. An Hermaphrodite? W. S. Mills.
5. The Treatment of Pellagra. G. M. Niles.
6. Rhinology and Laryngology in General Practice. W. Ferguson.
7. Incipient Tuberculosis of the Larynx. R. Petit.
8. Normal Human Blood Serum in the Treatment of Hemorrhagic Diseases of Infants and Children. J. E. Welch.
9. Eye Strain in Children. E. W. Shipman.
10. The Origin of Medical Journalism. V. Greco.

1. **Superficial Metastatic Growths.**—W. W. Babcock believes that when superficial or subcutaneous nodules appear in patients who are suspected of harboring a malignant tumor, often the most direct way in which the diagnosis may be ascertained is by cocainizing the area and, by a very slight operation, removing a part or all of the nodule and subjecting it to microscopical examination. In this way one avoids the dangers that may attend the removal of tissue from the primary growth, and may prove the condition of inoperable metastasis. Obviously, superficial secondary growths are not invariably present, yet if careful search is made, superficial metastatic manifestations will be found more frequently than is suspected.

2. **Edema of the Lids.**—G. W. Vandegrift notes that edema of the lids may be inflammatory or non-inflammatory, due to conditions in the lids themselves, in the eyeball and annexa, or in the general system. Inflammatory edema may be due to: (1) Lid abscess which arises from local infection, injury, or erysipelas. (2) Chronic dacryocystitis, which, when acute, will produce an edema commensurate with the violence of infection. (3) Hordeolum or stye, an infection of a hair follicle. This is the most frequent cause of edema of the lids. (4) An acutely inflamed chalazion or Meibomian cyst produces a slight edema. (5) Periostitis of the margin of the orbit, most frequently of syphilitic origin, may produce edema of the lids. This may also be caused (6) by a furuncle. Other conditions causing edema are (7) erysipelas; (8) insect stings; (9) inflammations of the conjunctiva, iris, and ciliary body; (10) irritations of the cornea; (11) violent inflammations of the interior of the eyeball, of Tenon's capsule, abscess or tumor of the orbit, and thrombosis or aneurysm of the cavernous sinus. (12) Tarsitis, a manifestation of tertiary syphilis, is always accompanied by inflammatory swelling over the tarsal cartilage, usually of the upper lids. (13) Dermatitis from rhus toxicodendron produces usually a marked swelling when the lids are involved. Noninflammatory edema may be due to: (1) Angioneurosis, a condition that produces a transient but marked edema. (2) General circulatory disturbances as from kidney lesions, causing an edema usually of the lower lids, noticeable in the mornings. (4) Catarrhal inflammation of the accessory nasal sinuses. Certain conditions simulate edema, such as tumors of the lid, for example, dermoid cyst of the outer angle of the orbital margin. Palpation establishes the diagnosis. Emphysema may appear to be an edema pure and simple. It is due to displacement of air into the tissues of the lids from the nasal cavities through a fracture of the inner wall of the orbit, caused by a violent cough, sneeze, or blowing of the nose soon after the injury has been sustained.

7. **Cauterization in Tuberculosis of the Larynx.**—R. Pettit points out that the advantages of submucous cauterization over the old method of removal of tuberculous infiltrations by curettage, are that the former is easier to perform, requiring no more skill than that necessary in making any topical application to the larynx, and is of much shorter operation, being completed in a fraction of a minute. There is neither bleeding, in itself dangerous, nor aspiration of blood, nor coughing or struggling, nor exhaustion, symptoms seen so frequently to attend the use of the double curette; consequently the postoperative disturbance is less. In the majority of cases the curettement of an infiltrate merely means the conversion of a sluggish granuloma into a more or less progressive tuberculous ulcer.

## Journal of the American Medical Association.

*January* 18, 1913.

1. The Diagnosis of Gall-Stone Lodged in the Common Duct. W. F. Cheney.
2. Anomalous Internal Carotid Artery and Its Clinical Significance in Operations on Tonsils. P. G. Skillern, Jr.
3. Persistent Hyaloid Artery. L. M. Bowes.
4. Reports of Uterine Malformations. E. M. Prince.
5. Family Pernicious Anemia. With Report of Cases. C. J. Bartlett.
6. Correction of Nasal Deformities, Particularly External Lateral Deflections and Depressions with Obstructing Deviations of the Septum. G. M. Marshall.
7. A Light-Carrier with Lens and a Rheostat for Urethroscopy. V. C. Pedersen.
8. History of a Typhoid Carrier. D. H. Currie and F. H. McKeon.
9. An Apparatus for the Injection and Lavage of the Pelves of the Kidneys and the Ureters. G. J. Thomas.
10. The Results of Two Hundred Chromoureteroscopies Employing Indigocarmine as a Functional Kidney Test. B. A. Thomas.
11. Practical Value of Blood Cryoscopy for the Determination of Renal Function. M. Krotoszyner and G. W. Hartman.
12. A Study of the Accuracy of the Phenolsulphonephthalein Test for Renal Function. J. T. Geraghty.
13. Quarantine in the Maritime Cities of the United States. By the Public Health, Hospital and Budget Committee of the New York Academy of Medicine.
14. Epidemic Poliomyelitis. Fourteenth Note: Passive Human Carriage of the Virus of Poliomyelitis. S. Flexner, P. F. Clark and F. R. Fraser.
15. Double Infection with the Human and Bovine Types of Bacillus Tuberculosis. P. A. Lewis.
16. Myositis Ossificans Traumatica. W. E. Stevens.

10. **Chromoureteroscopy.**—B. H. Thomas reports the results obtained in 200 cases in which chromoureteroscopy was employed with indigocarmine as a functional test. The author prefers this test to that by phenolsulphonephthalein as not requiring ureteral catheterization and thus doing away with possible infection and the difficulties due to that method. He summarizes his results as follows: (1) Chromoureteroscopy based on the employment of indigocarmine is the most valuable single test for renal sufficiency or insufficiency because it is the most practical, affording the same diagnostic advantages as the functional tests dependent on bilateral synchronous ureteral catheterization, the technique and determination of which are tedious and complicated. (2) The test is particularly applicable in surgical affections of the kidneys and ureters, and almost invariably suffices to establish the prognosis and diagnosis, if, when the condition arises, it is supplemented by ureteral catheterization, uranalysis, collargol injection, or skiagram. (3) Comparative observations of the onset and intensity of the color elimination have never failed to determine the functional sufficiency of the supposedly normal twin organ, in view of operative intervention. (4) It is of no value in movable kidney, in the absence of ureteral kink or hydronephrosis, pyelitis, essential hematuria, early tuberculosis, and certain other forms of nephritis and small tumors not involving the major portion of the parenchyma, although ureteroscopy itself is not without value in these conditions. (5) It is of value in the differential diagnosis of hemorrhagic and chronic interstitial nephritis from other types of the disease. (6) Supplemented by ureteral catheterization and the *x*-ray it will enable one to diagnose practically every case of renal and ureteral calculus. (7) In hydronephrosis, pyonephrosis, pyelonephritis, ureteral occlusion and chronic tuberculosis of the kidneys involving approximately one-third of the parenchyma, chromoureteroscopy is of exceptional merit. (8) In simple hypertrophy and carcinoma

of the prostate causing chronic retention of urine and *vis a tergo* urinary presure on the renal parenchyma, the indigocarmine test promises to be of value in the differentiation of operable and nonoperable cases. (9) Chromoureteroscopy is also of great value in the differential diagnosis of obscure abdominal conditions; also in facilitating difficult ureteral catheterization. (10) The duration and quantity of indigo excretion are of interest scientifically and also of some diagnostic importance, but as a routine are not practicable of determination and are unnecessary of notation. (11) Indigocarmine is eliminated from functionally sufficient kidneys as a dark blue in from three to twenty minutes and as a light blue not later than fifteen minutes. In 90.1 per cent. of kidneys it appears either as a dark or light blue in fifteen minutes; in 61.1 per cent. it is observed in ten minutes. (12) If the indigo does not appear at the expiration of fifteen minutes (light blue) or twenty minutes (dark blue) one may perceive in this fact evidence of serious insufficiency of the renal function. (13) If the elimination of the dye does not occur at all the respective kidney or ureter is gravely diseased. (14) The intensity of the color reaction depends to some extent on the concentration of urine but largely on the individual excretory power of the organ. (15) A surgically diseased kidney eliminates the dye less intensely than its normal twin organ, or not at all. (16) The test is very simple, and by alternate observations of the two ureteral orifices differences between the two kidneys are readily, accurately and speedily noted.

11. **Blood Cryoscopy and Renal Function.**—M. Krotoszyner and G. W. Hartman discuss the value of blood cryoscopy as a test of renal function. Since so much stress is laid by Kümmel on accuracy and technique, they describe their method in detail and give brief description of the clinical features of interest in the patients subjected to the tests. Altogether 132 determinations were made on sixty-nine persons and the authors feel justified in formulating the following conclusions: (1) Cryoscopy of blood, done correctly, gives a point of about 0.656 C. below zero in the presence of healthy kidneys. (2) This point is not materially altered through unilateral kidney lesions, provided that the other organ is anatomically and functionally intact. (3) A lowering of the blood-point to 0.52 and lower is generally found in anemic or cachectic individuals with otherwise healthy kidneys. (4) A rise to 0.60 and above should be interpreted as a danger signal of derangement of renal function and should indicate caution against radical operative procedures. (5) In the hands of a critical observer cryoscopy of blood is a valuable test for the estimation of absolute or total renal function, especially when estimation of relative function, through ureteral catheterization, is not feasible.

15. **Poliomyelitis Carriers.**—S. Flexner, P. F. Clark, F. R. Fraser have found that the washings from the nasopharynx of the parents of a child affected with poliomyelitis, neither of whom showed any symptoms of illness and who were evidently not suffering from poliomyelitis, contained the virus of epidemic poliomyelitis. The result described brings indubitable evidence of the occurrence of the virus of the disease in the nasopharynx of healthy persons who have been in close contact with an acute case of poliomyelitis, and affords an experimental basis for the belief, based on clinical observation, of the occurrence of passive human carriers of the infection.

## The Lancet.

*January* 11, 1913.

1. Insect Porters of Bacterial Infection. C. J. Martin.
2. Two Cases of Colloid Tumor of the Third Ventricle, Causing Death. A. J. Hall.
3. A Case of Pneumonotomy for Foreign Body. T. H. Kellock. With Notes by C. R. C. Lyster and R. E. Apperly.
4. Cecotomy for the Removal of a Hairpin Impacted in the Ascending Colon. L. McGavin.
5. Myeloid Leukæmia in a Child with Blood Picture of So-called Megaloblastic Degeneration. C. H. Treadgold.
6. On the Alleged Diagnostic Value of the Provocative Injection of Old Tuberculin in Suspected "Closed Pulmonary Tuberculosis." E. E. A. T. Rigg.

1. **Insect Porters of Bacterial Infection.**—C. J. Martin reviews the experimental evidence that plague is easily transmitted from animal to animal by rat fleas. In the presence of fleas, the epizootic, if started, varies as regards severity and rate of progress with the number of fleas present and the season of the year, whereas all attempts to induce epizootics in the absence of fleas have failed. Under natural conditions (experiments in plague houses, etc.) an animal can be protected from infection by any simple procedure which will exclude the visits of fleas. The only discovered infection in plague houses resides in plague-infected fleas. The rat fleas *X. cheopis* and *Ceratophyllus fasciatus* readily bite man. The conclusions drawn from animal experiments, when applied to the problem of the spread of plague amongst human beings, afford a reasonable interpretation of every cardinal epidemiological fact. As regards the transmission of typhus by lice it is pointed out that the infection of typhus circulates in the blood during and for some time after the febrile period. It is taken up by lice when they feed upon a patient and may be transmitted to monkeys by them. As in the case of fleas and plague, a considerable number of insects, ten or more, is required to give a reasonable chance of infection to a monkey, an animal which is probably much less sensitive than man. There is reason to believe that the virus proliferates inside the insect, for in order to produce infection by means of blood taken from a patient, the volume required is much larger than could possibly be contained in the lice employed. The infectivity of lice endures seven days, and seems to be greater some days after feeding on a typhus patient than immediately, but the number of experiments so far performed is not adequate to establish this. There is reason to believe that the infection may be transmissible to a second generation of lice. The present limitation of outbreaks of typhus to the most vermin-infested section of the population, its occurrence at a period of the year when the clothing is rarely removed from such persons, and washing of either takes place at considerable intervals, and the practical limitation of the disease to cold climates, all receive ready interpretation on the assumption that lice are essentially the porters of infection. Further support is provided by the non-infectivity of typhus under modern hospital conditions and the success attending prophylaxis directed towards the extermination of insect parasites, and there is no known epidemiological fact inconsistent with the view that lice carry the infection. There is really no evidence to incriminate the bedbug in the case of either typhus or relapsing fever. It is possible to transmit plague experimentally by means of bugs, but there is no epidemiological reason for supposing this takes place to any extent in nature.

2. **Colloid Tumor of the Third Ventricle.**—A. J. Hall reports a series of nine cases in which a colloidal cystic swelling attached to the choroid plexus was found lying in the anterior extremity of the third ventricle, attaining the size of a marble or Barcelona nut, and causing death either with or without definite cerebral symptoms for some time before. When fresh these tumors are soft and gelatinous and must by their physical characteristics pack closely up against the sides of the ventricle and very effectively plug the foramen of Monro. It seems probable that the process by which they have reached their final positions has been something as follows: Starting as a small tumor lying in the anterior end of one or other choroid plexus, on the floor of the corresponding lateral ventricle, it has in its growth followed the line of least resistance, or been pushed along with the current of cerebrospinal fluid, and gradually slipped over the inner bor-

der of the optic thalmus, into the third ventricle, pushing beneath it the velum interpositum. Until it reached such a size as to become wedged in the third ventricle probably few symptoms would arise, but with the gradual obstruction to the venous circulation through pressure on the veins of Galen, and the obstruction to the passage of cerebrospinal fluid, temporary or continued symptoms of intracranial pressure develop. In the temporary attacks of headache, as in one of the author's cases, or the more severe attacks of stupor preceded by restlessness in the case recorded by Mott and Barratt, recovery followed rest, and possibly the dorsal or a unilateral decubitus relieved the ball-valve pressure and produced equilibrium once more. In the case of Batten and Collier, and possibly also in another of the author's, the ball-valve once having come into play remained firmly fixed until death; for it seems obvious that with any increase of pressure in the lateral ventricles the sides of the third ventricle will be more tightly pressed upon the contained tumor, and it will therefore become more firmly held the more the pressure increases. In fact, once the tumor reaches its final position and a certain size everything aids its obstructive action—the more it obstructs the veins of Galen the greater will be the pressure in the lateral ventricles and so the tighter will the tumor be held; but the tighter it is held the more completely will it plug the ventricular channel.

4. **Hairpin Impacted in Ascending Colon.**—L. McGavin reports the case of a physician who while making a topical application to the pharynx with a straightened-out hairpin, accidentally swallowed the latter. The case is of some interest, not only from the unusual nature of the accident, but from the apparent ease with which so pliable and sharp-pointed a foreign body should have passed the cardiac, pyloric, and ileocecal orifices, as well as the whole length of the small intestine, without arrest. So far as the cardiac and ileocecal orifices and the small intestine are concerned, this must be put down to its elongated character, but only good luck could have helped its five inches of length through the pylorus. Having arrived at the colon it would there have greater width in which to alter its position and so become impacted transversely. The second point of interest was the false idea given of its real direction by an excellent radiogram. In this connection it is wise to remember that the value of a radiogram of a foreign body in the intestines is chiefly limited to denoting the quarter of the abdomen in which it lies, since in a coil of jejunum lying low down it may appear to be in the cecum or the sigmoid, while in a coil of ileum lying high up it may suggest the stomach or the transverse colon; it cannot denote the actual section of bowel with any certainty. The hairpin was successfully removed at operation.

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## British Medical Journal.

*January* 11, 1913.

1. The History and Nature of Certain Specimens Alleged to Have Been Obtained at the Postmortem Examination of Napoleon the Great. A. Keith.
2. Insect Porters of Bacterial Infections. C. J. Martin.
3. Medicine and Liberty. W. Gordon.
4. Salvarsan in Pernicious Anemia. E. F. Maynard.

1. **The Postmortem of Napoleon.**—By A. Keith. (See page 212.)

2. **Insect Porters of Bacterial Infection.**—By C. J. Martin. (See page 214.)

3. **Medicine and Liberty.**—W. Gordon notes that there have been four great periods of preeminent progress in medicine. The first was coincident with the golden age of Greek culture and culminated in the lifetime of Hippocrates, about the second half of the fifth and the beginning of the fourth centuries before Christ. The second occurred rather late in the Renaissance, and its activities centered round Padua in the sixteenth century of our era. The third followed close on the second, reaching from the seventeenth century onwards to culminate in the nineteenth, its activities centering round England. The last, which is but the expansion of the third, began within the nineteenth century, and its activities reach throughout the civilized world. If these periods be examined attentively it will be found that all of them have this salient characteristic in common, a remarkable development of intellectual and personal liberty. The first period corresponds to that wonderful epoch in which human intelligence suddenly attained to heights not since surpassed, and in which admittedly one chief cause of so great a growth was the unexampled intellectual freedom which then permeated the Hellenic world. The second period formed part of that great European revival of learning which followed the flight of Greek scholars to Italy and the invention of printing. As its activities centered around Padua, it was associated with the greatest intellectual freedom of the time, for Venice was then mistress of Padua, and in every way fostered its university, that it might worthily advance the new learning. It was under the protection of the enlightened Venetian Senate that Vesalius enjoyed those unique opportunities for the study of anatomy which enabled him, in 1543, to publish his work on the "Structure of the Human Body"—a work that broke the medical slumber of more than a thousand years, shattered the fabric of Galenical authority, and, by founding modern anatomy, made possible the construction of a new physiology and a new medicine. The third period opened with the work of another Paduan—William Harvey—who, after four years' study under Fabricius, the discoverer of the valves in the veins, took his degree in 1602, and twenty-seven years later published his immortal work on the circulation of the blood. It was in post-Elizabethan England, then practically working out an ideal of popular liberty unknown elsewhere, that he completed his investigations, and that, untroubled by Government interference, there followed him the succession of illustrious medical observers who may be said to have culminated in Lister. There is sound historical and contemporary evidence that the progress of medicine is intimately related with liberty of thought and action. Wherever lay control exceeds what is necessary, the progress and practice of medicine are impaired. The proposals now made in the British National Insurance Act are so pernicious that it is the duty of the medical profession to resist them by every legitimate means in its power.

4. **Salvarsan in Pernicious Anemia.**—E. F. Maynard states that recent reports might lead one to suppose that in salvarsan we had possibly a specific in pernicious anemia; that such, however, is not the case is unfortunately borne out by the total failure of this drug in the following instance, which is still under the author's care in the Sussex County Hospital. Why in one case the drug should bring about an apparent, if temporary, cure, and in another totally fail to produce any improvement remains for the future to elucidate. C. H., aged sixty-one, stated that he had not been fit to work for two years; that he had had indigestion and jaundice, had lost weight considerably, and had vomiting and diarrhea, headache and drowsiness. His skin was bronzed on face and hands, but there was no pigmentation of mucous surfaces, nor around the nipples. The heart and lungs were normal. He was at first thought to be the subject of Addison's disease, but a blood examination negatived this diagnosis, and showed the condition to be pernicious anemia. The temperature was never as high as 100° F., but invariably at night ranged between 99° and 100°; on the night following the first injection of salvarsan it was somewhat higher, but ever afterwards distinctly lower, never reaching above 99°. He was admitted October 3, 1912. The first dose of 0.3 gram of salvarsan was given intramuscularly on October 13, after which there was a definite increase in

the number of red cells for a fortnight, when a second dose of the drug was given (October 29). Examination of the blood a week later revealed a diminution in the red cells; the treatment was therefore stopped. The patient has since November 30 been treated with an autogenous vaccine of a pure culture of streptococci obtained from the gums, and the latest report shows some improvement in the number of red cells, and the color index, and fewer normoblasts and megaloblasts.

### Berliner klinische Wochenschrift.

*January* 6, 1913.

**Foundations of Drug Therapy.**—Heffter writes briefly on this subject, going back to the period at which the *Wochenschrift* was first established by Posner, just fifty years ago. At that epoch therapeutic nihilism had been overcome, but our exact knowledge was as yet very slight, consisting chiefly of "supporting measures"—the reinforcement of weakened physiological processes. The profession seeks always for specifics and for treatment based on causes. As far as the latter is concerned our only attainments were in the treatment of poisonings. If we knew the poison to give its antidote was of the nature of causal therapy. The latter subject sprang into generalized existence with the discoveries of Lister and Koch, although internal disinfection lagged far behind the external form. Quinine cured malaria on the principle of internal disinfection, but, of course, this was not understood for years. At present Ehrlich and his disciples are making great advances in this field. In the competing field of serotherapy we also see the operation of causal therapy—the so-called etiotropic medication. The old physiological therapy is now termed in contradistinction organotropic. This is extremely difficult to carry out without empiricism. Neither the drugs nor the tissues acted upon are constants and diseased tissues are often much more sensitive to drugs than are sound ones. Hence the necessity of individualization in organotropic therapeutics.

**Fifty Years of Gastroenteric Therapeutics.**—Ewald enumerates the many advances during this period—last but not least he mentions the modern sanatoria for digestive disorders in which dietetic therapy is carried out in perfection. The remarkable advances obtained through radiography are enumerated, while for the parallel progress in rectosigmoidoscopy credit is given to Americans like Tuttle, Otis, and Kelly, who substituted for the short rectal specula the much longer one now in use. The tremendous encroachments of surgery in the field of gastroenterology do not antagonize Ewald's belief that the latter is destined to become more and more a specialty. Martin, the American proctologist, receives credit for an intrarectal surgical advance, to wit, the division of Houston's valves. This has recently been revived in Germany. Of numerous drugs successfully introduced during recent years are biliary acids and the peristaltic hormone, and mention is made of the efforts to prevent intestinal putrefaction by artificial sour milk, Kefir, yoghurt, pot cheese, etc. It is, of course, understood that the entire routine technique of gastroenterology with its analyses of stomach contents and feces has come into use during the life of the *Wochenschrift*.

**Treatment of Incoercible Hemorrhages in Nurslings.**—Blühdorn refers to miscellaneous cases of bleeding dependent on hemophilia in some degree—melena neonatorum, Henoch's purpura, umbilical hemorrhage in sepsis, etc. The hemophilia does not imply the congenital type, but is a temporary, perhaps localized acute hemorrhagic diathesis. In the case of melena horse serum was injected and calcium (acetate) given *per os*. The child made a brilliant recovery. The horse serum used was ordinary diphtheria antitoxin. In the case of Henoch's purpura there was also hemorrhage from the bowels, which recovered under the same treatment. In the third case the umbilical blood was found to present delayed coagulability. The same treatment was given with great success. That it acts by restoring normal coagulability in the blood has not been proved nor is there necessarily a delayed coagulability in these cases.

### Münchener medizinische Wochenschrift.

*December* 31, 1912, *and January* 7, 1913.

**Serotherapy in Melena Neonatorum.**—Franz begins by mentioning the high mortality of this affection (50-80 per cent.). In addition to the few time-honored remedies in use, calcium, adrenalin and gelatine have been introduced but without any changes in the death rate. Serotherapy has been tested in other aspects of hemorrhage—for example hemorrhagic diathesis expressed as umbilical hemorrhage. Despite favorable results the method has not been extended to melena, which is of course not necessarily hemophilic but may be due to a great variety of factors. The author has recently begun to treat these cases by autoserotherapy, injecting umbilical blood serum subcutaneously. The five cases tested all recovered, and in four recovery was surprisingly prompt. No untoward affects of the serum were noted.

**Action of Digitalis on the Various Forms of Cardiac Disease.**—Schrenk sums up as follows: In 17 mitral insufficiencies with more or less compensation 15 reacted promptly, and two with defective compensation negatively. In 4 cases of pure mitral stenosis two did not react, one was a case of hepatic stagnation, the other of dilatation and pulmonary infarction. In 31 with combined mitral insufficiency and mitral stenosis all reacted but 2, and in one of these there was severe myocarditis. Of 9 cases of aortic insufficiency digitalis was negative in 2, in one of which there was dilatation. When negative results could not be associated with cardiac conditions they could be traced to severe general or pulmonary affections. In several cases of association of tricuspid and mitral lesions the result was not significant as there was as a rule dilatation of the right heart and stagnation of the liver. In 30 cases of associated aortic and mitral lesions the behavior under digitalis was very irregular, and there were at least nine negative results in which various complications were accused. Of 33 affections of the myocardium, chiefly chronic myocarditis, there were 5 negative results which included two cases of goitre heart. In five cases of pericarditis with exudation, in which hepatic stasis coexisted, there was no reaction of any value. Nearly all the 21 cases of cardiac insufficiency of chronic nephritis (no manifest arteriosclerosis) the reactions were marked. In 13 cases with arteriosclerosis the results were good in 7. Here as elsewhere the increase of diuresis was one of the evidences of a positive reaction. Total failure generally argued a poor state of the cardiac muscle.

**Care of the Teeth in the German Army.**—Müller advises that a dental station be established in every garrison hospital, with every provision for the extraction and filling of teeth. Every army corps should possess a technical station for the manufacture of false dentures. From one to three days should suffice for the preparation of the latter. Civil practitioners must direct the stations until a military corps of dentists can be introduced. The former must be paid by the army administration in accordance with the size of the garrison. The future corps of army dental surgeons must be recruited from the dentists of the Empire, who must serve a certain number of years actively, time being allowed for study. After their term of active volunteer service has been completed, they are placed on the dental reserve list.

**Spontaneous Recovery in Graves' Disease.**—Grober relates a case in great detail of a complete spontaneous cure of Graves' disease, much superior in type to the various

medicamentous and surgical recoveries which only produce a sort of arrest, leaving patients still invalids. At the same time nothing new is claimed, for similar instances have frequently been reported, save that the credit has been given without question to the treatment employed—which credit is as a rule a matter of dispute, for, as already stated, medical and surgical measures seem able in the vast majority of cases to exert very limited powers. All complete cures are then perhaps really spontaneously brought about. As Graves' disease shows periods of activity and of latency we must watch cases for 2 or 3 years before we can pronounce as to permanent results. It is of course very seldom that an occasion is offered to study a case of spontaneous recovery as is the case with any serious chronic disease. In 1906 a woman aged 28 was seen with recent acute Graves' disease. Within 7 or 8 months the full picture of the affection had developed. After a thorough examination the patient dropped out of sight and was not seen again for four years. When she reappeared it was without any evidences of Graves', but, instead, a picture suggesting incipient tuberculosis. Two years later she once more appeared with the same picture aggravated, but the most careful research could not locate bacilli. She had developed "drum-stick" fingers. The author assumed the existence of a type of chronic latent pulmonary tuberculosis with development of bronchiectasis. There was a faint persistence of a few Graves' symptoms, but these were doubtless pure residues. The view that this disease may sometimes be of paratuberculous origin is not new. Whatever the nature of the cure it seems assured that it could not have been due to treatment, for the patient denied having done anything toward cure during the entire six years.

**Results of Prison Sentences for Young Girls.**—Ruprecht, a jurist of Münich, well known as an authority on juvenile delinquency, shows by numerous examples that female juvenile offenders when released from prisons naturally choose between crime per se and vice. They naturally choose the latter because the penalties are lighter. Thus for example a country girl aged 13 whose home was broken up by death and desertion wandered to Münich and was shortly after dismissed on a charge of theft with a reprimand. Soon after she was mixed up in a case of attempted murder and arson and was sent up for three years. Upon her release she at once became a prostitute. Another girl, only 12 at the outset of her career, was repeatedly given short terms for larceny, after which she was given a three-year sentence with compulsory education. At the expiration of the term she began the life of a street walker. In cases of this type hatred of work undoubtedly enters as a factor, but the "result of punishment" seems to be the chief component. Since a young girl, perhaps a mere child, sentenced to a correctional institution as an habitual offender against property emerges as a fully developed woman and enters into prostitution—which she has learned all about from fellow convicts—something must be done as a substitute for these imprisonments. Enforced education does not solve the problem, for it does not neutralize the inborn dislike of steady employment; but it is infinitely preferable to merely punitive sentence, and judging from the results claimed in certain countries is at present our only hope.

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## Deutsche medizinische Wochenschrift.

*January 2, 1913.*

**Rachitis.**—Ribbert introduces a new conception of this affection which is known to consist in the excessive formation of lime-poor bone, which interferes with endochondral ossification, the medullary spaces projecting into the defective cartilage. However, the attempts to connect rickets with a special anomaly of metabolism is unsuccessful as are attempts to make the affection amenable to specific diet. In the meantime two other factors have come to the front. Rickets has been produced in animals by bacterial infections, while ablation of the thymus also sets up a rachitic condition. Nothing can be done by feeding with lime, but when rickets undergoes recovery lime is quietly deposited in the lime-poor bones. The abnormal character and behavior of the cartilage cells are such as would be explained by the action of toxic substances, and bacterial rickets alone is sufficiently suggestive of a toxemic state. The author, however, sees no sure foundation for a thymic origin of rickets, its rôle being an incidental one only. The dependence of rickets on improper feeding of any sort is well known and the latter undoubtedly acts by lowering the resistance or by interfering with metabolism. The organism seems unable to store calcium, but the direct action of some sort of toxic substance on the cartilage cells, inducing the necrosis, represents, Ribbert holds, the most significant rationale of the disease.

**Significance of Choked Disks.**—Schieck states that the absolute significance of this phenomenon is as follows: the cerebrospinal fluid penetrates into the preformed perivascular lymph spaces of the axillary cord in the optic nerve along the central blood vessels so that there is set up the characteristic edema of the optic disk. The cause of this behavior of the fluid is increased intracranial tension resulting from meningitis, tumors, etc., as well as local disturbances in the orbit and optic nerve itself. Finally there is a type due to intrabulbar disturbances due to lowering of the intraocular tension following injuries to the eye and in external loss of blood (due to collapse of the blood vessels). The phenomenon of choked disk is becoming of ever-increasing interest to the ophthalmologist, neurologist, and surgeon. Trepanations for the prevention of blindness have become so frequent in recent years that the general practitioner can no longer escape responsibility in these cases and must make ophthalmoscopy to some extent a part of his routine work, since it is he, Schieck says, who is usually the first to see cases of this kind.

**Perirenal Hematoma Following Scarlatina.**—Hering names scarlet fever as one of the affections which cause acute hemorrhagic diathesis, so any sort of extravasation in any locality need occasion no surprise. When the extravasation is extensive marked pressure symptoms may result. A case cited is of interest because the boy when convalescing finely and with no symptoms of any kind pointing to the kidneys from first to last developed pain about the navel and in the left testicle. There had been a temperature rise. When first seen by the author the boy was looking very pale, temperature subfebrile, pulse 150, thready. There was an abdominal tumor, vomiting, and obstipation. Diagnosis was made of ileus with beginning peritonitis. Patient was rushed to hospital, stomach first washed out. The testicle, which had now become much swollen, was now exposed and found to be infiltrated with blood. The inguinal canal was normal, and strangulated hernia was thereby excluded. Median laparotomy now revealed the usual evidences of peritonitis, but no point of obstruction. The perirenal tumor was now discovered and trial puncture showed blood. A lumbar incision was made after the small exploratory abdominal incision had been closed, and the hematoma dealt with in the usual fashion. As evidences of peritonitis persisted this condition was treated by medical measures (electric light baths, physostigmin, etc.). Death resulted on the third day. The diagnosis was paralytic ileus consecutive to the ingravescent hemorrhage. This hemorrhage had not originated in the kidney, but somewhere in its vicinity.

## Insurance Medicine.

### SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

#### THE LIFE INSURANCE POLICY.

The policy is the consummation of a contract which stipulates the amount which the holder is to contribute to the common fund and defines his rights and privileges, and is executed after the statements by the applicant, the report from the examiner and the inspection report have been carefully considered by the company.

According to a distinct provision in the application blank, the policy does not become operative or binding until delivery to the applicant and acceptance by him during his continuance in good health and payment of the premium. This provision is manifestly a just and proper one. Many applicants postpone the payment of the premium until the period of time allowed has almost expired or, as happens in a large percentage of cases, change their minds and decide not to accept the policy. The time allowed for the delivery of the policy varies from thirty to sixty days from the date of the examination. The procrastinating or vacillating applicants, if they are also unscrupulous, have an ample opportunity, therefore, to become suddenly anxious to pay for and secure the policy in the event of any illness or accident occurring during the stated period. This scheme is not an uncommon one. The two following cases, remembered on account of the large amount involved, may be cited: In the first case the applicant was stricken with an acute attack of appendicitis about three weeks after the application and examination were made for a policy of a quarter of a million dollars. He had not tendered the premium and it was questionable if he would ever have done so. Nevertheless, his private secretary hurried to the company's office with the premium on the day of the operation and took the policy without mentioning the illness. Death occurred a few days later. The second case reveals double fraud, for the applicant had failed to acknowledge a history of previous chronic appendicitis and there were no apparent signs at the time of the examination. The payment of the premium was delayed for some reason, until an acute exacerbation of the appendicitis happened to occur, several weeks after the date of the examination, and the first news of the illness was presented to the company in the form of a death-claim. Both cases plunged the company into extended and costly litigations.

An exception to the clause referred to in the previous paragraph occurs in the event of the issuance of a "binding receipt" by the agent in exchange for the premium, according to the terms of which the policy will go into force as soon as the risk is accepted by the company, provided the premium is paid in cash and the applicant is in good health at the time. In such cases the company must pay the claim even if the applicant dies between the date of the binding receipt and the actual issuance of the policy. The chief object of a binding receipt is to relieve the mind of an applicant who is anxious to have the insurance in force at the earliest possible date.

Laws have been enacted in several states requiring the companies to attach a copy of the application, or any instrument referred to in the policy, to the policy as a part of the contract. These copies are usually furnished in the form of photographs of the original papers. The propriety and wisdom of this procedure are so evident that many companies are carrying it out voluntarily in states where there are no such requirements.

Before accepting the policy and paying the premium, the insured should invariably make it a point to read the terms in the document as well as the attached copy of the application and assure himself that the conditions and privileges appearing therein are satisfactory and that all the statements made by him are complete and accurate. This precaution is seldom observed and failure to do so will occasionally lead to misunderstanding and discontent later on. In order to avoid misunderstandings as far as possible, there has been a marked tendency in recent years to simplify the form of the policy and to use plain unmistakable terms in the place of the obscure and technical legal phrases formerly employed.

Restrictions have been removed, in some instances to the point of excessive liberality, and excessive liberality in regard to traveling in an unhealthy climate, military and naval risks, suicides, lapses, surrender values and the like involves a certain amount of cost. Freedom from such restrictions, while of advantage to those who benefit by it, must be made largely at the expense of the many other policyholders to whom it is of no use. Fortunately, the additional cost of these concessions is very small when divided among all the policyholders.

The term "incontestibility" implies that no objection will be made to the payment of the claim when it becomes due, provided all the premiums have been paid. Practically all policies now written become incontestible in one or two years after the date of issuance. With the perfected facilities for inspection, aided by the use of the telephone and telegraph and the extensive system of commercial credits, this period of time is now considered sufficiently long to afford ample opportunity to a company for verifying the statements of the applicant upon which the contract is based. If the company finds that the insured has been guilty of misrepresentation and that he will not return his policy when called upon to do so, equity proceedings may be instituted to compel its surrender.

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**Under What Presuppositions Are Apoplectic Attacks to be Looked Upon as Due to Accident?**—Scheu states that, under the law, an occupational injury must occur within a specified interval. Insidious affections cannot be ascribed to occupation without a review of the case. There must be a demonstration of undue muscular exertion or external violence. Cerebral apoplexy occurs in those predisposed under the most varied conditions. It frequently supervenes while the victims are following their occupation in the absence both of undue exertion and violence; yet the tendency is invariably to accuse the occupation. When a stroke has occurred to a patient while at work the following data should first be obtained: Was the victim previously healthy and, if not, what is the history of his diseases; was he ever a soldier; if married, are his children healthy; had he been known as an alcoholic; what was the nature of his regular occupation; was the labor on the day of injury in any wise different from his regular duties; was the case recognized by the physician first summoned as an "accident."—*Zeitschrift für Versicherungsmedizin*, V. 9, 1912.

# Book Reviews.

Digestion and Metabolism. The Physiological and Pathological Chemistry of Nutrition. For Students and Physicians. By Alonzo Englebert Taylor, M.D., Rush Professor of Physiological Chemistry, University of Pennsylvania, Philadelphia. Price $3.75. Philadelphia and New York: Lea & Febiger, 1912.

There have been published in recent years a large number of books on biological chemistry, which are chiefly in German. There is also a valuable series of monographs on biochemistry published by the English school of chemists, in which are summarized certain phases of our knowledge, in convenient form. Graham Lusk, too, has published an important monograph on nutrition, treating the subject largely from the calorimetric aspect. But this volume covers a somewhat different field. An unusually successful attempt has been made to explain in fairly simple language the chemistry of digestion, absorption and breaking-down of food in the body. A preliminary portion is devoted to a survey of the foodstuffs and their general composition. Following this is a chapter on the theory of ferment action, and then a chapter on digestion. After this, the metabolism of each one of the foodstuffs is considered separately, that is, the metabolism of carbohydrates, fats and proteins. There is next an unusually clear discussion of that still puzzling field, the creatin-creatinin and purin break-down. Three final chapters on autointoxication, metabolism considered as a whole, and the production and regulation of body temperature, complete the volume. Although many useful diagrams are scattered through the text, there are no pictures of apparatus, and analytical procedures have been entirely eliminated, thus permitting within a moderate space a very full discussion of our present beliefs on metabolism. The press work on the book is excellent, and the only points warranting criticism are two: the exceedingly dogmatic style in which statements are made, and the elimination of all references to the names of those who have contributed to the subject. The author apologizes for the latter sin in his preface, saying that such references occupy a very large space and that their discussion necessitates the inclusion of much technical detail. While this is no doubt true, yet it means that the student who reads this book is unable to verify a single statement in it, unless he does a large amount of supplementary reading in some other text which does furnish references. If he has a command of German, he can use the admirable Handbuch der Biochemie edited by Oppenheimer and recently completed in five volumes, which is as much overburdened with references as this book is free from them. There is a danger, however, that the student will assume a somewhat more dogmatic attitude than he usually does about his information, and will think that because he has read one book he is fully informed on biological chemistry, and not realize the enormous gaps which still exist in our knowledge. Then, too, it is only right that the student of biological chemistry should become acquainted with the names of the great investigators who have done so much to build up the edifice of this branch of chemistry, and, what is more important still, he should in some way be referred to a few of the great original papers in order to learn at first hand the way in which biological chemistry has grown from the first great discovery, that of urea by Wöhler in 1828. The dogmatism of the author's statements, just referred to, are no disadvantage in so far as they represent his personal opinions, which are so often suppressed in books nowadays, and as they stimulate to further reading in order to verify his attitude may possibly prove of benefit; so that taken as a whole the book must be regarded as a credit to an investigator who has himself achieved important discoveries in biological chemistry.

Textbook of General and Special Pathology. For Students and Practitioners. By Henry T. Brooks, M.D. Formerly Professor of Pathology at the New York Post-Graduate Medical School and Hospital; Consulting Pathologist to Beth-Israel, New York City and New Rochelle, New York, Hospitals, etc. Illustrated with 525 half-tone and other text engravings (110 in colors), also 15 full-page plates in colors, containing 40 figures. Price $6.00. Philadelphia: F. A. Davis Company, 1912.

While originally planned as a translation of Langerhans' Outlines of Pathological Anatomy, the present work grew under the author's hands to such an extent that it developed into a new treatise and is now presented by him as an independent volume. The number of useful books on the subject is already very large but this newest addition to the list exhibits sufficient excellencies fully to justify its appearance. One of its most distinctive and valuable features, perhaps, is the success with which the author has sought to make it of service to the practitioner as well as the student by putting more emphasis than is usually done on the clinical aspects of pathological processes. In this way the problems of diagnosis are very fully considered and the value of the book as a work of reference is greatly increased. The illustrations are unusually numerous and by the use of a very thin but perfectly opaque paper the volume has been kept within bounds as to size and weight in spite of its 1,100 pages.

Outlines of Early Development. For Obstetric Students. By R. W. Johnstone, M.A., M.D., F.R.C.S.E., M.R.C.P.E., Assistant to the Professor of Midwifery, University of Edinburgh; Obstetric Physician to the New Town Dispensary; Extern Assistant Physician, Royal Maternity Hospital, Edinburgh, with a preface by Sir J. Halliday Croom, Profesor of Midwifery, University of Edinburgh. Price 1/6 net. Edinburgh: John Currie, 1911.

This little book is a valuable adjunct to the ordinary text book of obstetrics, as it explains the essentials of what is known in regard to the embedding of the human ovum. The illustrations help the student to learn the terminology used by embryologists in describing the ovum, trophoblast and decidua.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph. D., F.C.S., and W. Wynn Westcott, M. B. Loud, D.P.H., H. M.'s Coroner for North East London. Fifteenth Edition in Two Volumes. Price £1 1s. ($5). London: H. R. Lewie, 1912.

This the fifteenth edition of the well known pharmacopœia of Martindale and Westcott, is the first edition to be published in two volumes. This change has been rendered necessary by the growth of the subject matter during the past two years. By these means Volume I. has been kept down in size practically to that of the last edition and, according to the preface, contains everything the physician and pharmacist are likely to require for immediate reference on therapeutic matters, whilst the second volume acts as a supplement for further study. Volume I. of the present edition contains more matter than did the whole of the last edition and is an exceedingly satisfactory and up-to-date description of the chemical and therapeutic properties of those extra-pharmacopœial chemicals and drugs which have attracted particular attention in the medical and scientific world. The volume also contains a vaccine chapter, one on organotherapy, a chapter on sterilization as applied to pharmacy and a general "Posological Index" which includes some 12,000 headings referring to the two volumes. Volume II. embodies analytical and experimental work, as well as résumés of investigations by eminent authorities tending to elucidate the causes of many types of disease. Both volumes contain a really remarkable quantity of medical and pharmacological knowledge and supply a veritable mine of information. The second volume, for instance, among other things, has synthetic notes, a note on physiological standardization, a list of patent or proprietary medicines with their approximate composition, essays in relation to animal organotherapy, and so on. In its present form the extra pharmacopœia is an epitome of valuable knowledge, written in pithy style. It is warmly recommended to physicians as a very useful reference book.

Microbes and Toxins. By Dr. Etienne Burnet, of the Pasteur Institute of Paris, with a Preface by Elie Metchnikoff. Translated from the French by Dr. Charles Broquet and W. M. Scott, M.D. Price $2.00. New York and London: G. P. Putnam's Sons, 1912.

It was, of course, inevitable that sooner or later a volume on microorganisms would be included in the Bibliothèque de Philosophie Scientifique and it was almost as inevitable that the editor of that collection should apply to the Pasteur Institute for a man to write it. The outcome has been most happy. Dr. Burnet has compressed into a small volume a record of the results of all the most important of the innumerable labors which have accumulated on microbes and their toxins. Details can not be expected in a work of this extent and yet the reader will be surprised to find how numerous are the details which are discussed. It is naturally impossible to produce such a book without resort to technical language, yet the author has reduced this to a minimum and the fairly ample glossary should enable the layman to read understandingly. The translators have preserved the spirit of the original and the result is an attractive volume which should have great fascination for anyone interested in scientific investigations.

## Translation.

# THE NEWER OPINIONS CONCERNING DIABETES MELLITUS.[1]

By O. MINKOWSKI,

PROFESSOR OF MEDICINE, BRESLAU.

*Translated by* GRAHAM LUSK,

PROFESSOR OF PHYSIOLOGY, CORNELL MEDICAL COLLEGE, IN NEW YORK CITY.

The "newer opinions" have recently been published in this country by von Noorden under the title of "New Aspects of Diabetes." No better discussion of them can be offered than is presented in the paper of Professor Minkowski, who was formerly the pupil of Naunyn, v. Mering, and Schmiedeberg, and the doer of the classical researches upon the effect of pancreas extirpation in dogs. The translator would also state that work in his own laboratory by Ringer has shown that the action of adrenalin upon metabolism in glycosuria is to cause a discharge of sugar from the glycogen repositories of the body. Work in his laboratory has demonstrated that protein and many of its constituent amino acids are convertible into dextrose and that the argument of von Noorden that amino acids stimulate the production of sugar from fat is absolutely untenable.[2] The translator reiterates the belief expressed frequently in his writings that carbohydrate does not originate from fat of ordinary diet or body fat in the metabolism of the higher animals.

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### Professor Minkowski's Address.

In presenting to you today some of the newer views concerning diabetes mellitus, I am fully aware that for this audience the practical standpoint of the physician will most arouse your interest. If, however, I deal with theoretical considerations, it is only because the therapy of the day, more than we are conscious of and more perhaps than is good for us, is determined by current theoretical conceptions. Although it must be the object of a rational therapy to base prescriptions on a clear idea of the character of the functional disturbance, yet there is a certain danger that the attention may become fixed upon each newly established fact so that a one-sided conception results. Theoretical ideas give us a viewpoint from which to survey our experiences in practice. Each change of viewpoint allows new phases to come to the front and retires those from our vision which formerly had seemed most important in our eyes. After this manner one can explain the movements of fashion in therapy, and the peculiar phenomenon that methods of treatment which have appeared to be thoroughly established have been forgotten, only to be rediscovered later.

The study of diseases of metabolism in general, and, especially laboratory work upon diabetes, has taught us so many new facts in recent years that the therapeutic standpoint which had been thought to be the true one has begun to be materially modified. What to many may pass as the newest standpoint is abandoned by others in favor of a still newer one.

It has recently come about that one of the best-known authors[3] on this subject has stated that opinions which have prevailed for two decades concerning the theory of diabetes can today no longer be maintained. However, the therapeutic consequences of these changed opinions have not yet reached their full force. This author, von Noorden, comes to the final conclusion that the old and tried out method of limiting carbohydrate ingestion may be well founded, even from the new viewpoint, although the interpretation is now different. However, even though opinion may remain that way for awhile, yet it takes no especial gift of prophecy to foretell that some day some one again will earn great fame for himself through the discovery that one may beneficially influence diabetes mellitus by reducing the intake of carbohydrate!

The new theoretical views on the subject of diabetes mellitus touch on the fundamental questions regarding the subject: (1) What is the cause of the overloading of the organism with sugar? and (2) In which organ does the seat of the disturbance which produces diabetes lie?

It is denied by no one at the present day that every case of diabetes is associated with a hyperglycemia, and that the glycosuria is due to this overloading of the blood with sugar. Whether a glycosuria may occur without hyperglycemia, and only as the result of a special permeability of the kidney for sugar—a "renal" glycosuria, of which Weiland[4] has offered some examples—is another question; for in such cases the underlying metabolic disturbances do not occur as they do in "diabetic" glycosuria.

Although up to within a short time we were accustomed to consider in the practice of medicine that the cause of diabetic hyperglycemia lay in the inability of the diabetic organism to utilize sugar in the normal manner, we now see that eminent clinicians, I mention only the schools of Kraus and von Noorden, have taken the view that the diabetic hyperglycemia does not arise from a disturbance in the power of the organism to destroy sugar, but rather to the overproduction of sugar; and that there exists an abnormally increased mobilization of sugar, whether from deposited glycogen or from some other substance, together with an increased production of sugar from other sources, from proteins and perhaps from fat.

I find it very much to be regretted that these opinions, which were formerly only held by such physiologists as were informed concerning experimental glycosuria of short duration and who had had no experience with human diabetes, have also been adopted by clinicians. I fear that the result will be the introduction of new misunderstandings and a greater chaos of opinion in the already difficult doctrine of diabetes mellitus.

In the first place, concentration of the attention upon the catchwords "disturbed utilization" or "increased formation" gives no proper idea of the differences between the two theories. One cannot deny that a temporary elimination of sugar may be brought about by an overflooding of the organism with sugar, as in certain cases of alimentary glycosuria or through a sudden outpouring of sugar from the glycogen repositories as in the case of *la piqure*, and as probably also takes place in adrenalin glycosuria. Furthermore, those who, like myself, consider that the disturbed utilization of sugar is the principal factor in the origin of diabetes, do not deny that the production of sugar may be increased in the organism. The body which is not able to oxidize sugar is in a condition of carbohydrate hunger, notwithstanding the fact that its fluids are overladen with sugar. The regulatory

mechanisms which normally coordinate sugar production with sugar requirement are consequently continually stimulated. If, therefore, it should be proved that the production of sugar is greater than normal, this does not prove that the increased sugar formation is the cause of the glycosuria. It could just as well be the result of the disturbed utilization of sugar. The question is this: Can it be proved that the diabetic organism has the power of the normal organism to utilize sugar—whether that sugar be ingested or be produced within the organism itself? The newer views maintain that this is the case. It seems to me that the proof has not been offered.

It is true that most diabetics can utilize certain quantities of carbohydrate, and such utilization may increase when increased quantities are given. But one must recollect that human diabetes depends upon the reduction and not the complete abolition of a function, and that the powers of even a diseased organ may be partially increased when increased demands are made upon them. However, it has been denied that a disturbed condition of sugar utilization exists in the most intense form of diabetes, such as that which follows the extirpation of the pancreas, and this doctrine has been upheld on the strength of observations concerning the behavior of the so-called "respiratory quotient." The observations, according to my opinion, may be otherwise interpreted.

The respiratory quotient is the ratio between the volume of $CO_2$ produced and $O_2$ absorbed, and gives us information concerning the materials oxidized in the normal organism. In the case of the oxidation of carbohydrate, $O_2$ is required solely for the purpose of converting C atoms into $CO_2$, and the respiratory quotient is 1. The quotient is lower in proportion to the quantity of protein and fat oxidized, substances which are less rich in oxygen than are the carbohydrates.

In diabetes mellitus remarkably low quotients have been found, especially in severe cases. It has also been shown that after giving carbohydrates the respiratory quotient does not rise to the same extent as in the normal individual. Heretofore this has been accepted as a proof that the utilization of sugar has been disturbed. But in recent times, under certain conditions, high respiratory quotients have been found, even in diabetes. Von Noorden lays great stress upon the experiments of Porges and Salomon, in which the portal veins of dogs were tied in order to eliminate the action of the liver from the organism. After this operation the respiratory quotient became 1, and the same thing happened in the animals if in addition they were made diabetic by extirpation of the pancreas. Von Noorden concludes from this that muscle oxidizes carbohydrate only, the power remaining unchanged in diabetes. Putting aside all other objections against the validity of this proof, such as the severity of the operation for example, one may object to these conclusions on the ground that the respiratory quotient is only interpretative of the normal processes of metabolism. If, for example, the formation of sugar is disturbed, as would take place after eliminating the liver as a factor, then those atom groups which were formerly converted into sugar might be directly oxidized, and would then exert the same influence upon the respiratory quotient as sugar itself. In the last analysis the respiratory quotient depends upon the relation in which C and H atoms stand with regard to the $O_2$ necessary for their oxidation, and not upon the constitution of the material oxidized. I will mention only that the oxidation of lactic acid, $C_3H_6O_3$, yields a respiratory quotient of 1.

The idea that the utilization of sugars is not disturbed in diabetes, must of itself present great difficulties to the clinician. It appears to me that a "quantitative mental error" is here involved. How is one to imagine a continuous glycosuria of the intensity found in human diabetes or even in experimental pancreas diabetes without any disturbance of sugar utilization, and occurring only as the result of an increased sugar production? In the last analysis it can only happen through a delay in the mobilization of sugar. For even in the normal organism deposited carbohydrates are sooner or later converted into sugar and oxidized as such. Even though it is possible to conceive that an overflooding of the organism with sugar and consequent glycosuria may be brought about through the discharge of accumulated glycogen stores, as in the case of *la piqure*, how can it be possible that after the exhaustion of these reserves and during starvation a prolonged and intense sugar elimination takes place as the result of the over-production of sugar when the sugar utilization is not at all disturbed?

I need scarcely say that the hypothesis of an undisturbed utilization of sugar is not in accord with the opinions of recent years concerning the origin of diabetic acidosis, opinions which are based upon the idea that the appearance of aceton, acetoacetic acid and β-oxybutyric acids is caused by an insufficient combustion of carbohydrate. If the new hypothesis be accepted then these opinions are in need of revision. For the present I can see no reasons compelling the adoption of an hypothesis which is *a priori* so improbable.

The reason why the idea of an increased sugar production has lately come so much into the foreground is because of observations which are concerned with the second of the questions under discussion, that is to say, with the question concerning the fundamental origin of the diabetic disturbance.

Only a little while ago it scarcely seemed disputable that one might indeed consider a definite locality as the seat of the diabetic condition. In these days, however, when one again speaks of "diatheses" and pays attention to the patient's "constitution," the question is asked, is there a specific locality to which the diabetic disturbance may be attributed? Is not the disease rather a "constitutional anomaly," a "disease of metabolism," instead of being a localized disease of an organ?

One might consider it a sign of the times that "diathesis" should appear on the program of a congress of internal medicine—times in which the mystic again rears its head and the metaphysical necessities of man are revealed in an increasing interest in religio-philosophical speculations. But it is more than that, and perhaps I may be permitted to express myself about it in a few words.

The term "general disturbance of metabolism" is nothing but an aid for the description of disturbances which have not as yet been localized. The more profoundly one understands the processes of metabolism the more firmly convinced must one become that, in the higher animals at least, the separate phases of the metabolic processes are sharply localized. That is to say, corresponding to

the morphological differentiation of the organs, there is also a sharp differentiation in metabolic function. We hardly know anything of the "general metabolism" of protoplasm. Therefore, it is only another expression of the indistinct idea of a "general anomaly of the constitution," when the character of "metabolism diseases" is defined by Ebstein as depending on "the lesser value of the protoplasma due to inheritance." The presence of undeniable inheritance is not the determinant of a "general affection." Each particular characteristic is inheritable, the form of the nose, the color of the hair, as also the weakness of a definite function of an organ.

Whenever a disturbance of a very definite order occurs, such as that in diabetes mellitus, there is every reason to seek for a localization of this disturbance. But one must not forget the following: "Localization" does not mean that the whole process is limited to the bounds of a single organ. No organ works for itself alone. It depends on processes taking place in other organs, and the products of its own activity influence the functions of other organs. These products may be ferments which promote decompositions in the blood or they may be hormones which regulate the activity of cells. Functional disturbances in a certain organ may, therefore, affect other portions of the body.

Furthermore, the specific metabolism processes are not merely localized in the macroscopical organs, but in the individual elemental tissues of which the organs are composed. Indeed the differentiation extends not only to the varieties of cells, but also to the nuclei, stroma, and granules of which they are made up, and very likely even beyond the power of the microscope to determine anatomical differences. It is not necessary that all the component parts of an organ be involved in a certain pathological state, and, furthermore, it is quite possible that the affection may be concerned with elements having the same functions but situated in different organs.

And, finally, the injuries may not be confined to damage to a single organ. They may, perhaps, especially influence a certain organ, but the diseased condition may also be the result of the most variable possible combination of local influences. Just as the resistance of these elements against pathological factors may depend upon the inherited condition of a certain organ or tissue, so also certain correlations between organs or systems of organs (of functional interrelation, or of common embryological origin), may determine the individually different and often inherited susceptibility toward disease—the "preparedness for disease" of Pfaundler. It is possible that in the search after details during the past years this correlation has not been sufficiently considered. The researches of recent times have concerned themselves with the correlated functions of different organs, and also with the relations of various diseased conditions and parts to each other. It is a matter for rejoicing, and also of hope that these efforts may result in an increase in medical information. But it should not be forgotten that a knowledge of the correlation of the organs can only be obtained when a knowledge of the behavior of the individual organs is at hand, and it would be very regrettable if we should content ourselves as others have done at other times with unclear impressions. "Diathesis" should not again be permitted to become a word to be used where comprehension fails!

It has ever and again been the endeavor to explain diabetes as due to the disturbance of a definite organ. The nervous system, the liver, and in recent times the pancreas, have been credited with being the seat of the disease. I will not today discuss the question as to the extent to which lesions of the pancreas are responsible for the condition of diabetes. I will only mention incidentally that Weichselbaum has recently described changes which occur in the pancreas in every case of diabetes, changes which, on account of imperfect methods, were overlooked by previous observers. One might ask if these changes were the cause or the result of the diabetes. However, it cannot be denied from the phenomena which follow extirpation of the pancreas that disturbances of the function of the pancreas can lead to diabetes. The only question is, what is the manner of action of this organ whose absence leads to diabetes?

It will today scarcely be disputed that this action of the pancreas depends upon an "internal secretion," which many believe to be formed in the islands of Langerhans. As regards the significance of the product formed, it was until lately generally believed that it played a definite rôle in the normal oxidation of sugar.

But recently it has been suggested that the rôle of the pancreas should be otherwise regarded. The action of various organs having internal secretions has been more exactly determined, and it has been found that many organs such as the thyroids, parathyroids, adrenals, and the glandular lobe of the hypophysis influence not only the metabolism of protein and fat, but also exert a special influence modifying the behavior of carbohydrate in the organism. It has been sought by manifold variations in experimental technique, especially through the combined removal of two organs, or by the injection of materials from other organs, to reveal the interrelations existing between them. The results of such experiments, which were carried on especially by Falta, Eppinger, and Rudinger, have led these authors to construct a complex system based upon the idea that the stimulation or inhibition of an organ may be determined by the activity of other organs. It is claimed that a mutual inhibitory effect exists between the so-called chromaffin system, the adrenals, and the pancreas, whereas reciprocal stimulation exists between the thyroid and the chromaffin system. These already complicated relations which are alleged to play an important part in the regulation of metabolism are rendered still more intricate because the functions of the organs are not only modified by the chemical substances circulating in the blood, but are also under the control of stimulating and inhibitory nerves which again are subject to the products of internal secretion acting sometimes to inhibit, sometimes to stimulate, sometimes on the sympathetic, sometimes on the autonomic system of the vagus nerve.

From these ideas the following conception has been evolved regarding carbohydrate oxidation and the origin of diabetes. The liver directly controls the metabolism of carbohydrate, for excess of carbohydrate is deposited there in the form of glycogen to be converted into sugar when sugar is required. There also, in case of necessity, sugar is produced from protein, and, as some think, also from fat. The activity of the liver is regulated on the one hand by the adrenals and on the other by the pancreas. Adrenalin, produced in the ad-

renals, accelerates sugar production, mobilizes sugar from the glycogen repositories and increases the sugar production from other materials. On account of this, adrenalin injections cause glycosuria and in Addison's disease the sugar content of the blood is diminished. The pancreas, on the contrary, inhibits the production of sugar in the liver. Injections of extracts of the pancreas prevent the occurrence of adrenalin glycosuria, extirpation of the pancreas removes the inhibition over sugar production, permits, unrestrained, the accelerating action of the adrenals upon the liver, and, therefore, leads to the most severe forms of diabetes. But the pancreas and adrenals do not function independently. The pancreas is controlled by the thyroid, which inhibits its action. Therefore, alimentary glycosuria takes place in hyperthyroidism, and an increased tolerance for sugar in myxedema. The thyroid may itself be influenced by the glandular part of the hypophysis, its activity being increased. Hence in agromegaly, when there is increased functional activity in the hypophysis, glycosuria may result. The parathyroids act upon the thyroids in the reverse manner. Besides this, the whole mechanism is under the control of the nervous system, which sometimes through the sympathetic, sometimes through the vagus, either promotes or inhibits the glycosuria. Bernard's puncture of the floor of the fourth ventricle, for example, causes, through sympathetic stimulation, increased functional activity of the suprarenals, and, therefore, glycosuria. And so forth and so on.

It appears from this that the cause of the production of diabetes and the controlling factors thereof include almost numberless possibilities, which may explain the many variations which present themselves clinically. The supporters of these doctrines do not deny that in far the greater number of the cases the dominant rôle is played by the pancreas. But they ascribe to this organ merely the importance of a brake, whose removal results in the unhindered activity of adrenalin.

It is not to be denied that in the collection of observations upon which this theory rests there are many important facts, and there is no doubt that the authors have known how to use these facts in a skillful way in the construction of their theory. In expressing my conviction that some day this theory will fall like a house of cards built high in the air, I wish to emphasize the fact that this opinion is in no way due to prejudice in favor of the sole dominion of the pancreas. I certainly will not deny that other organs may contribute to regulate carbohydrate metabolism and, therefore, may have an influence upon diabetes. I, myself, many years ago, employing methods similar to those used by the authors previously named, sought to determine the correlation between the different glands having internal secretions, and I reported these investigations at the Kongress für innere Medizin in 1896. I did not continue the experiments at the time, because the results obtained did not satisfy me. The newer experimentors have been more fortunate in this regard.

The whole complicated system of mutual stimulus and inhibition does not necessarily represent the correct interpretation of the observations, but only one of many possible alternatives. To my mind the complicated system is inherently improbable.

Without further proof, it ought not to be concluded that one organ acts upon another, just because the end result of the action of one organ may be increased or decreased by the co-activity of another organ. It is just as though one argued that since a fortune may be accumulated by increasing the income or by diminishing the expense account, therefore, an increased income must decrease expenses, and *vice versa!*

Without prejudice to the idea of the highly probable nervous and chemical correlations existing betwen the various organs, one may still consider that the influence upon the organism caused by a functioning organ or by a lesion of that organ, is much more probably due to the fact that each organ has a certain positive and, for itself, specific functional obligation. In this sense the adrenals may contribute directly or indirectly to the mobilization of sugar; the thyroids may cause only an increase in protein metabolism, although they may also act in other ways to increase sugar formation. As far as the pancreas is concerned, I would, both upon experimental and clinical grounds, attribute to it a pronounced influence upon the oxidation of carbohydrate in the organism. Simple reflection shows that even in the scheme involving this division of function, the effect of an overactivity of the adrenals or of the thyroid would intensify the symptoms caused by the exclusion of the pancreas.

Perhaps it may appear to this audience that as far as medical practice is concerned it is immaterial whether the cause of diabetic glycosuria may be pictured in one way or in another. But as first stated, there is danger that proved therapeutic principles may be overthrown. If we today treat diabetes by diminishing the carbohydrate intake, it is because we endeavor in that way not only to cause sugar to disappear from the urine, but also to spare from activity a disturbed function, and thereby cause its entire, or, at least, its partial recuperation. Von Noorden does, in fact, state that even under the new doctrines, the tried and tested method of limiting carbohydrate ingestion, the "sparing therapy," still holds, because, he says, sugar of all other substances stimulates to the greatest glycogen production, "acts as a whip to the involved organs." But, strictly considered, this is perhaps not quite logical. One might argue that if the utilization of sugar be not disturbed in diabetes then perhaps there ought to be some replenishment of the sugars lost to the organism so that its capacity for work should be maintained; and that the more carbohydrate given in the food the smaller would be the amount of sugar necessary to be built out of the valuable protein. In this way it could readily come about that dietary formulæ might be prescribed, as was formerly done, so that the more carbohydrate a diabetic excreted the more he should be given in his food.

The danger of turning the therapy in diabetes in this direction is the greater because at present, as a reaction against an overdone restriction of carbohydrate, there appears to be a current opinion which would allow carbohydrate a larger place in the diet of the diabetic, and this has even led to the introduction of "carbohydrate cures."

As you are aware, these "carbohydrate cures" originated from the recent discoveries concerning diabetic acidosis. As before mentioned, the appearance of acetone bodies has been found to coincide with a deficient oxidation of carbohydrate. It has been found that withdrawal of carbohydrate

from the diet of healthy persons causes the appearance of acetone bodies, and such withdrawal in severe diabetes causes an increase in the intensity of the acidosis. In those cases of diabetes in which a threateningly high acidosis appears it has become customary to administer carbohydrate, in spite of the danger involved. It has been assumed, as indeed is the case, that even in severe diabetes the organism has some power to oxidize carbohydrate. If the carbohydrate ingested be increased in amount the quantity of sugar oxidized in the body is increased, even though this is accompanied by an increase in the urinary sugar.

As a matter of fact it has been shown that in certain cases administration of carbohydrate can be of advantage to the diabetic. And, besides, it has been demonstrated that carbohydrates of various origins behave differently in the organism. Especially striking in this regard is the recently much discussed "oatmeal cure," first introduced by von Noorden, with which one may not only fight the danger of diabetic acidosis but also, to a striking degree, may increase the tolerance for carbohydrate.

From personal experience I can confirm the effectiveness of von Noorden's oatmeal cure in certain cases. Perhaps I formerly underrated its value. In certain diabetic individuals in whom coma was threatening or had already begun, I have received the impression that the prescription of an oatmeal cure acted for the moment as virtually life-rescuing. But this happens only in a few cases, and the results are not permanent.

It cannot now be stated upon what the action of the oatmeal cure depends. At the last Kongress für innere Medizin a long, drawn-out debate took place upon this subject, following a communication by Magnus-Levy. All the speakers with one exception were of the opinion that it depended upon a specific action of the oatmeal. Magnus-Levy, as the result of his investigations, came to the conclusion that the action was due to a particular property of the starch contained in the oatmeal. Others attributed the action to a special effect of extractives in oatmeal, to ferments which caused the destruction of sugar in the body, to substances acting like hormones which influenced the glands concerned with sugar metabolism, to an action on the kidney changing its permeability, to special fermentation processes in the intestine, with perhaps the production of substances which, like glutaric acid, have the power to influence the elimination of sugar and of acetone bodies, and to other similar ideas. That an action of a special kind is present here is indicated by the remarkable fact that, during the oatmeal cure, there is a very considerable water retention in the organsm with a noticeable increase in body weight, and not infrequently a tendency toward edema.

One of the most important influences connected with the action of the oatmeal cure, as indeed with all carbohydrate cures, is the reduction in the protein intake with which they are accompanied. I can only confirm the experience of others that it is better not to add protein to the diet, as was first recommended when the cure was introduced. It is desirable, in order to overcome the acidosis, to reduce the fat intake as much as possible.

I administer, five times daily, plates of soup, each containing 50 grams of oatmeal flakes and 10 grams of butter, with a little salt and nothing else. As a matter of course, such a diet should only be given for a few days (three or four). Immediately after that one had best, even in cases of severe acidosis, take the risk of administering a strictly carbohydrate free diet, especially if the patient has been treated for several days previous with a sufficient quantity of bicarbonate of soda.

The value of a restriction in the quantity of protein in the diet is not only because protein yields sugar in metabolism, but also because of the peculiar effect which protein administration has in increasing the total metabolism. Although, generally speaking, the energy requirement of the organism is only slightly affected by the ingestion of food, yet protein has the power to increase the metabolism when it is administered in increasing amounts. A large administration of protein may, therefore, exercise an evil influence upon the progress of the disease by instituting increased demands upon the damaged function of metabolism. This is quite apart from the fact that protein leads to an increased acid production, and hence it must be considered an acid food which may increase the dangers of acidosis. In the many cases in which the power to oxidize certain quantities of carbohydrate is still intact, it is desirable to introduce this amount of carbohydrate in the food and to reduce the protein intake.

Perhaps the greatest value of the carbohydrate cures lies especially in the fact that through them the importance of reducing the quantity of protein in the diet has become known to a large number of physicians. Such procedure, however, is not entirely new. I need only recall that Naunyn, who above all others was most largely responsible for the introduction of a rational dietetic treatment of diabetes, always maintained that the regulation of the protein intake was of no less importance than that of carbohydrate; and, furthermore, the extensive investigations of one of his pupils, Weintraud, demonstrated the necessity as well as the actual possibility of reducing the total metabolism by this treatment.

Of course, a reduction in the total intake which involves diminishing the carbohydrate and protein intake simultaneously, especially at a time when much fat must not be given on account of the acidosis, presupposes that the amount of mechanical work accomplished by a diabetic so nourished shall be kept within restricted limits. Here one touches a not unimportant point in the therapy of diabetes; for since the utilization of sugar accompanies muscular work, it has been rightly maintained, that in addition to regulation of the diet, value also inheres in the taking of muscular exercise. And, as a matter of fact, in many cases of this disease increased muscle work reduces the output of sugar. However, when the power of oxidizing sugars has very largely been lost, then an increase of mechanical work does not increase the capacity to utilize sugar, but may even cause an increased output of sugar. In these latter cases the therapy indicated is to avoid, as far as possible, all excess in muscular movements.

These regulations concerning carbohydrate cures, reduction in the quantity of food and of protein taken and diminution of the muscular effort, concern only certain cases of diabetes and especially those of the severest type, with accompanying acidosis. In the great majority of cases the most desirable treatment consists first, in a reduction of the carbohydrate intake; second, in a compensatory increase in the fat ration; third, in a moderate increase in the protein taken, and fourth, in a regulated amount of muscle work. Strict dietaries should

be absolutely enforced in all mild cases of diabetes, because they are then fraught with little danger to the organism. On the other hand, benefit from the treatment is readily attained, there being not only a reduction in the sugar excretion, but even a recovery from diabetes or at least a very considerable augmentation in the tolerance for sugar.

It will ever remain an art acquired by special study of the condition of each case, how to obtain the best result, and how to accommodate treatment to the individual.

In conclusion, permit me one remark. An author[5] who has been recently especially prominent in recommending carbohydrate cures in diabetes feels that there is a special advantage in them, as contrasted with dietaries containing the flesh of animals, in that they are "humane." Here, be it noted, that the diet poor in carbohydrate is not exclusively "animal" in nature but, on the contrary, greatest value will always be attached to a liberal use of vegetable food in the form of those permissible vegetables which are poor in carbohydrate, in the form of salads and of certain fruits. One should term "humane" that diet with which one can best relieve the patient.

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## Society Reports.

### NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

*Stated Meeting, Held, December 26, 1912.*

Dr. Franklin A. Dorman in the Chair.

**Multiple Fibroma with Adenocarcinoma of the Fundus Uteri.**—Dr. W. Travis Gibb reported this case. He said that the patient was 50 years of age, married, and the mother of one child. She had always had more or less uterine disturbance and the menstrual function had always been irregular. She had been confined to her bed for weeks at a time from April to October, 1911. The attending physician had never made an attempt to ascertain the cause of the hemorrhage and the treatment had consisted in the internal administration of ergot and stipticin. When the patient first presented herself to Dr. Gibb she had been flowing continuously for several months. The uterus reached several inches above the symphysis and was the seat of several subserous and intramural fibroids. There was also a large polypoid mass in the interior of the uterus which bled very easily. As the uterus was too large to be removed through the vagina and the condition of the patient made it seem unwise to risk a suprapubic hysterectomy at that time, the uterus was emptied of the polypoid growth, which was about the size of an orange and was attached to the fundus near the right cornu. The microscopical examination of this growth showed it to be an adenocarcinoma. The patient made a quick recovery and the uterus reduced in size so rapidly that a vaginal hysterectomy was performed a week later. The microscopical examination of the tissues surrounding the attachment of the carcinomatous mass indicated that the cancerous infiltration had not extended through the uterine wall. The patient made an uneventful recovery from the second operation. This case was of special interest because it illustrated what was occurring every day. The patient would have been willing to undergo any operation or to do anything that held out hope of relief, but her physician allowed her to go on for two years without making any real effort to ascertain the cause of her condition. Thus two very valuable years were lost in her treatment. Fortunately for the patient in this instance the cancer was one of slow growth and very amenable to surgical treatment. Two years ago the patient might safely have been promised that she would have no recurrence but at the present time the danger of recurrence in the pelvis or by metastasis was very great. Malignant disease of the uterus complicating uterine fibroid was of much more frequent occurrence than was generally believed a quarter of a centry ago. At that time the idea was prevalent that the presence of uterine fibroids was proof that cancer was not present and would not develop in the uterus. The belief now prevailed that malignancy accompanied uterine fibrosis so frequently that they were justified in removing all fibromyamatous uteri, especially in women over 40 years of age. Malignancy in connection with uterine fibroids occurred in about 5 per cent. of women between 40 and 50 years of age; in about 12 per cent. of those between 50 and 60 years of age; and in about 23 per cent. of those between 60 and 70 years of age. Such statistics should lead one to choose a panhysterectomy in those cases rather than the easier supravaginal operation, not only because a minute cervical fibroid might exist unnoticed at the time of the operation and develop later on, but because there was danger of the development of malignant disease in the cervical stump if that were not removed.

**Double Pyosalpinx of Large Size.**—Dr. W. Travis Gibb reported this case which occurred in a woman 34 years of age, married, but never pregnant. He stated that she had been ill practically since her marriage, had been curetted twice, had worn pessaries, and had undergone many courses of treatment. Both she and her husband denied any venereal disease. She had recently been ill for several weeks and confined to bed for several days with a sharp attack of peritonitis. Examination showed the abdomen enlarged, tense, and with a well-marked mass in the right iliac fossa. This mass extended 4 or 5 inches above Poupart's ligament and well over toward the median line; it was rounded, exquisitely tender, and appeared to be directly continuous with a fluctuating mass filling the cul-de-sac. A diagnosis of pelvic abscess was made and preparations for its removal through the vagina were in progress, when examination under complete anesthesia showed the mass in the right iliac region to be distinctly separate from the mass in the cul-de-sac and fairly movable in the abdominal cavity. An abdominal operation was then undertaken. Through a median incision a large mass presented, covered with thickened and inflamed omentum. The latter was adherent to the parietal peritoneum. The mass was firmly adherent and all the pelvic and lower abdominal contents were firmly matted together by old adhesions. In attempting to enucleate the upper mass pus escaped freely, perforation having occurred at several places. When the mass was separated and lifted out it was found to be the right Fallopian tube and an enormously enlarged ovary. The tube was over 12 inches long and 3½ inches in diameter at its fimbriated extremity. The ovary was about 4 inches long. Before removal the tube reached to a considerable distance above the umbilicus. The omentum was so adherent to the tube that portions of it had to be ligated and removed with the tube. Several knuckles of intestine were so firmly adherent to the tube that undoubtedly the tube had ruptured into the intestine during previous attacks. Efforts to separate the adhesions resulted in several tears in the intestines, which necessitated extensive repairs. The left tube and ovary were firmly imbedded and adherent in Douglas cul-de-sac. They, too, were enormously enlarged and were removed with difficulty. This woman no doubt had had many attacks of pelvic and general peritonitis due to gonorrheal tubal infection, some of them terminating in tubal abscess which ruptured into the intestine. It was difficult to see how the tubes and ovaries were permitted to grow to such enormous size without operative interference.

Dr. Franklin A. Dorman said that from Dr. Gibb's description the tumor was larger than any he had encountered of similar character. In this case pus pockets had formed and the tumor measured 12 inches long and was 3 inches in diameter. There was one large cavity.

Dr. George Gray Ward said that from the description it must have been a very large tumor and that he had never seen one as large.

**Interstitial Pregnancy; Ruptured.**—Dr. George Gray Ward, Jr., reported this case and presented the specimen. He stated that the patient was twenty-seven years of age and had been married five years. She gave a history of having become pregnant soon after marriage and of having had an abortion produced by midwife. This was followed five days later by peritonitis which nearly cost her her

life. She had had no further pregnancy until about four months ago, the date of the last menstruation being August 4, 1912. This gestation progressed normally until the evening of November 28, when, after laughing heartily at the theater, she felt a severe sharp pain in the region of the uterus which lasted about five minutes. She felt nothing more until the following morning when she was seized with a severe pain in the same region as the night before, but much more severe. Her family physician was called and recognizing the seriousness of her condition ordered her removal to the hospital. The ambulance nearly collided with a trolley car and this sudden jar caused the woman to go into collapse, and undoubtedly at this time the fetus was expelled into the abdominal cavity. On reaching the Post-Graduate Hospital she was taken immediately to the operating room, and given an intravenous saline infusion and prepared for operation. The abdomen was found filled with fresh blood and clots, and a four months' fetus was found lying loose among the intestines. The uterus showed a large rupture at the right cornu. A rapid supravaginal hysterectomy was done, and the abdomen cleansed and closed. The entire time consumed in the operation was thirty minutes. The condition of the patient was precarious for twenty-four hours, the pulse being imperceptible at times. Rectal saline enemata and Murphy's drip were employed. She then recovered rapidly and was up on the fourteenth day. The specimen showed very clearly the development in the right horn of the uterus and the intact tube beyond. Dr. Ward said he reported this case because these cases of interstitial pregnancy were of sufficient rarity to be reported. According to Rosenthal the interstitial variety was the rarest, occurring in only 30 per cent. of the 1,324 cases of ectopic pregnancy. Weinbreuner collected only thirty-five cases up to 1904 and Martin and Orthmann found only one instance of interstitial pregnancy in fifty-seven ectopic pregnancies. Among the special points of interest in this case were the following :(1) Points bearing on the etiological factors. After she was married and became pregnant she attempted to rid herself of her pregnancy and this probably was an etiological factor in the production of the ectopic gestation. (2) She had no symptoms during her four months' pregnancy that would lead one to suppose there was a pregnancy other than in the uterus. There was no spotting and no pain. The uterus was enlarged to what would be expected when there was a four months' pregnancy *in utero*. He could not say how they were going to guard against such calamities. (3) The question arose, why did he remove the uterus? Dr. Ward thought this was a fair question. At the time of operation the woman was so nearly dead, pulseless, abdomen filled with blood, and in shock and everything had to be done with great rapidity and there was no time to be lost and, therefore, he got it out as soon as possible. He believed he was able to do a quicker operation by doing a supravaginal amputation and so removing the bleeding areas. When one realized that the ectopic was in the horn of the uterus he should remember that the hemorrhage came not only from the ovarian vessels but from the uterine vessels as well. Therefore, to make sure of stopping the bleeding, and that in the quickest time, he removed the organ. The patient made a good recovery.

Dr. Franklin A. Dorman asked Dr. Ward if an expert had examined a woman with such an ectopic before rupture, whether he could have obtained any hint as to the true condition by discovering some irregularity. In Dr. Ward's judgment, would the discovery of any such irregularity suggest the existence of such a condition? Dr. Dorman remembered one case in the service of Dr. West seen at the Post-Graduate. There were tremendous explosions of this sort in an undeveloped horn. The operation verified the diagnosis and it was similar to Dr. Ward's case.

Dr. Ward said that it would seem to him that in an examination made by an expert, it was possible if the case was examined carefully and the abdominal walls were not too thick to detect any irregularity which might exist. In this instance the ectopic was in the horn of the uterus. Careful bimanual examinations were not always made. He believed that it was excusable not to recognize the condition under the circumstances. In some instances, however, a careful examination would reveal irregularity. Dr. Ward remembered one other case of interstitial pregnancy which was reported before the New York Obstetrical Society by Dr. Vineberg a year or two ago. The top of the uterus appeared as if it had been blown off by a shotgun. In ordinary tubal pregnancy such severe hemorrhage with collapse was met with commonly and often one waited until the following morning to operate, but in the interstitial variety the hemorrhage was apt to be of the most severe type.

Dr. Franklin A. Dorman showed a picture of a case of Dr. Marcoe's that was reported to the Section last winter. In this case there were preliminary symptoms of bleeding and no rupture.

Dr. William H. Wellington Knipe said he would like to believe that they could make a diagnosis of these cases by the discovery of these irregularities of contour. The textbooks stated that a pregnant uterus should be smooth and round, but they frequently met with uteri which were neither smooth nor round. During the early months he was quite sure he would hesitate in making a diagnosis of pregnancy of the type under consideration just because of a little irregularity of the uterus. He saw many cases with irregularities in normal pregnancies. He did not believe that they could make a positive diagnosis merely by an abdominal examination. One might have a symptomless patient; an abdominal as well as a vaginal examination might be made and if such a diagnosis of intramural ectopic was made he believed it was guesswork. These irregularities of contour, in his opinion, were not so important in establishing a diagnosis as some thought them to be.

**Sarcomatous Degeneration of a Uterine Fibroid.**—Dr. L. J. Ladinski reported this case, which occurred in a woman forty-six years of age and married. Her family history was negative and her health had always been good until during the last four years when she had lost in both weight and strength. Her last menstrual period was five weeks before her admission to the hospital. She had been married twenty-five years, had seven children, and no miscarriages. Her first pregnancy was twenty-three years ago and her last eight years ago. During the past four years menstruation had been regular, but very painful, profuse, and lasting from eight to ten days. She had not menstruated for ten weeks and then flowed profusely for five weeks before her admission to the hospital. She had continued to bleed until a week before her admission. Urination was normal; the urine, however, showed a trace of albumin. The patient also complained of headaches. A vaginal hysterectomy was done at the Beth Israel Hospital and the report of the pathologist showed sarcomatous degeneration of the uterus.

**Adenosarcoma of the Cervix Following Supravaginal Hysterectomy for Fibroids.**—Dr. L. J. Ladinski reported this case. He stated that the woman was forty-five years of age, had been married twenty-four years, had had no children, and no miscarriages. She had menstruated regularly until February, 1910, when a supravaginal hysterectomy was performed for fibroids of the uterus. She was referred to Dr. Ladinski in September, 1910, because of severe pain and difficulty in urination and defecation. Upon examination a large mass the size of an orange was found occupying the place of the uterus and extending principally to the right. Assuming that the tumor was a fibroid and had developed from a small one overlooked in the cervix at the time of the operation, the case was diagnosed as one of fibroid. Upon opening the abdomen a mass was found adherent to the omentum and appearing to spring from the stump of the cervix. It was somewhat adherent to both rectum and bladder. After removal of the tumor and cervix the patient made an uneventful recovery. The report of the pathologist stated that the tumor had an irregular nodular surface, was brownish-yellow in color, rather firm in consistency, and had fatty bands like portions of the omentum firmly attached to the greater part of its surface. Grossly the tumor resembled a degenerated sloughy fibroid. On cross-section the surface was yellowish and irregularly lamellated. The frozen section showed a papillary adenocarcinoma. This was confirmed by section of the hardened specimen. There were signs of very active proliferation. The carcinoma had invaded some of the attached omental adhesions. The smaller tumor was irregular, of firmer consistency, and showed on microscopical examination that the cervical glands were retained. The patient had gained 20 pounds since the operation and was in splendid physical condition. This case was interesting because of the coexistence of fibroid and carcinoma and the question of the possible causative relation between the two conditions.

**Malignant Degeneration Association with Fibroma Uteri.**—A general discussion was called for.

Dr. Franklin A. Dorman asked what was believed to be the attitude of the gynecologist towards a woman with fibroids of the uterus and whether the uterus should be entirely extirpated. Until recent years few recognized the considerable possibility of malignancy occurring in these tumors. During the early days of his practice it was thought best to wait until the menopause before interfering, especially in the cases with menorrhagia.

Dr. George Gray Ward, Jr., said that this subject was interesting to all operators who wanted to know whether or not it was best to leave the cervix. During the past two years there was a strong leaning abroad toward curing these fibroids by *x*-ray treatment. In some of the clinics *x*-ray was relied on almost exclusively except for those women who did not have the time or the means to take the *x*-ray treatment. The theory was that the *x*-ray caused the ovaries to cease functionating, the myoma to shrink, the blood vessels to atrophy, and the symptomatology to disappear. Dr. Ward said that he had questioned the men who were using the *x*-ray treatment in regard to the danger of malignant degeneration, and they admitted that 10 per cent. of the fibroids showed degenerative changes of a malignant nature. If one out of ten showed these changes they should seriously consider whether it was worth while to use this expensive *x*-ray treatment. More care should be exercised in ascertaining whether a growth was malignant; one should not jump at a conclusion at the time of operation without cutting open the growth. It was one's duty to open these tumors in the operating room.

Dr. William H. Wellington Knipe recalled a case seen some years ago in which a supravaginal hysterectomy was done for a large fibroid. About four months later he was called to see this patient and found a mass so hard that he thought he had to deal with a fecal impaction. He finally made a diagnosis of malignant disease of the rectum and sigmoid. At the time of the hysterectomy they did not suspect this condition; the broad ligament was filled with large vericose veins. In such cases the best plan was to consider the condition a malignant one and to do an extensive operation. In regard to the degeneration of fibroids into cancers, he recalled a case in which he suspected that this might have occurred and consulted Dr. Prudden, who made the statement: "These never degenerate into cancers." Dr. Knipe's opinion leaned to that of Dr. Prudden. In case of malignancy the cause might not be independent of the presence of fibroid, but might be due to irritation set up by the fibroid. He had never seen nor read of a case in which a fibroid nodule had been converted into a malignant tumor *per se*.

Dr. M. Rabinovitz said his experience had taught him that less than one in ten fibroids degenerated into malignancy and therefore it was impossible to lay down any fixed rules as to when to do a myomectomy and when a hysterectomy. He thought the age of the patient and her social position should be taken into consideration. If the woman was in the prime of life and desired more children or was a nullipara whose sterility might be due to the presence of fibroids the proper procedure was a myomectomy. In women approaching the fourth decade who could not be kept under observation hysterectomy was preferable. As to the question of the degeneration of fibroids, he had observed that the degeneration was limited to the tumor and only exceptionally did it extend to the uterus. Furthermore, the microscopical evidence was not always borne out clinically. He related two instances in which the pathologist's report on the scrapings was that of adenocarcinoma in which the patients had refused operation and no malignancy developed. The second patient died of an intercurrent disease and sections of the uterus showed no carcinomatous changes except in the curettings.

Dr. Franklin A. Dorman said that one of his colleagues had told him that he had met with two or three recurrences in the cervical stump. As a result that man employed retention of the stump and excision of the cervical mucosa. They should safeguard their patients and often a panhysterectomy was the operation to be preferred. If, as reported, 10 per cent. of these became malignant, this operation, he believed, gave them a better chance.

Dr. W. Travis Gibb said there had been a great deal of talk about adenocarcinoma of the fundus. This was a slow growth. Eighteen years ago he operated upon a patient who was about fifty-five years old. The curette went through into the abdominal cavity and he felt called upon to remove the uterus. It was his privilege to again see her eighteen years after the operation. In those cases where the fundus was involved he believed the cervix should be removed because it might become the focus for further development. Even when the fibroids were very small this should be the course to pursue. All had seen cases in which these small fibroids had been overlooked and, for that reason, he believed a panhysterectomy was the best operation. The proportion of cases that developed malignancy he believed to be very large. Greater care should be taken in making the diagnosis; many of the cases seen in the past were carcinomatous at the time of operation.

**Election of Officers.**—*Chairman*, Dr. George Gray Ward, Jr. *Secretary*, Dr. George W. Kosmak.

## SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Twenty-fifth Annual Meeting, Held at Old Point Comfort, Virginia, December 17, 18 and 19, 1912.*

The President, Dr. J. M. T. Finney, of Baltimore, in the Chair.

(*Continued from page 179.*)

**Proctoclysis; Experimental Study.**—Dr. Hugh Trout of Roanoke, Va., said in February, 1912, he presented a preliminary report of a comparative study of normal saline solution and tap water for proctoclysis in nearly one thousand cases. The present report was based on over two thousand cases and included all types of operations as well as replies received, from two hundred and thirty-two hospitals with the following deductions: "(1) There is no uniformity in preparing saline solutions in the various hospitals. (2) A soft rubber catheter is employed instead of a hard nozzle, and very seldom does the patient realize anything is in the rectum. (3) All sodium salts are toxic and quite frequently dangerous doses are being given by the rectum. (4) Tap water does not iritate the rectum, and patients will absorb one-third more than they will of salt solution. (5) It requires twice as much water by mouth to relieve thirst when patients are taking salt solution by rectum. (6) Salt solution does not seem to have any effect on the renal functional test of phenolsulphonephthalein. (7) Twenty-seven cases have tasted salt without knowing the character of the solution they were taking by rectum. (8) Fifty-eight cases have been operated on at other hospitals, and all have commented on the absence of thirst and decrease in nausea in comparison with previous operations. (9) Two hundred and eighty-seven operations on the perineum and rectum in which proctoclysis could not be employed, have been in the hospital during this period, and all showed a marked increase in thirst and nausea in comparison with other cases. (10) Four cases of death reported in the literature from the use of salt solution. (11) The giving of fluid by rectum meets nature's demands for the relief of postoperativ thirst in a simple, effective, and harmless manner."

Dr. J. Wesley Bovée of Washington, D. C., congratulated Dr. Trout on his work in this direction, because it was painstaking and thorough. He had no idea he would get nearly as good results with plain or tap water as with water containing salt, and he said this after having had a large experience in the use of salt solution.

Dr. Ernst Jonas of St. Louis, Mo., said they had been changing from saline solution in the rectum to plain water proctoclysis, and although he could not give the exact statistics he could confirm the very favorable report of the essayist. Patients had been much more comfortable. Edema of the legs had been observed less frequently.

Dr. F. W. McRae of Atlanta, Ga., said in one case he knew of a stronger salt solution was used instead of the usual dilute salt solution, and death supervened twelve hours later. It was a simple appendectomy where the nurse used a pint of the stronger solution.

Dr. F. W. Parham of New Orleans said that for some time he had been using very much weaker solution, namely, one-tenth of 1 per cent. solution, in place of the ordinary normal salt solution, but had not done it as systematically as the essayist, who had brought out clearly the advantages of using water in place of salt solution in most of these cases.

Dr. J. M. T. Finney of Baltimore had had the opportunity of seeing some of Dr. Trout's work and knew the care with which these observations had been made and the long series of cases which they covered make it a paper of great importance in view of his findings.

Dr. Robert Milne of London, England, said it would be interesting to know the temperature of the top water in the receptacle. At the London Hospital they gave salt solution as a routine for years, and in the receptacle the temperature of it was 105° until some one found that when the saline solution came out of the end of the catheter its temperature was only about 90°, that is, in running through a rubber tube three or four feet long the saline solution drops about fifteen or twenty degrees in temperature. Since then they usually kept it in a thermo-flask at the foot of the bed and kept it in that flask at a temperature of 120°.

Dr. O. H. Elbrecht of St. Louis, Mo., said if one would take a tube six feet long, which was about the average length of the tube which would he used for proctocylsis work, he would find there was a drop of 40° in tempera-

ture in the six feet of rubber tubing, with the water running at the rate of 60 drops per minute. This he simply used as a standard to gauge how much salt solution would run in in an hour.

Dr. W. P. Carr of Washington, D. C., had always been rather afraid of salt solution, especially used intravenously and subcutaneously, and he did not think he had given it intravenously in half a dozen cases, and he seldom used it under the skin. He was glad to hear of such gratifying results from the use of plain tap water.

Dr. Trout, in closing, said he had been able, except in a few cases, to get nine quarts of salt solution in the rectum. He had found drainage cases absorbed more than any other class of cases. He used 3,500 to 4,000 c.c. in the water cases, and with salt solution he used from 2,500 to 3,000 c.c. He gave it every two or three hours by catheter, would let it run in, and then take out the catheter.

**Acute Invagination of the Ileum Secondary to Sarcoma of the Small Intestine.**—Dr. C. Jeff Miller of New Orleans reported a case and said a search through the list of reported cases revealed only a few similar instances in which sudden acute symptoms gave the first warning of intestinal trouble. He found only three such cases in Moynihan's list. In the other thirty-seven cases symptoms of transitory abdominal pain, occasional vomiting attacks, and nausea preceded the recognition of the growth from a few weeks to over three years. If there could be a cardinal symptom it would be the presence of a tumor. It was present in over 90 per cent. of the cases when brought for examination or operation. It was always present in children and nearly as constant in adults. More than half the cases were reported in patients over forty years of age. Cachexia was only marked in children, except in the late stages. Fever was often present, as might be expected from the large percentage in which ulceration occurred. Constipation was not a reliable symptom, although often present. Diarrhea was noted in a few. Three cases had been reported as occurring in the ileum years after severe attacks of typhoid fever, and Nothnagel reports an instance of sarcoma that developed from tuberculous ulcerative scars. In thirty out of forty-six instances the growth was single, in sixteen multiple. It was curious to note the frequency of adhesions between the bladder and involved coil of intestine. In forty-six cases Lecene reports adhesions in twelve, seven of which were instances in which the bladder was the involved structure.

**Extrauterine Pregnancy.**—Dr. Stuart McGuire of Richmond, Va., reported five cases on which he had operated a second time for extrauterine pregnancy. He quoted Dr. Richard R. Smith, who tabulated 2,998 operations for tubal pregnancy, in which recurrence followed in 113 cases, or 3.8 per cent. He did not believe these figures represented the true frequency of the accident, as he thought it was impossible to follow up such cases accurately over a sufficient period of time to get final results. While he agreed theoretically with the rules laid down by Smith, he did not think they would prove of much service practically, as they left the decision of the question too much to the patient. A woman just before an operation for ruptured ectopic pregnancy was in no condition to understand or settle a complicated proposition. If she decided either for or against the removal of both tubes, she would in after life frequently regret the responsibility of the decision, fearing on the one hand a repetition of her former accident, or indulging on the other in morbid longings for a child whose advent she had made impossible. The operator should settle the question for himself, without taking the woman into his confidence, remembering all the time that a surgeon's and a patient's attitude to an operation was often very different, and that their estimate of the desirability of a baby was often very far apart. In deciding the question the surgeon should try to put the patient in the position of a member of his own family and ask himself, "what would I want done if this were my wife, or my sister, or my daughter?"

**The Indications for Abdominal Cesarean Section.**—Dr. Reuben Peterson of Ann Arbor said the more common indications for this operation were obstructions to labor, pelvic contractions, fibromyomata, ovarian tumors, stenosis of the cervix and vagina, and miscellaneous, such as previous ventrofixations, and large size of the child. Other indications were uterine hemorrhages, concealed accidental hemorrhage, placenta previa, constitutional crises, eclampsia, and contracted pelvis. Probably more cesarean sections would be performed for this indication than for any other. The operation was imperatively demanded in cases where the conjugata vera measured 7.5 centimeters or less and the child living. When the child was dead and the true conjugate was 6.2 centimeters or under, cesarean section was still indicated, on account of the danger to the mother of attempts to deliver the craniotomized child through such a small pelvic diameter. He was at present engaged in tabulating the results of 425 cases of eclampsia treated by abdominal cesarean section, and some very interesting facts were being brought out. Not only had the literature been carefully searched and all recorded cases been collected, but many operators all over the world had been kind enough to furnish him with unpublished cases. Thus the statistics represented not the work of a few, but over 200 operators. The total maternal mortality, counting patients operated upon before the aseptic era, was 36.9 per cent., while this was reduced to 31.8 per cent. if only the 317 patients operated upon since 1900 were counted. The 50 per cent. mortality ascribed to abdominal cesarean section in the treatment of eclampsia could be explained by errors in the selection of cases, for many eclamptic patients were subjected to the operation who were hopelessly septic. These patients did not die from the eclampsia or the operation itself. Many of them perished because of the poor judgment on the part of the operators. They would have died even if the operations had not been performed for eclampsia. In 245 cases of eclampsia, where there was no sepsis or very little chance of it prior to the abdominal cesarean section, the maternal mortality was only 24 per cent. It was significant that in fifty cases where operative procedures preceded the cesarean sections the maternal mortality was 48 per cent., the difference in mortality being due not to the eclampsia, but to the sepsis accompanying the eclampsia, a condition which could be avoided once this relation of sepsis to cesarean section was fully realized by the profession. The results of abdominal cesarean section for eclampsia, so far as the fetus was concerned, should be and, as a matter of fact, were, gratifying in the 425 cases. In 217 cases since 1900, where the fetal statistics could be studied, the fetal mortality was only 5.5 per cent. Even this mortality was reduced to 3.7 per cent. in 132 cases where the sections were performed after from one to five eclamptic convulsions. These statistics were quoted to show that the last word had not been said regarding the place of abdominal cesarean section in eclampsia. At last the statistics in over 400 cases had shown beyond a doubt that no one was justified in dismissing the treatment of eclampsia by abdominal cesarean section with a short statement that the mortality was so high as to make it an unjustifiable operation.

**Abdominal Pregnancy with Living Child.**—Dr. J. Shelton Horsley of Richmond, Va., reviewed the literature on abdominal pregnancy with a living child and reported a case. From 1809 to 1912 there were 103 cases on record. Regarding those cases as entirely successful in which both mother and child were saved, and the child living a year after the operation, there were five such cases. The author reported a case which fell within these requirements. The patient was a colored woman in whom pregnancy was supposed to be normal until her physician was called in at about full term. He recognized abdominal pregnancy, as the uterus was empty. Dr. Horsley did an abdominal section and delivered a male child, well formed, and weighing six pounds. The mother made a satisfactory recovery, and a year after the operation both mother and child were well.

**Iodine in the Treatment of Infections and in the Preparation for Surgical Operations on the Generative Organs of Women.**—Dr. J. Wesley Bovée of Washington, D. C., stated that the conditions in which this treatment was applicable were: (1) Acute infections of the vulva, vagina, urethra, and the whole of the endometrium. (2) Acute peritoneal infections with proper limitations. (3) Chronic conditions following infections of these structures and of the tubes, ovaries, and pelvic peritoneum. (4) In pelvic surgery requiring examination manipulations or operations on or through the vagina. (5) In such procedures as required opening the cervical canal or uterine cavity from either the vaginal or peritoneal side. (6) As a routine method of preparation of the field of operation on all these structures as well as the rectum. For several years he had confined the treatment of recent and remote Neisserian infection of the vulva, urethra, vagina, and cervix to the application of iodine. He had great confidence in the efficacy of this remedy when applied early. If the condition might be treated before the infection had passed into the uterine cavity or the gland of Bartholin, it could often be eradicated by one thorough painting of the exposed areas below the uterine cavity. If the first application failed, a second made three days later commonly succeeded. In pelvic surgery that required examinations, manipulations, or

operations on or through the vagina, this plan of local sterilization was far superior to any other he had used. The importance of the vaginal application of iodine was emphasized in the radical operation for cancer of the cervix uteri. The high mortality from infection of the peritoneum as a result of breaking of the specimen during its removal and resulting leakage was a striking feature of the recent report of Wertheim's work in this field. This sad complication was best obviated by the use of the iodine to both the vagina and endometrium, preceded by galvanocauterization, with or without curettage, if excrescences or craters be present. Since the etiology of cancer was not known, he would warn against driving any cancer material beyond the uterus by employing considerable pressure in injecting that organ.

**Which Is the Best Operation for Cancer of the Uterus?**—Dr. HERMAN J. BOLDT of New York stated that vaginal extirpation of a carcinomatous uterus gave a lower primary mortality, particularly the method of vaginal hysterectomy generally employed, than the extended abdominal hysterectomy. It must be conceded, however, that in cancer of the cervix the percentage of recurrences was larger after cancer operations where vaginal hysterectomies were done. When one decided upon vaginal extirpation, the technique devised by Schauta of Vienna, whereby the ureters were exposed and the uterine arteries isolated and tied, so that the parametria might be extensively extirpated, was the method that should find preference. The paravaginal section, which was a necessary accompaniment of the operation, would, if surgical precautions were used, give no more trouble than any ordinary wound. With the paravaginal section one secured satisfactory access to the field of work, which, without it, would be a physical impossibility. Despite its great superiority over the regular hysterectomy, the method of hysterectomy usually employed, it should be limited to obese women, the incipient stages of epithelioma of the vaginal part of the cervix, and to cancer of the body of the uterus, when the uterus was freely movable. It was particularly applicable in the cases of the aged, because of the greater sluggishness of the lymphatic system in persons well advanced in years. Generally speaking, however, the extended abdominal operation should be done unless there was a contraindication for doing such an extensive operation. One could undoubtedly remove more parametrium through the abdominal route. Furthermore, one could inspect the glands and extirpate them if the abdomen was opened, which could not be done when the vaginal route was used. The remote results showed that if the abdominal operation be done properly, the ultimate percentage of recoveries from cancer of the uterus was fully 50 per cent. more than by the vaginal route. But one must really do the extended operation, not the original panhysterectomy first done by Freund for cancer of the uterus.

**Fatal Hemorrhage from Erosion of the Gastroduodenal Artery by Duodenal Ulcers.**—Dr. JAMES E. THOMPSON of Galveston, Texas, had seen two fatal cases of bleeding from duodenal ulcers in spite of the operation of gastroenterostomy. In both cases the ulcer was situated on the posterior surface of the first portion of the duodenum, and in both the hemorrhage which proved fatal came on at a time when it looked as if the patients would recover from the operation. The first patient died thirty-four hours after the operation with all the symptoms of concealed hemorrhage, but as no autopsy was allowed, one could only surmise from the poistion of the ulcer that the gastroduodenal vessel was eroded. The second patient lived forty-two hours after the operation.

Dr. RANDOLPH WINSLOW of Baltimore reported a case of complete anterior dislocation of both bones of the forearm at the elbow.

**Solitary Cysts of the Liver.**—Dr. HENRY NORRIS of Rutherfordton, N. C., reviewed the literature of these cysts, and reported a case.

Dr. DYER F. TALLEY of Birmingham, Ala., reported a case of large cyst of the uterus and reviewed the literature on the subject.

Dr. W. P. CARR of Washington, D. C., described an operation for the correction of flat-foot, which was the result of traumatism.

**A Sign of Diagnostic Value in Obscure Cases of Chronic Appendicitis Elicited by Rectal Palpation.**—Dr. FRANCIS REDER of St. Louis, Mo., stated that in the more obscure forms of chronic appendicitis, where other points had failed, he had been able to make an absolute diagnosis through a point located in the first portion (sigmoidal portion) of the rectum. These cases belonged to a class whose symptomatology did not invite attention to the appendix region on account of the total absence of focal symptoms. In many of these cases pressure at McBurney's point had not given the reflex pain that was expected and usually obtained in a lesion of the appendix of this character, while pressure at Morris' point had proven equally as negative. An absence of these reflexes was usually sufficient to dismiss the thought of an existing appendix lesion. The point in the rectum, however, had invariably given a positive reaction in the presence of a chronically diseased appendix. The part of the rectum concerned in this examination was the first portion. It began at the sacroiliac synchondrosis, usually the left side was entirely covered with peritoneum, and had a mesorectum which gave that portion of the bowel a certain amount of mobility. This mobility was of some value in the examination. Within the lumen of the bowel at the junction with the sigmoid about three and a half or four inches above the margin of the anus, there existed aggregations of circular fibers that formed a valve. This valve was constant, was known as the valve of O'Beirne, and varied but little in its distinctive circular characteristics. This valve served as a landmark and was an important factor in the examination. In making the examination to reach the points, the patient was comfortably placed on the examining table upon his back with both legs flexed. The index finger, well lubricated, was introduced into the rectum, and a search made for O'Beirne's valve. This valve was sometimes reached with some difficulty, especially when it was located high, or when the examining finger was rather short. It was absolutely necessary that the valve be located. Its recognition was readily perceived; the sensation imparted was very similar to that which the examining finger experienced when introduced into the os uteri during the first stage of labor. In size, he had found the valve to vary in some as large as a ten cent piece, and in others as large as a quarter. The valve having been located, the finger was hooked into it and gentle traction made upon the structures to test the mobility of that portion of the rectum. The tip of the finger was allowed to rest within the lumen of the valve, and the patient asked if he experienced any pain. The answer was usually no. Should there be any pain, it was generally referred to the sphincter area of the rectum. By allowing the finger to rest for a short time this pain would subside. After being assured of the total absence of pain by the patient, the tip of the finger was gently pushed upward toward the right iliac fossa, when, in the event of a lesion of the appendix, the finger would touch a point beyond the valve that would cause the patient great pain. As a control maneuver a similar point might be touched by sweeping the examining finger toward the left inguinal fossa, usually with negative results. The accuracy of the diagnostic value of this point had been verified in some two hundred cases. The patients comprising this series gave a period of time when their health was not good ranging from six months to twelve years. After removal of the chronically diseased appendix, the patient was fully restored to health within a period varying from three months to two years.

**A Study of Unilateral Hematuria of the So-Called Essential Type.**—Dr. R. L. PAYNE, JR., of Norfolk, Va., and Dr. WILLIAM DE B. MACNIDER of Chapel Hill, N. C., reviewed the literature on this subject and reported five cases of unilateral hematuria of the so-called idiopathic type, which were relieved of all symptoms by nephrotomy. The authors were inclined to believe that in the majority of these cases of unilateral hematuria the condition was one of chronic inflammation of one type or another, and detailed a series of experiments which apparently excluded as a causative factor certain acutely developing vascular changes. These experiments would, therefore, apparently contravene Klemperer's theory of angioneurotic edema, and also Albarran's idea of a slight lesion of nephritis being a sufficient cause of the unilateral hematuria.

**Suppurative Pylephlebitis.**—Dr. CHARLES R. ROBINS of Richmond, Va., related in detail a case of suppurative pylephlebitis which occurred in his practice in 1911. In this case Van Cott's vaccines were used. In all, twenty-eight doses were given. It seemed to him that these vaccines caused improvement for a time, but finally the patient's abdomen was opened in two places, and it was found the fluid had become purulent. The patient gradually declined and died after an illness of one hundred and fifty days. In view of the fact that this malady was usually rapidly fatal, and that no plan of treatment had yet effected a cure, he thought treatment along this line by vaccines offered the only hope, and the apparent success of these vaccines noted at one time in this case was most encouraging.

(*To be concluded.*)

## Miscellany.

**A Great Physician of the Middle Ages.**—One of the famous Jewish physicians of the Middle Ages was Moses Ben Maimun, commonly known as Maimonides, who was born at Cordova, then one of the greatest centers of Arab culture, in 1135 or 1139. He was educated there, and after wandering about for several years with his family he became physician to Saladin, whose name is well known owing to his relations with Richard Cœur de Lion. Maimonides records that every morning he went to the palace, and if any of the numerous officials and dependents there were ill he had to prescribe for them, getting back to his own house in the afternoon, "almost dying with hunger." There he would find, in his own words, "Jews and Mohammedans, a varied crowd who are seeking my medical advice. There is scarcely time for me to get down from my carriage and wash myself and eat a little, and then until night I am constantly occupied so that from sheer exhaustion I must lie down. Only on the Sabbath day have I the time to occupy myself with my own people and my studies, and so the day is away from me." Maimonides wrote on philosophy as well as medicine. The most interesting of his writings was a series of letters on dietetics written for the son of Saladin, who seems to have been something of a neurotic, suffering from indigestion, constipation, and depression. The rules laid down by Maimonides have become part of the popular medical tradition. In view of the originality claimed by so many minor prophets of the present day for views that are almost as old as disease, it may not be amiss to give a summary of a few of them. "We should eat and drink only when hungry and thirsty, and should be particularly careful of the regular evacuation of the bowels and bladder. The inclination should as far as possible be satisfied at once. A man must not overload his stomach, and should not drink much during the meal, and only of water and wine mixed. Food should be taken always in the sitting position. There should be no riding or walking or movement of the body until digestion is finished. We should sleep for eight hours, and so arrange our sleep that the end of it comes with the dawn, so that from the beginning of sleep until sunrise there should be an interval of eight hours. We should eat what is easily digestible before what is difficult of digestion—the flesh of birds before beef, and the flesh of calves before that of cows and steers. In summer we should eat cooling food, acids, and no spices. Special care should be taken to have regular movements of the bowels. Every medical means should be taken to overcome constipation. Immoderate eating is a poison to men and the cause of many of the diseases that attack them. Most diseases come from eating either too much or unsuitable food. Every week at least a man should take a warm bath. He should not bathe when hungry nor after eating till the food is digested and should bathe the whole body in warm but not too hot water, and the head in hot water. Afterwards the body should be washed in lukewarm water, and finally cold water should be used. Bleeding should not be frequent; it is only meant for serious illness. After the age of 50 there should be no bleeding. Whoever observes these rules of life faithfully will live long without disease, and in the fullness of his years he will die a natural death. Only the healthy should keep these rules. Whoever is ill or a sufferer from any injury or has lost his health through bad habits, for him there are special rules for each disease only to be found in the medical books. Every change in a life habit is the beginning of an ailment." Maimonides rejected astrology and was never afraid to say he did not know anything. He died in 1204, and his thought had a great influence on philosophy as well as medicine.—*British Medical Journal,* January 11, 1913.

**The Doctors of the Sultan.**—The difficulties that beset the Turkish empire and its ruler are at present attracting the attention of the outside world. It is not without interest to learn about the medical attendants at the Porte. These are numerous and belong to various ranks. The chief physician is Dr. Biringi Pasha, next comes Dr. Hechinge Pasha, the third is Dr. Uchingi, and the fourth is Dortingi Pasha. There are many others. While the duty of the medical staff is to visit the infirmary of the seraglio twice a day, the especial task of Dr. Biringi is to look after the health of the Sultan and his favorites. In the case of any grave illness of one of the Sultan's concubines, the visit of the doctor to the harem is made with considerable ceremony. Accompanied by the captain of the eunuchs and by an aged female attendant of the harem the physician is brought to the presence of the patient and inquires briefly as to her illness. If it is necessary to feel her pulse the patient's forearm must be covered with a veil. If any other part of the body must be examined this must also be sedulousy concealed.

An anecdote related of Abdul Hamid conveys an idea of the manner in which the medical practice of the palace is carried out. A daughter of Hamid had an attack of appendicitis. The Sultan, who had not sufficient confidence in the physicians of the palace, summoned von Bergmann from Berlin. But this condition was imposed upon the eminent German surgeon: before the latter would be permitted to operate upon the Sultan's daughter he would have to operate on another case of appendicitis in the presence of the Sultan. This was accordingly done. Even then the Sultan hesitated in granting his consent to have his daughter operated upon. A certain Turkish physician was then called in who promised to cure the girl without an operation. He kept her for a few days on a diet of olive oil and figs. The appendicular pain disappeared and the one who effected this magic cure was given the title of Biringi Pasha.—*Revista Ospedaliera,* December 15, 1912.

**Enthusiasm in Medicine.**—T. F. Reilly notes that there is no other profession in which enthusiasm thrives more easily than in medicine. Every patient is different, every patient is a new disease in himself. There is no room for ennui. When a botanist finds a new specimen, as he rarely does, his enthusiasm and pleasure are unbounded; how much more interesting should be the finding of a human specimen differing from his fellow in structure and disease. This enthusiasm is the best antidote for the blues. Lack of enthusiasm does not inspire confidence. No other profession or vocation offers the same variety of themes as is provided by the profession of medicine. From the spiritual and moral standpoint there is no vocation in which one can do so much good and none in which one can so well relieve pain both mental and physical. To do this effectively the physician should take good care of his own health. The laity believe that he carries some charm to ward off disease. The only charm that he carries is good habits and hygienic living.—"Building a Profitable Practice."

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## Original Articles.

### GENERAL ANESTHESIA BY THE INTRAVENOUS ROUTE.

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LIKE many discarded or forgotten surgical procedures which, when revived, interest the medical profession by the charm of apparent novelty, general anesthesia by the intravenous route seemed to come as a surprise to surgeons and anesthetists who honored our clinics with their presence whenever this method was employed. According to Page[1] Oré, in 1872, was the first to establish the possibilities of this procedure, using chloral hydrate as the hypnotic agent with considerable success in 51 cases. Further experiences, however, showed that either the method or the drug employed possessed certain dangers, and after a few fatalities he discontinued its use. In 1909, Burckhardt,[2] after extensive animal experiments, became enthusiastic over the intravenous method and attempted its use on the human subject, using chloroform at first but soon discarding it for ether, which he found quite as efficient, and much safer. At the Berlin Surgical Congress in 1910, six surgeons of prominence corroborated the success of Burckhardt, Kümmel reporting 90 cases in his own experience, believing that it was particularly useful in aged and cachectic individuals.

Later, Fedoroff[3] of St. Petersburg collected 530 cases from 3 Russian clinics, in which hedonal had been used in the same way and, although the cases embraced all kinds of surgical operation, there were no deaths attributable to the anesthetic. Eight cases of temporary respiratory arrest, however, yielded to simple methods of artificial respiration. Up to this time, the method of induction of anesthesia in this manner was somewhat crude, as Kümmel pointed out, not free from danger, particularly of thrombosis. Burckhardt employed a simple infusion apparatus from which a mixture of a 5 to 7½ per cent. of ether in normal saline solution was allowed to flow through a cannula into a convenient vein, usually the median basilic, until a sufficient narcosis was established to proceed with the operation. The flow was stopped by compression of the rubber tube, connected with the cannula, until the patient began to show signs of returning consciousness, when the solution was again admitted to the circulation, and so on until the operation was completed. Fedoroff and his colleagues used a 0.75 per cent. of hedonal in normal saline solution, in much the same way except that the cannula was entirely withdrawn from the vein to be reintroduced into a fresh one when more anesthesia was required. Kümmel sought to obviate the danger of thrombosis by providing two tanks, one with normal saline and the other containing the anesthetic solution, both being connected with appropriate control stop-cocks and a Y-connection so that, even though the anesthetic solution was cut off, the normal saline flow could be continued, and thus the circulation in the vein at no time be absolutely stopped. This method did not give a smooth, even anesthesia and finally Rood[4] devised a most ingenious apparatus, safe, simple,

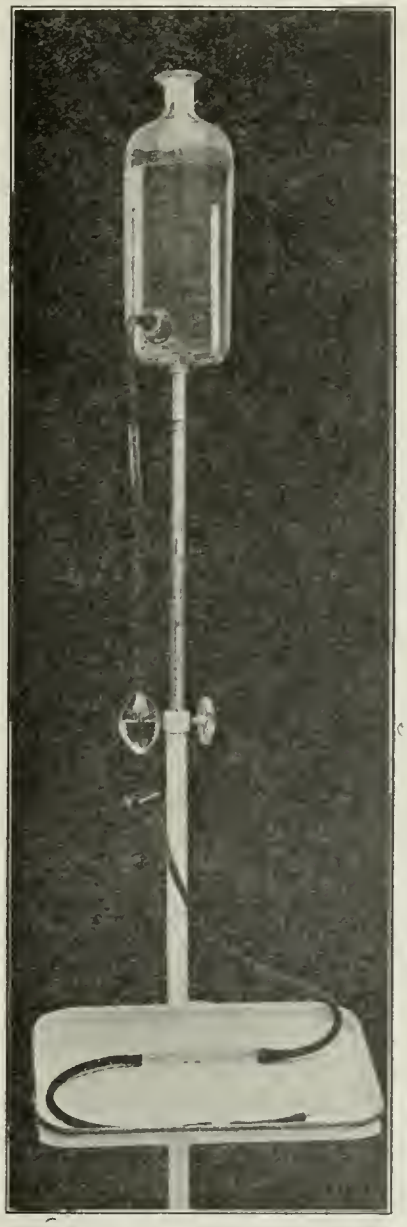

FIG. 1—The apparatus for the intravenous administration of anesthetics.

and efficient, which has answered all the requirements for maintaining a continuous, easily regulated flow, which may be kept at a uniform temperature, and places the degree of narcosis quite within the easy control of the anesthetist.

We have constructed such an apparatus, largely from materials at hand, with a justifiable spoliation of some of our other equipment, which has embodied all of the essential features of Rood's valuable suggestions, so that the use of this method of anesthesia does not necessitate a very expensive outlay.*

It should be understood at the outset that this procedure is not urged to supplant any of the well-recognized forms of anesthesia in general use, nor do we entertain the hope or belief that it will become the method in universal use. We are convinced, however, that, with further experience and development, its efficacy and safety will assign it a definite field of usefulness. In the generally employed method of respiratory anesthesia, some volatile agent is introduced into the circulation by way of the lungs, the rate of introduction being affected by certain variable factors, the energy and depth of the respiratory effort, laryngeal and respiratory spasm, the condition of the bronchial mucous membrane, and the skill of the anesthetist. There are, of course, many other conditions which modify the amount of anesthetic required to produce surgical narcosis in a given subject, but those mentioned are present as variable factors in every case where the indirect or respiratory method is employed. It is manifestly clear that, under these conditions, in every case of anesthesia produced in this way, more of the anesthetic is introduced into the body than is necessary, the excess is stored up in the tissues to be gradually eliminated, a matter of several days duration, with often the unpleasant, if not serious consequences, which mark the toxic effects of the drug employed. The delayed effects of anesthetics, after narcosis and after the patient has recovered from the shock, and other more or less immediate results of the operative procedures are worthy of closer and more extended study. It is reasonably certain, in the minds of most observers, that acute yellow atrophy of the liver (or a poisoning of the hepatic cells and interference with their metabolic activity), injuries to the myocardium, and the developments of a state of acidosis allied to diabetic coma, are occasional late sequences of chloroform administration. The well known irritating effects of ether upon the respiratory apparatus and the kidneys are well understood. The evil effects of any anesthetic do not depend upon the amount taken into the lungs but the amount absorbed from them by the blood, and again the amount absorbed by the tissues from the blood, and especially those tissues of the nervous system which are intimately associated with vital functions.

It must be borne in mind, as pointed out by Buxton,[5] that, if the administration of an anesthetic is kept at the same level, narcosis will deepen, and if the anesthetic is a stimulant, such as ether, the initial stimulation of the nervous system gives rise to an ever-increasing exhaustion. If the anesthetic is a depressant, such as chloroform, its maintenance at the same level of strength will turn depression of function into profound exhaustion. However slight may be the degree of respiratory failure, it leads to diminished pulmonary ventilation, and this to lessened oxidation which, with failing blood pressure, causes the tissues of the body to be enfeebled to the point of being rendered moribund.

The correct interpretation of the situation is the recognition by the anesthetist of the fact that, when once a level of narcosis sufficient for the purposes of the surgeon is reached, very little anesthetic is necessary to maintain that equilibrium once it is established, and that, so long as the tissues are not over-narcotized, the cells will part with the anesthetic and regain their normal physiological status when the administration of the drug is withdrawn.

In the employment of intravenous anesthesia, the agent is directly introduced into the blood, a minimum amount is used, it is maintained there at a certain definite percentage, and its employment can be withdrawn abruptly without storing up in the body reservoirs such excess as may subsequently prove harmful to the patient. In this method the production of anesthesia is very rapid, the preliminary state of excitement is nearly always absent, the patient breathes almost naturally, the color of the skin remains good, and the relaxation and flexibility of muscles are absolutely satisfactory to the operator. The degree of narcosis can be maintained to a nicety and at the completion of the operation the patient often answers questions rationally before leaving the operating room, and returns to bed with better physical signs than before the anesthetic was administered.

It cannot be too strongly urged that, for the successful induction of this form of anesthesia, very careful attention must be given to what are apparently trifling details of the technique. The failure to recognize this fact has been the reason of only partial success in the hands of some of our interested confrères.

For the intravenous use of ether, the patient, having been prepared, is taken, about forty minutes before the time for operation, to the anesthetizing room and placed preferably upon the operating table which is to be used during the operation. A subcutaneous injection of scopolamine, gr. 1/100, atropine sulphate, gr. 1/100, and morphine sulphate, gr. 1/6 is given in one dose, preferably in the loose tissues of the chest or abdomen. From this time until the actual anesthesia is accomplished, it is extremely advisable to keep the patient as quiet as possible so that the administration is begun with the patient in a condition of reposeful relaxation of mind and body. This precaution materially shortens the first stage, induces prompt anesthesia with the least amount of solution, and economy in this direction is much to be desired.

A 5 per cent. solution of ether, with filtered sterile normal saline solution at a temperature of 85° is poured into a reservoir, which has a capacity of 2000 c.c. and which is adjusted on a stand eight feet above the floor level, at which point it remains during the administration. The fluid flows through an indicator (which contains a pipette), then through a warming chamber into a blunt cannula and so into the vein. The indicator consists of a cylindrical or globular bulb of a capacity of from 2 to 4 ounces with an inside pipette, very much such as is used in Murphy's apparatus for proctoclysis. When the apparatus is working properly, the lower half of the indicator is filled with solution while the upper half contains air. The solution flows from the tank through the pipette and drops on the surface of the fluid in the lower half of the indicator. By means of a compression tap,

*The Kny-Sherer Co. of New York has made a very satisfactory apparatus, after our designs, for intravenous infusion anesthesia.

placed below the indicator, the rate of flow can be accurately controlled, and if the fluid in the bulb is kept at a proper level a satisfactory index is furnished as to the rate the solution enters the vein. As ether boils at 98.6°, it is very important to keep the solution below that point, as the agent is so volatile that it usually vaporizes and escapes if the temperature is raised even for an instant above 95°.

Usually the arm furthest from the operator is selected and bound at the wrist to a padded splint which extends under the body to the opposite side, the weight of the body holding it in place. Or the arm may be bound lightly to a splint extending from wrist to axilla and resting on a table of convenient height. This effectively prevents flexion of the forearm. The bend of the elbow is wiped with a 5 per cent. solution of thymol in carbon tetrachloride, which is preferable to the usual iodine application, as it is more effective as a disinfectant, and as it does not discolor the skin, the position of the vein is easily determined. After anesthesia of the skin is induced by one-half of one per cent. solution of cocaine, the median basilic vein is exposed through a small incision one-half to one-third of an inch long, and a double catgut ligature passed beneath it.

Fig. 2.—Induction of anesthesia by intravenous injection.

The distal one is tied and the ends left long and handed to an assistant, who uses it as a tractor. By lifting on both ligatures, the vein is lifted from its bed, and with scissors is incised through about one-half of its diameter. Into this opening in the vein, a small, blunt cannula is introduced and tied with the proximal ligature.

The solution should be administered at a full flow at the beginning, the anesthetist reducing the stream at the appearance of the usual signs of surgical anesthesia. It is quite as incumbent upon the anesthetist to take the usual precautions to secure and maintain an unobstructed air-way and efficient respiratory act, as in the usual method of anesthesia. Ether is rapidly eliminated by the lungs in this method, and, as is true of all methods, efficient respiration prevents accumulation and tension on the tissues, increases its output, and lessens its toxicity. In from one to five minutes anesthesia will be complete and the operation may proceed.

It is highly important, as was noted above, to be economical in the use of the anesthetic solution; the patient should be placed in the appropriate position for the intended operation, the operative field draped, the skin disinfection completed, and the surgeon absolutely ready to make the initial incision when the cannula is inserted into the vein. There is a limit to the patient's tolerance for even salt solution, and it is very desirable that any portion of the period of anesthesia be not wasted upon preparation but reserved solely for the actual operative technique. When the degree of narcosis is obtained which varies somewhat with the nature of the operation, the flow into the vein is reduced by the control-cock just below the indicator. It may be allowed to drip in a very fine stream or at the rate of 40 to 60 drops per minute, the corneal reflex affording a reliable guide for administration. The anesthetist readily becomes acquainted with the effects of the drug by this method, and as narcosis can be absolutely and beautifully controlled, there is no need for any embarrassment to the operator from involuntary muscular contractions. Again let it be urged that careful attention be directed to the maintenance of an open air-way, and as the muscles of the jaws and neck are very much relaxed, the tongue should not be allowed to drop back into the pharynx. It is more important to attend to these respiration precautions than if the patient were being anesthetized by the inhalation method. We advocate a continuous flow in intravenous anesthesia, no matter what agent is employed as the hypnotic, though a few times we have interrupted the stream for a few moments without any appreciable harmful effect. At the conclusion of the operation unless it has been quite prolonged, particularly if ether alone has been used, the dressings should be applied before the flow is actually stopped, as the return to consciousness often comes very promptly and the patient may resist efforts to finish the toilet of the incision properly. No blood changes, different from what occur from intravenous infusion of salt solution plus inhalation ether anesthesia, have been observed in any of our cases. The blood pressure rises slightly with the use of ether in this way—we use it preferably in the old and cachectic patients, avoiding its use in young, full-blooded, or alcoholic subjects.

Oozing is more noticeable, perhaps, in the operative field, and, if the cavity of the abdomen is the seat of the operation, fluid rapidly accumulates there. If extensive adhesions are to be dealt with, the fluid rapidly becomes blood-stained, and there might be instances where this might embarrass and delay the operator, but we have not been so troubled. The patient may be brought from one degree of anesthesia to another very rapidly by the judicious use of the control indicator, and it is well that the operation be entirely finished and dressings applied before the administration is stopped, as the patient returns to consciousness very quickly.

The employment of ether in this way seems almost devoid of danger, from either immediate or remote complications, notwithstanding the fact that the infused fluid must be kept at a temperature not higher than 90°. Ether boils at 98.6° and escapes from the solution as gas, and the failure of some

of my confrères to induce anesthesia, after seeing demonstrations of the method, has been due to the failure to observe this simple physical fact. We have had no case of chill or fever follow 1800 c.c., administered at a temperature of 90°. This is about the only essential precaution in the intravenous administration of ether.

Hedonal, or methylpropyl-carbinol urethrane, is a white crystalline solid stable powder, soluble in water at a temperature of 100°. In doses from 15 to 30 grains, it has been very successfully used as a pure hypnotic. It is, to some extent, a diuretic, does not depress the action of the heart and, in lethal doses, destroys life by respiratory arrest. No fatalities attributed to the use of hedonal as an hypnotic have yet been reported.

For the induction of anesthesia, the drug is dissolved in a normal saline solution at a temperature of 70° to make a 0.75 per cent. solution. The resultant fluid is filtered and brought to a boiling point; we prefer not to boil five minutes, as recommended by Page,[1] as some of the efficiency is lost by volatilization of a certain amount of the compound due to prolonged boiling. The tank is filled, and when ready to begin, the fluid should be about 115°. The same method as used with ether is employed, the fluid being allowed to run in rapidly. Greater caution is necessary with hedonal than with ether, the effect is much quicker, and on the appearance of signs of deep narcosis, the stream is reduced until it flows guttatim from the pipette in the indicator. The patient quickly becomes drowsy, the face flushes or, if the flow is too fast, may be slightly cyanotic, the pupils usually contract, the muscles relax, the corneal reflex is absent, and the patient seems to be in a condition of sound normal sleep, without the noisy respiration of an anesthetic. Observation of the corneal reflex determines the rate of flow which, after a little experience, can be regulated to the satisfaction of operator and anesthetist. After operations lasting from fifteen minutes to one-half hour, the patients often wake quite promptly, but with large administrations they may sleep six to twelve hours, during which time they may be awakened but they readily fall asleep again. The blood pressure always falls with the use of this drug in this way. In one of our demonstrations before the Society of New York Anesthetists, we purposely seleced a patient with a very high blood pressure (186 mm.) which promptly came down to 142 mm., and so remained for several days after operation. In all we have had 78 administrations without a fatality and without a complication worthy of mention, a transient diarrhea in our very first ether case, and a slight bronchitis in a frail subject after the removal of a colloid goiter weighing nearly two pounds. The class of cases has been those that have come in ordinary general hospital service—laparotomies for uterine fibroids, pyosalpinx, ovarian cyst, appendicitis, uterine suspension, hernia, joint resections, arthroplasties, amputation of thigh, bone plating operations, plastic operations on cervix and perineum, removal of laryngeal growth, goiter, extensive secondary carcinomatous glands of the neck, carcinoma of tongue and face, operations for varicose veins, and castration. The case of ovarian cyst was noteworthy—a woman æt. 67, had been tapped 36 times. The cyst wall weighed 15 pounds and, though some of the contents was lost, ten gallons were actually measured. Ether was used in the case, the anesthesia was a perfect success, the patient showing no untoward symptoms at the end of the operation, notwithstanding the sudden withdrawal of so much fluid and the last operation record was comparable to that of a minor operation.

One of us (Hassler) prefers ether on account of its efficacy and safety, but the other one (Honan) favors hedonal as possessing most of the characteristics necessary for this form of anesthesia. It can be sterilized, is stable, capable of accurate dosage, prompt, efficient, reduces blood pressure, and, more important, seems to fulfill the purpose, as expressed in Dr. Crile's idea of anoci-association, of preventing cerebral bombardment by shock impulses. There is no question but that the appearance of the patients after operation indicates that this contention is probably true. It has been suggested that the use of hedonal in this manner may be extremely useful in controlling the convulsions or uremia, particularly of the puerperal type. Its sedative action, its power to lower the blood pressure, and the diluting and eliminating effect of the saline, or preferably an isotonic glucose solution in this instance, opens up a field in speculative therapeutics that might prove of inestimable value.

We have also experimented in five cases with paraldehyde, using it alone and with ether. Ether has always raised the blood pressure from 2 mm. to 20 mm. while, with hedonal, it falls from 10 mm. to 12 mm. One case, as noted above, purposely selected with a blood pressure of 186 mm., dropped to 142 mm. and remained at the lower level for some hours. There have been no evidences of hemolysis, other than occurs in ordinary saline transfusion, or in the respiratory method of giving ether. Hedonal seems particularly well borne so far as the blood picture is concerned. In a subsequent paper, this part of the subject will be particularly discussed.

The time required to produce complete anesthesia ranged from one and one-half to twenty-three minutes with ether, while with hedonal the time was from twelve seconds to four minutes. We kept one patient under ether for one hour and twenty-eight minutes, using 2,100 c.c. of solution (about 3 oz. of ether); another with hedonal, 175 grains in 1,600 c.c. of solution. No case of right heart dilatation was noted, though the Trendelenburg posture was used in cases for which it is adapted. The cases were marked by absence of nausea and vomiting in every instance, comparative freedom from post-operative pain, absence of thirst, rapid restoration of functional activities of the body. The mental status, particularly after the use of ether, is markedly clear, the patients are happy, and those who have experienced other forms of narcosis, express a preference for the intravenous method of anesthesia.

Continued experiences make us think well of paraldehyde 2½ per cent. and ether 3 per cent. in normal saline solution. No preliminary hypodermic medication is necessary, the narcosis is quick, smooth, the color of the patient remains good, and no unpleasant after-effects have been observed. This combination seems to occupy a place between ether and hedonal.

In order to secure a more uniform saline solution, which will be of a definite strength and correspond more nearly to the chemical composition of the blood, we are about to use Ringer's solution.

Through the courtesy of Prof. Baskerville of College of the City of New York, and Dr. James T. Gwathmey, we find that, in water at 60° F., ether is soluble in about eight times its volume and it

should be mixed at that temperature in the tank and should be gradually raised to a temperature of 90° F. in the warming chamber.

In a subsequent article, we hope to present more or less complete records of blood pressure observations, hemolysis, etc., which have been made, with much care and interest, by Drs. Coombs and Patterson, of the Metropolitan House Staff.

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## A PRELIMINARY REPORT OF OPERATIONS UNDER EXTRADURAL ANESTHESIA.

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This method of anesthesia first suggested itself to me when I was making some experiments with Dr. Baldwin of Professor Stockard's staff, with the object of developing a method of blocking the sympathetic in order to obviate shock in the combined operation for cancer involving the rectum and sigmoid. We knew when we began these experiments that this could be accomplished by hypodural anesthesia, but wanted to discover a method which, while as simple, was less dangerous. (Our method of blocking will be described in a subsequent article.)

The essential points to be considered in anesthesia are: First, safety; second, efficiency, and third, a minimum of after complications. Therefore, any method of anesthesia which combines these qualities must of necessity be of infinite value and have a definite advantage over all other means of anesthesia thus far employed. In the limited experience I have so far had with extradural anesthesia, it seems to embrace all the requirements just mentioned. It has also the great advantage, not possessed by other methods, of preventing shock. Its only disadvantage, so far as we can see, is that its field of usefulness is limited to the lower portion of the body, below the fifth lumbar vertebra, but even with this limitation its simplicity, with perfect anesthesia in a region where sympathetic fibers and ganglia abound, and where shock was formerly an unavoidable feature of the operation, places it in the front rank of surgical procedures.

Intraspinal anesthesia, while it meets all the requirements, is fraught with considerable danger to the patient and can be applied only by those who have had a very wide experience. Even in the hands of the most skillful accidents happen on account of some slight disturbance of the spinal or medullary centers. For instance, a certain increase of pressure, even the slightest, has been shown by Carter to be exceedingly dangerous because of the mechanical effect of the increase in the spinal pressure, causing cessation of respiration quickly followed by cardiac inhibition and a sudden fall in blood pressure. There is also the danger of infection to be considered. For these reasons spinal anesthesia has a very limited field of usefulness.

Nitrous oxide, supposed to be the safest of all anesthetics, is very far from being so if one is to judge by the statistics at present available. Heretofore, the belief in its safety has been due in a measure, I think, to the fact that it was very little used and when used was always given by one skilled in anesthesia. Its usefulness is limited, also, because there are a number of contraindications to its use which I will not go into in a paper of this kind.

Ether, the next safest anesthetic, has a mortality of one in ten thousand, with a possibility of postoperative delayed poisoning, with an action on the liver somewhat similar to that of phosphorus.

Chloroform is much more dangerous and has a much higher mortality than ether, and when used with old people under prolonged anesthesia, is likely to be followed by more complications than ether. However, all these anesthetics have served our purposes for many years and their use will not be supplanted by any other methods of anesthesia to any great extent, I fancy. Besides, it will be admitted by all that in certain conditions a general anesthesia is a necessary evil. On the other hand, any method or procedure that will take the place of general anesthesia, even though it has a limited field of usefulness, is bound to be of great benefit to humanity.

Anoci-association, a term coined by Crile to describe any means by which the patient can be placed in the best possible condition to withstand shock, includes cheerful surroundings, suggestion, morphine and hyoscine before operation, etc. Anoci-association has always been practised more or less by surgeons and should be considered as a necessary prophylactic or preanesthesia measure in all cases.

The method which we are about to describe is absolutely free from danger; it insures a perfect anesthesia, prevents shock, and allows of any surgical procedure below the cul-de-sac of Douglas. It can be used in any of the following procedures: cystoscopy and operations on the urethra, prostate, perineum, rectum, and lower extremities.

Before describing sacral anesthesia a brief outline of anatomical conditions is necessary. Piersoll says:

"The spinal cord (medually spinalis) is that part of the central nervous system, or cerebrospinal axis, which lies within the vertebral canal. Its upper limit, where it becomes continuous with the medulla oblongata, is in a measure conventional, since there is no demarcation on the cord itself to indicate exactly its junction with the brain. Accurately considered, the superior limit of the cord may be assumed to correspond with the emergence of the uppermost root-fibers of the first spinal nerve which pass out between the atlas and the skull; this level also corresponds to the lowest strands of the pyramidal decussation of the medulla oblongata and to the upper border of the posterior arch of the atlas. For practical purposes, however, the lower margin of the foramen magnum defines with sufficient accuracy the upper limit of the spinal cord. Below the spinal cord terminates somewhat abruptly in a pointed end, the conus medullaris, that usually ends opposite the disc between the first and second

lumbar vertebræ. The level to which the cord extends inferiorly, however, is subject to considerable variation, very rarely being as high as the middle of the body of the last thoracic vertebra (Moorhead) or as low as the upper border of the body of the third lumbar vertebra (Waring). In the female subject the spinal cord, although absolutely shorter than in the male, extends to a relatively lower level in the vertebral canal. Marked bending of the spine produces slight alterations in the position of the cord, during strong flexion an appreciable ascent of the lower end taking place. The relation of the cord to the vertebral canal varies at different periods. Until the third month of fœtal life the cord occupies the entire length of the canal, but subsequently, owing to the more rapid lengthening of the spine than of the spinal cord, the latter no longer reaches to the lower limit of the canal, and therefore apparently rises, so that by the sixth fœtal month the lower end of the cord lies opposite the first sacral vertebra, and at birth terminates usually on a level with the body of the third lumbar vertebra.

"The Membranes of the Cord. The spinal cord, together with the roots of the thirty-one pairs of spinal nerves, lies within the vertebral canal enclosed by three protecting membranes, or meninges, which from without inward are (1) the dura mater, (2) the arachnoidea, and (3) the pia mater, all of which are directly continuous through the foramen magnum with the corresponding coverings of the brain. The external sheath, or theca, formed by the dura, is a robust fibroelastic tubular envelope, much longer and considerably wider than the cord, that does not lie against the wall of the vertebral canal, but is separated by an interval containing thin-walled plexiform veins and loose fatty connective tissues.

"The Dural Sheath, about .5 mm. in thickness, extends to the level of the second sacral vertebra and is, therefore, considerably longer than the spinal cord. The part of the sac not occupied by the cord encloses the longitudinal bundles of root-fibers that pass obliquely to the levels at which the corresponding nerves leave the vertebral canal, and a fibrous strand, the filum terminale, prolonged from the cord to the lower end of the spine.

"The Pia constitutes the immediate investment of the cord, and supports the blood vessels destined for the nutrition of the enclosed nervous cylinder. The pial sheath is composed of an outer fibrous and an inner vascular layer, the connective tissue of the latter accompanying the blood vessels into the substance of the cord.

"The Arachnoid, a delicate veil-like structure made up of interlacing bundles of fibroelastic tissue, lies between the other two membranes and invests loosely the inner surface of the dura and closely the outer surface of the pia. It effectually subdivides the considerable space between the external and internal sheaths into two compartments, the one beneath the dura, the subdural space being little more than a capillary cleft filled with modified lymph, and the other, the subarachnoid space, between the arachnoid and the pia, containing the cerebrospinal fluid. The spinal cord, therefore, hangs suspended within the tube of dura, surrounded by a cushion of fluid—an arrangement well adapted to insure the nervous cylinder against the injurious effects of shocks and of undue pressure during changes in the position of the spine. Both spaces, but particularly the subarachnoid, are crossed by fibrous trabeculæ and thus imperfectly subdivided into secondary compartments, all of which are lined with endothelium."

We have examined a number of cadavers, and taken measurements at different points to establish, if possible, a fairly accurate method by which the opening into the canal can be located. At first measurements were taken from the posterior superior spine of the ilium to the tuberosity of the ischium on both sides, but the bisection of these lines did not come anywhere near the opening. The next measurements were taken from the posterior superior spine of the ilium to the left margin of the sacrococcygeal joint, and the same on the other side, and we found the opening of the canal, in the majority of cases, to be where these two lines bisect.

The spine of the sacrum is usually bifid, and does not reach within an inch of the sacrococcygeal joint. Under such circumstances the insertion of the needle is a comparatively easy matter. In other cases the opening is close to the sacrococcygeal joint, and the safest plan to follow then is to locate the sacrococcygeal joint and insert the needle at this point and follow the bone closely, and the needle is bound to enter the sacral canal. One can easily tell if the needle has entered the sacral canal by moving it back and forth, when the bony structure will be felt if the needle is in the canal, and if not the needle can be readily felt under the skin. Of course, in a very fat subject it is possible to make an error, but even under these circumstances it can be demonstrated that the needle is in the canal by bending the outer portion inward and trying to pass the point through the skin, when, if under the skin, it will pass out, and if in the canal it cannot pass out. If the needle is very long, however, and it is passed to one side, it is quite possible to pass it through the skin above the crest of the ilium.

The safest method to adopt, especially by those who are not very familiar with this procedure, is to make an incision a little in front of the sacrococcygeal joint, and if necessary extend it until an opening is found. This can be done under local anesthesia.

The point at which the needle is to be inserted is first decided upon. This can be determined by following the sacral spinus processes until they are found lacking. Slightly above this point will be found the opening of the canal. If, as happens in most cases, we have a bifid spine, the ridges can be easily felt, except in very fat subjects. If the canal opens near the sacrococcygeal joint this point is selected. Then, having first determined the point at which the needle is to be inserted, and this is always in the median line, it is painted with tincture of iodine. Next, a little ethyl chloride is sprayed on the skin and a hypodermic syringe, containing a solution of 1-500 cocaine, with an ordinary hypodermic needle, is next employed in order to anesthetize the skin over the area in which the needle is to be inserted, so that a small incision can be made without causing any pain. It is always better to incise the skin in order to obviate any chance of infection.

The following procedure is used in passing the needle. The needle is grasped in the right hand, and the index finger placed close to the point. It is then passed at an angle of about 15° until the bone is reached. The needle is then passed close to the bone until it has been entirely inserted for

about 1 inch. At this juncture it is well to pause and determine whether the needle is in the canal or not. This can be determined, as we said before, by moving the needle back and forth, up and down, and from side to side. If it is in the canal the wall will be found on all sides, and if not the needle will pass readily through the skin.

When the needle is found to be in the canal about 4 c.c. of the same solution is deposited on each side. This is usually sufficient.

After this has been done the trocar is reinserted in order to prevent the escape of fluid, and the needle, with the trocar, allowed to remain in position until anesthesia is established. The reason for this is because if the anesthesia is not established after 15 minutes it may be necessary to inject 1 or 2 c.c. more, and this is made much simpler if the needle has been left in place.

It is important for the fluid to be absolutely sterile and freshly prepared; also of the same specific gravity as the blood in order that it may be readily absorbed.

After anesthesia has been established the needle is withdrawn, and some cotton and collodion placed over the wound. The patient is then placed in whatever position is desirable in order to perform the operation, and the rest of the procedure depends on what particular operation has been undertaken. If a prolonged anesthesia is necessary, urea and quinine may be substituted for cocaine. I have not as yet determined how much urea and quinine is necessary in order to produce complete anesthesia, or what would be the duration of the anesthesia under this process. I shall work this out later on.

We have used this method of anesthesia in seven different cases, and in all but one the anesthesia was perfect and all that could be desired. In the one failure it was done very hurriedly and the procedure abandoned; then a general anesthetic was given because of the nervousness of the patient. We did not inject a sufficiently large amount of the solution, so this case should not be included.

One case in particular was very interesting. The patient was a young man of twenty-three years with a carcinoma involving the prostate and rectum. We were able to dissect the rectum and remove the prostate with absolutely no pain. However, when the dissection was almost completed and we were ready to separate the rectum from the peritoneum we encountered some pain and pronounced shock by pulling on the rectum. He also had severe pain when an attempt was made to cut the peritoneum with the scissors. Before proceeding farther we had to give the patient a general anesthetic in order to complete the operation.

From this case we learned a lesson, namely, that operations involving the peritoneal reflexion are impossible with sacral anesthesia. If I had used my usual procedure of blocking the hypogastric ganglia above I could have completed the operation without further pain. The shock which occurred when I pulled on the peritoneal reflexion was due to pulling on the lumbar and inferior mesenteric plexus of the sympathetic, and to the fact that we had not blocked this point.

The other five cases were operations involving the rectum only, and all were accomplished with the greatest ease to the operator and comfort to the patient. In no instance did we use more than 1/6 grain of cocaine, and that amount was used in the operation which involved the removal of the rectum and prostate. The point of interest in connection with this case is worth mentioning. Before dissecting the rectum free from the urethra and the removal of the prostate, one of my assistants tried to pass a sound into the bladder. Some difficulty was experienced on account of a posterior stricture. After gentle manipulation we succeeded in passing the sound into the bladder, and during all of this procedure the patient had not the slightest sensation of pain or discomfort.

The value of this method, therefore, in cases of stricture of the urethra in hypersensitive individuals in whom it is necessary to explore the urethra or the bladder can easily be understood. Especially will it be found serviceable in old men on whom it is necessary to do a prostatectomy, or with any procedure involving the urethra or bladder.

NOTE.—Since this article was written we failed, in five cases, to find the canal; but since improving our technique we have succeeded in getting perfect anesthesia in the three cases that followed.

57 EAST FIFTY-SECOND STREET.

## EXPERIMENTAL PSYCHOLOGY AND MEDICINE.*

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WHAT I wish to say on my specific topic must be prefaced by three preliminary remarks. First, the psychology which one has in mind when he speaks of "applications" is not the sort of psychology which limits itself to the introspective analysis of the elements of consciousness and the forms and patterns of their combination. The sort of psychology that admits of application is the larger science which occupies itself with the behavior of organisms in so far as that behavior is paralleled by consciousness or is directly conditioned by the activity of the nervous system. Two forms of behavior are to be distinguished in the subject matter of this science of psychology. The one is constituted by the behavior of mental processes and the mechanisms of consciousness; the other, by the motor behavior of the organism and the mechanisms of activity. Under the first topic we study such functions as sensation, imagery, association, feeling, emotion, impulse, etc. Under the second such topics as habit, instinct, attention, fatigue, learning, work, practice, reaction, etc.

In the second place I shall refer throughout not to what professional psychologists have done, but to all work that can properly be called psychology in the light of the definition I have just given. Much psychological work has been done by medical investigators, but their work is none the less psychological because of the mere fact of their medical training. Lester Ward is an eminent botanist, but his many important sociological studies are not for that reason to be credited to the science of botany.

In the third place, what I shall have to say must relate only to the specific contributions of the science of psychology to the foreign fields in question, not to the general cultural contributions arising from increased knowledge, training, and experience along psychological lines.

Further, a distinction is to be made between a

*The first half of a paper on "Modern Psychology in Medicine and Law," read, by invitation, before the Society of Medical Jurisprudence, New York City, November 11, 1912.

science as a body of doctrine or knowledge, the *content* aspect, and the same science as a point of view, a system of technique and procedure, a basis of classification of phenomena, the *methodological* aspect. In some cases the *usefulness* or *application* of a science involves chiefly the content aspect, as when chemistry is applied in manufacturing, mining, illuminating, or in the various arts. In other cases the application may be chiefly one of methodology, as in the application of mathematics and statistics to insurance, finance, navigation, and sociology.

A science, that is to say, is on the one hand a more or less unique method or set of methods of controlling or examining phenomena. On the other hand it is a more or less systematic array of facts, data, and laws, acquired or established by the use of some such methodology. The incidental applications of the science may be based on the methodology, or on the resultant knowledge, or on both. In a discussion of the extrinsic usefulness of any given science it is well to bear this in mind, and any attempt to extend the application of such science should be supported by discernment of the direction in which the possibilities are conceived to lie. A mere ardor to be of service is bound to prove either inadequate or mystifying.

From the point of view of method and from the point of view of content, then, what have been the psychological contributions to law and medicine, and what further serviceableness may we reasonably expect? I may say at once that in so far as law and medicine have profited from their utilization of psychology, this profit has been chiefly by way of methodology and technique. In so far as there has been any interchange of content, psychology has been far more greatly blessed in her receiving than in her giving. Medical clinics and legal practices have been drawn on freely for data, problems, suggestions, and illustrations, and psychology still shows, in many quarters, pronounced anatomical, physiological, and clinical leanings.

The affiliation of psychology with medicine is of necessity a most intimate one, and this has long been recognized. Lotze's "Medicinische Psychologie" on the one hand and Tuke's Dictionary of "Psychological Medicine" on the other, bear testimony to this affiliation. Or we may pair off in much the same way the various text books of physiological psychology, written by psychologists, and the books on abnormal psychology, written for the most part by medical men. The Vienna and Zurich schools of psychiatry make much use of psychanalysis, which, in its various forms, is but an elaboration of classical experiments of the psychological laboratories. On the other hand men whose chief interests are psychological are seeking and being appointed to research positions in connection with many of our leading hospitals. All of these facts indicate that psychology and medicine are, in part at least, joint tenants of some common ground of content or of method. I hope some time to hear a medical man discuss the contributions of his science to psychology.

It has seemed to me that the contributions of psychology to medicine may be presented under five chief headings. I shall briefly point out these five groups, illustrate them, and indicate whether the contribution is chiefly of content or of method.

I. *Psychological Researches on Patients.*—Three subdivisions may be pointed out here:

(*a*) The mental and motor behavior of patients, as studied by psychology, reflects their organic condition. Knowledge of this condition may be useful to the physician, particularly if it is a nervous disorder that is involved. As an illustration of this type of work I may refer to the recent studies by Dr. F. Lyman Wells, of MacLean Hospital, on the behavior of manic-depressive patients in such performances as speed of tapping, speed and quality of association, sensory discrimination, distraction, etc. Interesting correlations are found between performance in the tests and organic condition at various times in the history of the case.

(*b*) Knowledge of the normal types and range of variation in mental processes may prove of great assistance in diagnosis of supposedly abnormal cases, and may be of general use in clinical procedure. As illustration of this field I may cite the work of Kent and Rosanoff on the association reactions of normal and abnormal individuals. A list of 100 test words was arranged, and the free associations to these 100 stimulus words, in the case of 1,000 normal people, were experimentally determined. When the character of these associates was studied it was found possible to make out normal tendencies in the case of each stimulus word, and also a normal range of variability within this tendency. When these associations were classified according to quality, under such headings as rhyme, neologism, perseveration, individual reactions, etc., the association types of normal people could be made out. The same test words were then given to 247 patients, suffering from the various forms of insanity, and these associations similarly studied. Comparison of these results with the results secured from normal subjects, enabled the investigators to draw such conclusions as the following: "With the aid of the frequency tables and the appendix normal reactions, with a very few exceptions, can be sharply distinguished from pathological ones. The separation . . . simplifies the task of analysis and makes possible the application of a classification based on objective criteria. . . . In dementia præcox, some paranoic conditions, manic-depressive insanity, general paresis, and epileptic dementia the test reveals some characteristic, though not pathognomonic, associational tendencies." Further studies of this sort are in progress; they are at once thoroughly psychological and medically useful.

(*c*) Psychological examination may often be valuable in measuring or demonstrating the efficacy of various treatments for abnormal physical condition. I may give by way of example the psychological examination of hook-worm patients now being made by Dr. E. K. Strong. By a series of tests Strong is measuring the mental alertness and capacity of children who are about to be placed under treatment. At the same time he examines in the same way a control group of healthy children living under the same general conditions. After the treatment both groups of children are to be re-examined by the psychological tests and determination made of such change in mental condition as may be produced—in the normal group by mere repetition and normal growth, and in the abnormal group by these factors plus medical treatment for the disease.

These three subdivisions constitute my first heading, "Special Researches on Patients." Such contribution as psychology may be making to medicine in this field of work is chiefly a contribution of content. But the psychological content is used by the medical man merely to reinforce or supplement his own methods and technique.

II. As a second general heading I suggest *"The Psychological Researches on the Influence of Drugs on Mental and Motor Processes."* Here medicine must be said to owe a great deal to psychology. And the chief contribution has been by way of perfected methods. By way of illustration one need only compare the unreliable, roughly made experiments of Kraepelin and his earlier students with recent work by Rivers and with certain rigorously controlled investigations which have been carried on in my own laboratory. The trouble with the earlier workers was that they knew too little about psychological laws, psychological sources of error, and the technical cautions which must be observed in conducting crucial experiments on mental and motor reactions. Later workers have been more familiar with these factors, and they have drawn their knowledge not at all from the field of pharmacology but directly from the psychological laboratory. Four points may be noted as especially important in the improvement of scientific technique in drug experimentation.

(*a*) *The importance of controlled conditions.* This is, of course, a most obvious factor. However, in many sciences the general conditions are so stable and uniform that many of them may be practically disregarded for the purposes of a simple experiment. Thus the temperature of the room, the day of the week, the noon-day menu, the sex of the operator, and a hundred other conditions are irrelevant to the outcome of an experiment in physics. But in a psychological experiment these factors play an important rôle. One need go back only so far as the time of Kraepelin's drug experiments to find men investigating the influence of tea and coffee in the evenings of days on which the subjects of the experiments had taken both strychnine and alcohol, experimentally, at an earlier hour. We now know, and partly as the result of work done in psychological laboratories, that the primary influence of so mild a drug as caffein may persist for twenty-four hours or more.

(*b*) A second important point in technique, the recognition of which is at least in part due to the influence of psychological methods, is the *necessity of a control squad.* You may recall the account of the control group of normal children in the case of the experiments with the hookworm children. In the case of my own experiments on the influence of caffein, a control squad ran through the entire experiment, covering a period of six weeks, taking daily doses, along with the other subjects. But these doses, although this was known to no one but the director of the experiment, consisted of nothing but sugar of milk. This is of course only another point under the general one of controlling the conditions, and it enables the investigator to compare his drug records with records of undrugged subjects acting under the same conditions of practice, excitement, suggestion, interest, ennui, fatigue, diurnal variation, etc. This again is a most obvious point, yet only a year ago I heard a medical expert of repute assert that a certain drug produced congestion of the cerebral blood vessels, because an animal which had been fed on this drug was found to have congested cerebral vessels after having been killed by a blow on the head. A control animal, which should be struck on the head but not fed the drug, seemed not to have been even considered, although the experiment was deliberately planned and in an important connection.

(*c*) The *importance of control doses* may also be pointed out. The medical experiments on drugs, until within quite recent years, proceeded by administering, at a known time, a known drug to a subject who was aware of the whole situation, and who had his own prejudices and opinions, was open to all manner of suggestion, and who was at any rate more or less interested in the outcome of the test, and, perhaps, excited at the thought of taking the drug in question. Yet any change in performance, under these gross conditions, was likely to be attributed to the direct action of the drug. It was not until Feré, a psychologist, demonstrated the stimulating effect of the mere act of swallowing, or, indeed, of simply holding a drink of whiskey in the mouth, thus getting odor, taste, and any conceivable amount of suggestion, excitement, etc., and until Rivers, another psychologist, wrote his illuminating paragraphs on the technique of drug experimentation, that medical experimenters came to realize the importance of the two factors of sensory stimulation and suggestion.

(*d*) The fourth point in technique is concerned with the *standardization of tests.* Many of the tasks set the subjects of drug experimentation before the psychologists addressed themselves to the standardization of series of tests for definite functions or processes, measured processes which varied not only from individual to individual but even from moment to moment or from day to day with a single individual. The much-used cancellation test is an instance of such an ambiguous task. It must be said that a great deal remains to be done in the way of standardization of tests, but the point to be made here is that it is work which must be done by psychological workers, and which when done, will represent a valuable contribution to the equipment of medical workers.

III. As a third general topic I may mention *Psychanalysis.* Here again, so far as psychanalysis is a contribution of psychology, it is purely methodological in character. The psychanalysts proceed on the assumption that emotional experiences and complexes, which persist in an unclear or subconscious way—fears, wishes, etc.—are nevertheless active determinants of action, thought, and feeling. They act chiefly as disturbers; they disturb our sleep by dreams; they disturb our daily life by producing phobias, obsessions, dissociations, amnesias, slips of hand and tongue, etc. Furthermore, by the simple association experiment, skillfully conducted by an experienced analyst, it is claimed that these complexes may be discovered, brought into clear consciousness, and dissipated, and the sufferer thereby relieved. The work of Freud, Jung, Janet, Brill, Jones, and others may be cited here. It must be said that psychologists are by no means unanimous in their reaction toward the claims and interpretations of the psychanalysts. But the lack of unanimity of individual psychologists is one of the things that makes the science interesting. We must say at least that in so far as psychanalysis throws genuine light on the causes, conditions, and prognosis of functional disorders, and in so far as its utilization affords relief which ordinary therapeutic measures fail to give, it represents a real contribution to medical science. And it, again, is chiefly a methodological contribution.

IV. *The Use of Psychological Agents* (Psychotherapy).—This fourth general topic is one on which I might be expected to dilate at great length. It is the one about which most has been written, and which is, I think, quite commonly supposed to con-

stitute the most important direction in which psychology may contribute to medicine. But it seems to me to be, at the present time at any rate, one of the minor issues. Suggestion, hypnotism, reeducation, synthesis, clarification of complexes, association, and dissociation are the words which come to all of you as I read. That some of them are psychological words there can be no doubt. That they represent genuine mental processes, states, or functions, and that psychologists are interested in discovering and formulating their laws, must be granted. But it is equally certain that no little obfuscation has been caused by pseudoscientific writers who have attempted to arouse dramatic interest in certain phenomena of fatigue, automatism, drowsiness, and hysteria, and have drawn into their service in this attempt the occult suggestions which formerly emanated from the words suggestion and hypnotism. As for the terms reeducation and synthesis, they are not, properly speaking, psychological at all, but represent large and practical processes, with little attempt at psychological analysis, description, or formulation. And as for the last two processes, association and dissociation, psychology has done little more than incorporate in its own literature fragmentary clinical pictures and speculations indulged in by medical investigators. The processes intended by the words suggestion, reeducation, synthesis, etc., in the books on psychotherapy really move on the same plane, psychologically, as do such expressions as: Lend a helping hand, give direction, set a good example, give encouragement, provide an incentive, take a little exercise, arrange for new surroundings, jog the memory, etc., etc. All of these phrases, it is true, emphasize the mental functions of a psychophysical organism rather than its physiological processes. This emphasis is, perhaps, responsible for the first two syllables of "psychotherapy." And it follows, of course, that acquaintance with the laws of mental and motor behavior and with the elements, attributes, patterns, and genesis of mental processes is favorable to satisfactory work on this plane, as it is also in teaching children, hunting wild beasts, and selling goods. My point is that the use of these psychological agents does not require any very profound knowledge of the refinements of modern psychology—the contribution of psychology to medicine at this point is not specific in character, but is rather the general contribution to which I referred earlier in this paper. I fell impelled to add that the contribution here will become more and more specific when psychology begins to occupy itself more with *the way in which mind works*, and less with *what is in the mind* at the moment of its operation.

V. The fifth and final field in which I seem to find psychology making specific contribution to medicine may be designated *Determination of the Organic Conditions of Efficiency*. The contribution here is peculiar in that it may often appear to be but a contradiction of the deliveries of medical science. I shall call your attention to but two subdivisions of this general topic—fatigue and periodicity.

(*a*) The investigation of muscular fatigue is so near the border line of physiology and psychology that little need be said of it here. Perhaps the one important point is the fact that psychological studies tend constantly to emphasize the importance of purely mental factors in the production of supposedly muscular inefficiency; such factors as ennui, loss of interest, the inhibitory action of sensations of strain, habit, and the general level of fatigue sensation, etc. The distinction between actual exhaustion and mere cessation of work because of psychic inhibition, a distinction constantly exemplified during psychological investigations of fatigue and work, would seem to be important in medical diagnosis and therapeutics.

With respect to mental fatigue, the net outcome of psychological studies up to date is that the more muscular fatigue is eliminated from a given task the more unfatigueable does the process become. This is often expressed by saying that purely mental fatigue has never been satisfactorily demonstrated. Of course, it is also true that no purely mental process has ever been isolated. There seems to be little doubt that by the cooperation of medical science with psychological investigation information may ultimately be secured concerning the nature and causes of fatigue which will be of service to both fields of work.

(*b*) But nowhere is psychology more at variance with medical science than on the question of the relation between organic periodicity and psychomotor efficiency. By way of illustration of this variance I may refer to the declarations of the periodic inefficiency of women, declarations in which medical and semi-medical books abound. I shall not entertain you with the many available quotations from general writers, but shall present two or three statements direct from the pens of eminent medical men, and contrast these statements with the results of carefully controlled psychological experiment.

Max Runge, a gynecologist of Göttingen, wrote in 1900: "An experienced observer will be able to note many interesting phases of the mental changes in women at menstruation. Even though scientific experiments are as yet lacking, it may nevertheless be stated that a very great number of healthy women are mentally different during menstruation. . . . All demands on her strength must be remitted . . . for several days she is enfeebled."

Icard, writing in 1890, concludes: "The psychical and physical state of woman during the menstrual period seems to me to constitute one of the chief reasons why she should not administer public affairs. Indeed, one cannot depend on a health so fragile and so often disturbed; the errors of judgment and the false valuation so often made at that time prove that women are unable to undertake comfortably and successfully that which should be the exclusive lot of the strong sex. The menstrual function may, especially in the class of the predisposed, induce sympathetically a mental state varying from a slight psychosis . . . to absolute irresponsibility. Such is the proposition which I lay down, and which I shall endeavor to demonstrate. . . . I shall cite in support of my thesis the opinions of the most famous authors.* I shall from time to time let the ancients speak. . . . I have consulted distinguished alienists, father confessors, the directors of convents, superintendents of boarding schools and homes of refuge, midwives, women of the world. . . . I can do no better than resay badly in prose what Alfred de Musset has said so well in verse. . . ." And authors writing as late as 1909 refer to Icard's work as the most authentic and reliable discussion of the subject!

Ellis, although not a medical man so far as I am aware, writes on the basis of considerable familiarity with medical literature as follows: "It is but the

*Meaning the romantic novelists.

outward manifestation of a monthly physiological cycle which influences throughout the month the whole of a woman's physical and psychic organism. Whatever organic activity we investigate with any precision we find traces of this rhythm. While a man may be said, at all events relatively, to live on a plane, a woman always lives on the upward or downward slope of a curve. This is a fact of the very first importance in the study of the physiological or psychological phenomena in women. Unless we always bear it in mind we cannot attain to any true knowledge of the physical, mental, or moral life of women."

Mosher's experiments on blood pressure are often cited in evidence of this periodicity. But the writers who quote Mosher seem not to have observed that the investigator also studied blood pressure in men, and states in the original report: "The daily records of the blood pressure . . . on men and women under similar conditions of life and occupation give curves apparently indistinguishable in character."

In striking contrast with these assertions of periodic psychical changes dependent on organic rhythms, allow me to quote by permission from the manuscript of a recent and as yet unpublished experimental study on "The Alleged Periodic Inefficiency of Women." This investigator has tested, under controlled conditions, four subjects for a period of four menstrual periods, measuring the efficiency with which various mental and motor tasks could be performed. The tests included steadiness, speed of tapping, fatigue, speed of perception (color naming), and association time (naming opposites). The quotation is as follows:

"As is obvious, these results (from so few subjects) are by no means conclusive, but they are suggestive. They show at least what happened in the only cases that have ever been experimentally investigated. The results may be briefly and specifically stated as follows:

"Careful and exact measurement does not reveal a periodic mental or motor inefficiency in normal women. No part of the period is affected except that there is some evidence that on the first day motor ability is slightly improved and involuntary tremor lessened. Physical suffering seems to affect association processes adversely, judging from two instances here recorded where suffering was experienced on the first day. The variability of performance is not affected by physiological periodicity. No regularly recurring period of maximum efficiency within each month is discernible, except that in the tapping test there is an uncertain suggestion that the time of greatest speed is at the beginning of the period. The "cycle" referred to by Ellis and others is not discovered by methods of precision, except the vague suggestion of a regularly recurring maximum of motor speed mentioned just above. No agreement is established between curves previously platted for pulse, blood pressure, temperature, etc., and the curves of the mental and motor traits here tested."

I shall not attempt in this connection to settle the dispute over the question of periodicity in mental and motor capacity as dependent on organic rhythms. Nor shall I consider the reliability of other reputed rhythms, diurnal variations in efficiency, periodicity in men, etc. The important point is that the findings of modern experimental psychology, based on the examination of normal people, are on many of these points much at variance with the generalized clinical findings of medical men.

My general conclusion is, then, that the chief contribution which psychology has made and may be expected to continue to make to medical science is methodological in character. There seem to me to be two principal reasons for this:

In the first place, the experience and training of the medical student are largely clinical. This means that his observation is for the most part of pathological conditions. He may easily fail to acquire sufficient information concerning normal types and the direction, conditions, and range of normal variability. Such knowledge, which might well be partially furnished by adequate psychological training, might at least warn him of the fallacy of generalizing clinical findings.

In the second place, the medical course as it is now offered seems to provide little training in exact and purposive experimentation. An excessive proportion of the student's time seems to be occupied with the memorizing of anatomical minutiæ, the most of which are straightway forgotten, the disciplinary value of which is at least questionable, and the content of which is always accessible in the manuals. It seems to me, for these reasons, that one of the most fruitful contributions which psychology may *yet* make to medicine may be a rigorous, specially adapted full-year course in experimental psychology, which should be incorporated at an early point in the curriculum of the medical school. The content of such a course should be determined largely by medical men, but much stress should be laid on methods and technique of arriving at experimental certainty, avoiding logical fallacies and inductive errors, and of adequately controlling the grounds of inference under circumstances in which very slight factors may play important rôles.

By way of concluding this paper, let me remind you that I began by pointing out the distinction between the method and the content of psychology. I then proceeded to give what must be admitted to be a very incomplete and partial statement of the contribution of modern psychology to medicine. This contribution was found to be for the most part a contribution of method rather than one of content, although useful material of the latter sort was not found to be wholly lacking. The reason for this fact is undoubtedly to be found in the youthfulness of that type of psychology which I have had in mind throughout the greater part of this paper. That psychology is perfecting its methods of examination, control, inference, and verification to a degree that is unusual in the natural sciences may be taken to be a hopeful sign of the wealth of material contribution which may be made to the purposes of practical living, when psychology has outgrown its adolescence.

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**Uricemic Valvulitis.**—M. Chiray and J. Bailleul state that the heart complications of gout belong to two large categories. These include respectively functional and trophic disorders. The first comprises modifications of rhythm: palpitations, bradycardia, arrhythmia, attacks of false angina; while the second includes manifestations of cardiovascular sclerosis; chronic myocarditis, coronaritis, and valvular lesions of arterial origin. In addition to these relatively frequent complications there are others, more rare, to which the authors give the name "uricemic valvulitis." The lesion consists of an infiltration of the valves with uric acid crystals.—*La Presse Médicale.*

# TREATMENT OF BENIGN PAPILLOMATA OF THE URINARY BLADDER WITH THE OUDIN HIGH-FREQUENCY CURRENT INTRODUCED THROUGH A CATHETERIZING CYSTOSCOPE.*

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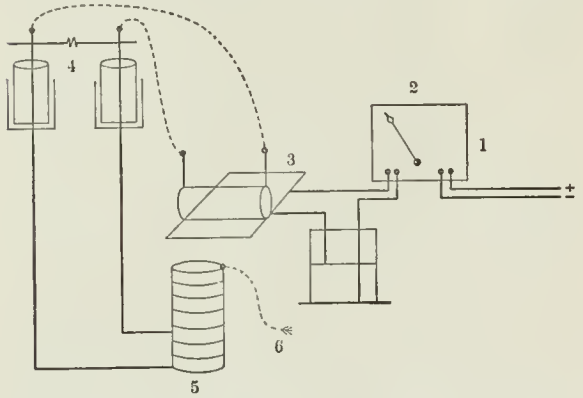
It is universally admitted that the successful operative eradication of papillary growths of the urinary bladder is very difficult to accomplish. The great frequency of recurrences after all types of operative attack has for years so clouded the clinical picture that surgeons were inclined to accept the statements of Rokitansky and of Guyon, that all papillary growths were clinically as well as pathologically malignant.

In very recent years, due to the excellent work of Nitze, the profession is beginning to realize that the transurethral approach to bladder papillomata gives by far the best results and that the old view as to the malignancy of all papillomata is incorrect. Being firmly convinced of the absolute correctness of this latter viewpoint, *i.e.* that there is a distinct pathological and clinical difference between malign




The High Frequency Apparatus. 1, Represents Source of Current (Street); 2, Rheostat, Meter, Etc.; 3, Induction Coil and Interrupter; 4, Condenser and Spark Gap; 5, Oudin Resonator and Terminal; 6, Electrode Delivering the Oudin Current

and benign papillomata, I turned my attention some four years ago to working out a transurethral technique which would be effective and at the same time much simpler than that employed by Nitze and others who have followed in the lines indicated by him (Casper, Blum, Kutner). My efforts were stimulated greatly by the fact that I had good reasons, both clinical and pathological, to think that benign papillomata were much more frequent than was generally admitted.

Ever since February, 1910, I have been using the Oudin high-frequency current in treating benign papillomata of the urinary bladder, passing my electrode through the catheter tunnel of a catheterizing cystoscope, and applying the current directly to the growth. The method of procedure has been carefully described in the *Journal of the American Medical Association* (May 28, 1910), in the *Zentralblatt fuer Chirurgie* (No. 34, 1910), and in the *Annals of Surgery* (August, 1911). In this as well as in the report presented before the annual meeting, June, 1912, of the American Medical Association, the results obtained up to date by myself and some other surgeons have been brought together.

*Technique.*—The essential instruments for this therapy are: (1) a high-frequency machine with Oudin resonator,* (2) a catheterizing cystoscope, (3) a heavily insulated copper electrode.

To produce the current essential to the therapy discussed in this paper, I have used the high-frequency apparatus manufactured by Wappler. The Oudin current is derived from the resonator, and is unipolar, thus allowing of the use of only one intravesical electrode. The current oscillates very rapidly and is of very high voltage. The source of the original current may be the usual street current. If this does not alternate the high-frequency machine must be fitted with an alternator. The accompanying sketch, taken from de Keating Hart (1908), shows diagrammatically how the Oudin current is generated from the street current.

The Oudin current has been known for some fifteen years and has been used with varying success in a number of skin conditions. Of late it has been used in malignant disease by de Keating Hart. Almost all workers with this current have made use of a spark of varying length holding the electrodes at some distance from the lesion and playing the sparks upon this. Early in my experimental work on skin warts, I saw that direct contact between the current and the electrode was much more effective in destroying the warts than when an air gap was maintained. The cauterizing effect of the current thus used can be easily demonstrated experimentally on a piece of raw meat immersed in water in a pus basin (non-insulated). The point of application of the electrode becomes rapidly white and in a few seconds the cauterization progresses to carbonization. While this takes place hydrogen is freely generated. A current of equal intensity applied through an air gap has no such effect. Moreover, according to the analyses made up to date, metallic copper appears to be regularly present in the tissues at some distance from the point of application when contact is made but not otherwise. Investigations along these lines are not concluded as yet. Up to date it would appear that the current as used in the treatment outlined in this paper has several activities in addition to being a powerful cautery. It is only fair to say that physicists have rather regularly denied this.

In view of the ready handling of the Oudin current and in view of its marked cauterizing effects, it will surely prove of great therapeutic use in a great variety of conditions, not only in the bladder and urethra. In these parts it has proven an ideal cautery in my hands. The applications can be made under the guidance of the eye through cystoscope or urethroscope, and small or large areas can be cauterized as each case demands. In papillomatosis of the larynx I feel sure that it will prove as useful as in the similar vesical condition.

After the bladder has been washed and then filled with distilled water, the cystoscope armed with the electrode is introduced. The electrode is pushed a short distance in among the villi and the current is allowed to play for 15-30 seconds at each application. The nearer the electrode approaches the base of the growth the shorter should be the applications, lest the bladder wall be injured. Moreover, if the electrode touches the bladder wall it causes

*Read by invitation before the Berlin Urological Society, October 1, 1912.

*Instead of the induction coil and interrupter the latest model instrument uses a closed magnetic field transformer ("step-up") which gives more rapid oscillations and can be employed in any room effectively.

pain, otherwise there is no pain. By making repeated applications at different spots the whole growth will be rapidly destroyed, and as it disintegrates it is voided in small pieces, as a rule. This process of separation in very large growths may extend over several months, usually only a few days to a week. As stated, I employed the Oudin current derived from a Wappler machine, usually placing the rheostat vertically, so that half the resistance was thrown into the circuit. If a stronger current seemed necessary I threw out the rheostat altogether. The spark gap in the muffler was made between one-eighth and one-quarter inch. Usually I employed a short gap.

As a rule, I employed the Nitze double catheter cystoscope. In one catheter tunnel I placed the electrode and to the other I attached a tube for irrigation. A direct cystoscope is useful in some cases, in other cases absolutely necessary.*

The electrode (No. VI Charriere) employed is usually heavily insulated copper (at times steel) made by the Wappler firm. As the rubber melts, it must be repeatedly trimmed.

*Applications.*—The applications were made directly to the growth, the electrodes being pushed a short distance in among the villi under the guidance of the eye, and then the current was turned on at various points for 15-30 seconds, the bladder being distended with distilled water. In my early seances I made the treatments rather short. The longest total applications that I have used at one seance aggregated 10 minutes, 30 seconds at twenty different spots. This was an enormous tumor and so long an application surely is not necessary except in such cases. A total of three to five minutes at one sitting will suffice usually. A few days later it should be repeated, provided any viable tumor tissue is visible, as at the original sitting it is impossible to determine how extensively one has destroyed the growth. Treatments are discontinued as soon as the whole growth appears necrotic. The sloughs are allowed to separate spontaneously or helped along with bladder irrigations. After the base is thus exposed (after two to three weeks) it is treated as were the original outgrowths.

*Effects.*—The immediate visible effects are very striking. No spark is seen if the electrode is placed properly among the villi. A spark may be seen if the surface is flat and prevents the electrode from burying itself. While the current is on, gas† is freely generated and bubbles out of the growth. If the point of application is superficial one can readily see blanching of the tissues about the point of application, and at the spot where the electrode's point rested the tissues are blackened. As the electrode is withdrawn from the growth, very frequently it is found to be adherent to the villi, and as it is pulled upon the whole tumor moves with the electrode, which finally comes away with a small mass of tumor tissue baked to its tip. This is only rarely followed by bleeding, and a reapplication of the current at the same spot usually controls this.

After the patient has expelled the necrotic tumor the base may require further brief applications to destroy any tumor residue as stated above. The patients should be carefully cystoscoped from time to time, and if any suspicious areas are visible they should be destroyed at the same sitting. In this way we can hope to obtain excellent and permanent results.

No method which is so destructive of tumor tissues can be absolutely free from danger.

A danger that one can imagine is severe burning or, perhaps, perforation of the bladder wall. With care this should be avoided. As one is working under the guidance of the eye, one ought to know exactly where the electrode is situated before turning on the current, and by adhering to this fundamental point no such damage should be inflicted.

*History of the Method and Nomenclature.*—In the early part of 1909, after purchasing in Vienna the intravesical set of operating instruments made by Victor Blum, for use through the ordinary Nitze catheterizing cystoscope, my thoughts were turned to procuring an intravesical cautery that could be used in the same manner as the Blum instruments. In Vienna I could find no such cautery, and on my return to America I decided to look into the question of using high-frequency currents for this purpose, having previously had some experience with its cauterizing effects on skin warts. I immediately took the matter up with the Wappler firm, where I had bought my high-frequency apparatus, and was thoroughly disappointed when Mr. R. Wappler, the electrical expert of that firm, told me I could not use these currents as I wished, because, first of all, an air gap between the tumor and the electrode was essential, and, second, the current would burn out by cystoscopes. Others whom I consulted, members of the profession who had more experience with these currents in dermatological conditions, told me that Mr. Wappler's views as to the necessity of having an air gap were absolutely correct. Despite this information, I ordered through the Wappler firm a very thoroughly insulated copper (six-ply) electrode so that I might experiment with these currents and test the validity of these expert views. I wasted some time in trying to fit the end of the electrode with a cup-shaped depression which would retain a small amount of air even under water and thus give me a small air gap. In treating warts under water I quickly found that no such gap was essential and that the warts could be readily removed by direct application of the electrode and current to the warts. I then tested my cystoscopes (Nitze type catheterizing—Loewenstein make) and found that they carried the current without in any way interfering with the illumination. I then treated skin warts through the cystoscope under water, and obtained most satisfactory results. I was then ready to employ the method in bladder tumors as originally conceived.

In proposing a new method of treatment it is always well to call it by some short name. As yet I have not been able to think of any name which properly characterizes this method of treatment, as the title of this paper shows. The high-frequency current of Oudin is used, applied through a copper (heavily insulated) electrode under water, and to express all of that in one word seems more difficult than to cure a case by this method. Others have spoken of the method as fulguration, to which I have repeatedly taken exception, as the method is not the same as fulguration (de Keating-Hart, Pozzi). By fulguration is meant the method of using high-frequency currents as suggested by de Keating-Hart, "sideration" being the name originally employed by this experimenter. Pozzi

*Of late I have used the Bransford-Lewis cystoscope as it allows of direct and indirect vision applications at one sitting without withdrawing the instrument. I have also used more recently the Brown-Buerger and Wappler's 1911 model cystoscope (Freudenberg type).

†Outside of the body this gas produced in similar manner appears to be hydrogen.

suggested that it be called fulguration from the resemblance of the long spark to lightning. As de Keating-Hart says (*Interstate Medical Journal,* June, 1910): "Let it suffice to recall that this method consists in an electrosurgical operation divided into two stages. The first stage consists of the operative removal of the tumor, practised, if not extensively (when that is impossible), at least to the limit of the apparent boundaries of the disease, and including therein metastases and infected glands. Then, in the second stage, long and powerful sparkings of great frequency and high tension are applied to the wound thus made." Another striking difference is evident when we contemplate the effects of the current used as indicated above intravesically through water, and compare them with de Keating-Hart's observations. He says: "This method (fulguration) seems to act, not on the neoplasm, but on the soil in which it grows. Mice cancers, when fulgurated, then removed and reimplanted in healthy mice, developed afresh, under conditions identical with those of grafts that had not been exposed to the spark; the neoplastic cell (not destroyed directly by the electric discharge) was then in no way attacked by it as regarded its viability." On the other hand, in the intravesical method described in this paper, the growth is directly destroyed.

I believe these citations ought to make clear that the method here advanced should not be called fulguration. If the method is properly used one seldom sees sparking, and as fulguration refers definitely to the long lightning-like sparks employed in the manner described above by de Keating-Hart and is an excellent descriptive term for a fixed procedure, it would be confusing to apply that term to the therapeutic method that I am here describing, and to call this new method of attacking intravesical neoplasms fulguration.

The current of Oudin has been used for some fifteen years in removing surface growths, and the only novel feature of my method is the use of these currents under water and in the urinary bladder. The resemblance that it bears to the treatment of surface neoplasms is much greater than that which it bears to de Keating-Hart's technique, and it is my belief that for all these reasons it should not be confounded with the very recent development known technically as fulguration.

*Therapy Used at Present in Bladder Tumors, Benign and Malign.*—In this field during recent years there has been great discord, almost all surgeons favoring the transvesical route, a few pleading for the transperitoneal. Only two or three came out warmly for the transurethral route and the operating cystoscope. Of late a new school has come to the fore, saying "Hands off!" (Posner).

If we are face to face with a malignant neoplasm there can be no question as to what procedure should be adopted. The transperitoneal operation recently strongly recommended by Dr. C. Mayo alone promises any result. If this cannot be done, owing to the patient's general condition, palliation and not a cure is the best that can be expected.

When, however, we come to papillary growths which probably are benign in the great majority of cases despite the fact that Rokitansky named them carcinomata villosa, and despite the teaching of the Guyon school, which considers them malignant because they recur so regularly after attempted transvesical excision, then we enter a much debated field. Nitze has shown that he can obtain much better results with the operating cystoscope than anybody has obtained by transvesical suprapubic operation, and he and Sonnenburg* only recently declared that after such transvesical procedure recurrence is the rule. Cathelin in a recent paper admits at least 50 per cent. recurrences after the suprapubic operation.† He sides with Nitze and the operating cystoscope. Whether the results by the transperitoneal route will approach those obtained by Nitze we can not state as yet. Even if they should be vastly superior to those obtained by the suprapubic transvesical route, and just why they should be it is difficult to figure out, it must be evident that the danger of this operation is much greater than that of the Nitze procedure, and that the transurethral is and will be the more ideal in every way. The only obstacle to the wide introduction of this technique has been the great difficulty of manipulating the rather complicated armamentarium and the very frequent sittings that some cases require as well as the occasional postoperative severe hemorrhages.

If, then, as it appears at present, the transurethral route gives the best results and is the least risky so far as immediate outcome is concerned, it is evident that the new method advocated in this paper must measure up with the method of Nitze and the operating cystoscope.

*Results obtained with the new treatment by thirty three surgeons who have either written to me or published on this subject:*

To prepare an up-to-date report I have resorted to the old expedient of sending letters to all the surgeons who might be using this method of treatment.

Almost all the answers were enthusiastically favorable to the new method. One or two answers were favorable, but not particularly enthusiastic. One answer was far from favorable, but in view of the fact that the surgeon in question had never used the method, I think we can pass over his remarks.

Some 187 cases have been treated in America. These were intravesical papillomata. In addition more than twenty cases of urethral papillomata were treated by these same surgeons. Thus their opinions are based on more than 200 cases in which they have tried this new therapy. This naturally represents more than 200 tumors, as many cases have multiple growths.‡ The unanimity of opinion that this new method is simpler and superior to previous methods is most striking, and surely speaks well for the high-frequency current treatment of vesical papillomata. While over 200 cases have been treated in the United States, in France, Germany, and Austria, surgeons have begun to use the method. Up to date I have heard of 28 cases treated in Europe (Heitz-Boyer of Marion's Clinic, R. Kutner, R. Bachrach of Zuckerkandl's Clinic). All are enthusiastic about their results. Heitz-Boyer uses a slight modification of the original technique which I believe is less effective. R. Bachrach uses the same technique as we use in America, whereas Kutner is using the bipolar current.

Not only are these surgeons satisfied with the simplicity and immediate results, but they are so well satisfied with the end result that all are using the method at the present time.

Those who have been using the new method long enough show definite cures running over two years, carefully controlled by repeated cystoscopic exam-

*Bergman, Bruns, and Mikulicz: Handbuch d. Prakt. Chirurgie, 1897.

†Cathelin: Folia Urologica No. 6, 1910.

‡In my 28 cases I had to treat more than 43 papillomata.

inations. All of my oldest cases continue well without recurrence, and several of them have been reexamined more than half a dozen times during the past two years.

The great simplicity of the method, the fact that it can be carried out successfully in an ambulatory manner, its painlessness and its applicability to almost all cases, makes it a method of election with the patient as well as the surgeon.

*Selection of Cases.*—The last point that I wish to emphasize is a most important matter, namely, the selection of cases of bladder growth that should be treated by the high-frequency current method. I am convinced, after careful trying out, that no malignant growth* will be cured by this method. Consequently we must determine as soon as possible whether we are face to face with a benign or malign growth. At times this is fairly easy, but usually it is very difficult. Of twenty cases that I have been able to study microscopically only six showed carcinoma, and judging from the microscopic and clinical behavior of the other fourteen, I feel certain that reliability of the microscopic test cannot be impugned.

To obtain specimens for microscopic study I have used different methods. Often at first examination and treatment a fair sized piece of tumor can be burned off and removed, attached to the electrode, or recovered from washings. Straining of urine after treatment has in three cases given me pieces of adequate size to make a positive diagnosis of malignancy. In some cases one can evacuate through the cystoscopic sheath at the first examination large amounts of tumor tissue which suffice for microscopic study. When all these methods fail I regularly use the Young's rongeur at the second sitting and bite out a large piece, which is almost always satisfactory for microscopic study. Recently I have determined the presence of carcinoma four times by specimens so obtained. If all these methods of obtaining tissues fail, a careful and experienced worker will be able to decide from the lack of clinical result that he is dealing with a growth that does not respond; in other words, he is dealing with a malignant growth. This delay, I am convinced, should be avoided, as early operative excision alone can cure such cases. Early diagnosis of the nature of the growth is therefore absolutely necessary.

Having put aside all the malignant cases, I believe we should try out the high-frequency current in all cases unless the tumor is inaccessible or the patient too intolerant. The size of a growth or the multiplicity of primary growths (nonrecurrent), I consider no contraindication. There are, however, postoperative recurrent multiple growths in which the whole bladder wall is studded, and in these no therapy short of complete cystectomy will lead to a cure. In this type of case the patient will have to decide, as the surgeon offers him but little.

*Cases, Therefore, to Be Excluded from This Method of Treatment.*—1. All papillary carcinomata should be excluded, as malignant cases do not respond. These should be operated on radically by the transperitoneal route.

2. All patients that are intolerant of cystoscopic examination, naturally cannot be treated by the transurethral route.

3. Those few cases in which the growths are inaccessible either with the indirect or direct vision cystoscope, naturally cannot be treated, as well as those (usually) large growths situated at the neck of the bladder that are traumatized by every introduction of the cystoscope and in consequence bleed severely, preventing accurate work.

*Conclusion.*—It is too early to say that the method used in the cases reported will give results as good as those reported by Nitze. It must be evident that the technic here described is much simpler than that employed by Nitze, and it would appear from all the experiences gathered up to date that it will more than rival Nitze's method when end results are compared. The great simplicity of this new method, the rapidity with which large growths are destroyed, the ease with which any trained cystoscopist can carry out the necessary manipulations, all suggest to me that it is the method of the future in the treatment of benign growths in the urinary bladder.

48 West Seventy-fourth Street.

*The only exception I might make would be very small growths that are superficial.

## LITERARY GENIUS AND MANIC-DEPRESSIVE INSANITY.

WITH SPECIAL REFERENCE TO THE ALLEGED CASE OF DEAN SWIFT.

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In the Medical Record of November 23, 1912, there appears under the above heading an article by Arthur C. Jacobson, M.D., in which he refers to a thesis written by me, and published in the April number of the *American Journal of Insanity*. After referring to numerous isolated sentences in the thesis, dwelling at length upon the case of Dean Swift, one of ten cases presented, and dealing with the political situation, and social conditions in Ireland at the time of Dean Swift, and after making a number of dogmatic and unqualified statements in regard to the relation of genius and insanity, he arrives at the conclusion that "the thesis of Dr. Reid is utterly fallacious."

In regard to the thesis above referred to, I would call attention to the fact that it was published in a journal read almost entirely by psychiatrists and neurologists, and I deemed it unnecessary to explain a fact with which Dr. Jacobson is manifestly unfamiliar, namely that manic-depressive psychosis is not a deteriorating one, and that an individual may suffer all his life from occasional attacks of excitement or depression or both, and that in the intervals between these attacks his mentality remains unimpaired to the end. In the thesis in question it is shown that DeQuincey confessed to having suffered from periodic attacks of mental disorder which influenced and at times prohibited the use of his literary talents, that Keats acknowledged that he was "not right in his head" at times, that Mary Lamb had to be confined in a hospital for the insane at intervals during her entire life, that Charles Lamb was an inmate of an asylum for several months, that Cowper had to be treated on several occasions in a private sanitarium for recurrent attacks of mental disorder; that Poe wrote to a friend, "I become insane with long intervals of horrible insanity"; that Francis Parkman gave graphic descriptions of typical attacks of manic-depressive insanity, from which he suffered, and yet all these writers produced works of lasting value.

Dr. Jacobson remarks that "it seems an odd thing

to the writer that a great literature is not emanating from the asylums of the land, if it be true that the relation of genius and insanity is so close." I would remind Dr. Jacobson that the insane are not all confined in "asylums." If he had ever had to deal with the relatives of the insane, he would have discovered that there is a great army of the semi-insane and semiresponsible at large, many of whom are writing literature, painting pictures, and producing inventions. I might also add that of the insane patients under my care at the present time several have produced poems of recognized merit. If the insane were all confined in institutions such literature as Science and Health, The Book of Mormon, the Koran, and other works which have been considered as epoch-making would never have been given to the world. Much of the literature produced by Dr. Jacobson's favorite author, Dean Swift, would, in the present day and generation not be allowed to emanate even from a hospital for the insane, on account of the postal regulations in regard to the mailing of profane and obscene literature.

Dr. Jacobson complains that the writer of the thesis is unable to distinguish between the "insane temperament and actual insanity." If Dr. Jacobson will define the term "insane temperament" and show where the dividing line between sanity and insanity lies, he will confer a lasting favor not only upon an "intellectual plebeian," and a "bourgeoise of science" but upon psychiatrists of all grades. If he can even formulate a satisfactory definition for the word "insanity" he will accomplish a feat which the psychiatrists and psychologists of all ages have been unable to perform.

In regard to Dr. Jacobson's denial of the statement that the psychosis has at times been the motor force which impelled writers to action, I would refer him to numerous instances cited in the thesis, notably DeQuincey's "Confessions of an Opium Eater" which were written in a few weeks. When the proofs were returned, his period of hypomania having passed, he spent six months in trying to correct one volume. Coleridge was interrupted while writing "Kubla Khan," an opium dream, and never could complete the poem. "The Castaway," composed by Cowper, was but the expression of the depressing delusions that followed him to the grave. Poe's "Raven," as well as several of his stories, are descriptions of his hallucinatory experiences.

In regard to the particular case of Dean Swift, dwelt upon at length by Dr. Jacobson, I note that he first makes the statement that Dean Swift was "the sanest man in England." Later he affirms that the Dean suffered from "cerebral neurasthenia" (which may or may not be considered a form of insanity), and later still expresses the belief that he suffered from arteriosclerosis from the age of twenty-three. The last statement, published as it was in a medical periodical, needs no reply. In regard to the diagnosis of "cerebral neurasthenia" I would say that according to White[1] the mild depressions of manic-depressive insanity may so closely resemble neurasthenia that a demonstration of retardation is the only way to differentiate some of the cases, except by the lapse of time, and a study of the course. If Dr. Jacobson can, two hundred years after, make this differentiation he is doing himself an injustice when he affirms that he is not a psychiatrist. Dr. Jacobson's exhaustive discussion of the political situation in Ireland at the time of Dean Swift has no bearing whatever on the subject of the psychosis of the Dean. The fact that Ireland was oppressed was no reason why Swift should pour forth a stream of the most profane and obscene literature that ever emanated from the pen of a supposedly sane man. However, in order that Dr. Jacobson may not be forced to take the opinion of a "tin-horn critic" or a "lover of the outré," and to show that the writer of the thesis is not the only one lacking in that sense of humor necessary to appreciate the writings of Swift, I shall quote the opinions of writers whose judgment in literary matters might compare favorably even with that of a *real* critic.

Sir Walter Scott says[2] "He is licentious in his satires, and transgresses the bounds of purity and delicacy." Speaking of Gulliver's Travels he adds, "Even a moral purpose could not justify the nakedness with which Swift sketches the horrible outlines of mankind degraded to a bestial state." Thackeray[3] says, "He goes through life tearing like a madman." Speaking of Swift's "Modest Proposal," referred to by Dr. Jacobson, he says, "Could Dick Steele or Goldsmith or Fielding in his most reckless moment of satire have written anything like the Dean's famous 'Proposal.' The Dean has no softness, and enters the nursery with the tread and gaiety of an ogre." Leslie Stephen[4] says, "A morbid interest in the physically disgusting is shown in several of Swift's writings. Some minor pieces which ought to have been burned simply make the gorge rise. It is idle to excuse this on a ground of contemporary freedom of speech. His contemporaries were heartily disgusted. The objection to Swift is not that he spoke plainly, but that he brooded over filth unnecessarily." Taine[5] says, "He dragged poetry not only through the mud but into filth. He rolled in it like a raging madman, and enthroned himself in it, and bespattered all passers by." W. H. Davenport Adams[6] says, "It cannot be said of Swift that he has written a line by which a man can be made better and purer; he has contributed nothing to the world's treasure of love and truth and wisdom. No great man, it might be added, ever so wallowed in filth." John Churton Collins,[7] speaking of certain poems, says, "Nothing so purely diabolical had ever before emanated from man." Speaking of Swift's libel of Pope he says, "It is the very alcohol of hatred and contempt. Its intensity is the intensity of a monomaniac." "To find any parallel to such pieces as the 'Ladies' Dressing Room,' 'Cassinus and Peter,' 'On Corinne,' 'The Beast's Confession,' &c., we must go to the speeches in which the depraved and diseased mind of Lear runs riot in obscenity and rage."

It may be that the same sense of humor which causes Dr. Jacobson to smile when he reads my statement that the industry of the victim of manic-depressive insanity must be spasmodic, and to laugh at the statement that the manic-depressive is unable to adapt himself to his surroundings, enables him to enjoy the humor of Dean Swift. If he were at all familiar with the life history of Swift he would know that his industry was above all things spasmodic. Stephen[8] says, "Swift worked as he seems always to have done, slowly and intermittently." Roscoe[9] says of him, "He was a rapid writer, by fits and starts." From the time he published his "Tale of a Tub" in 1704 to 1710 he did not publish a line. Speaking of this period Collins says, "These five years (1705 to 1710) form perhaps the most unsatisfactory period in Swift's life. He passed his mornings in scribbling pamphlets which he never

published, his afternoons were spent in dancing attendance on the Whig ministers, and his evenings in gossiping with Addison and Addison's friends in coffee houses." Durng the year 1709-1710 he shut himself up at Laracon and avoided intercourse with anyone except Addision. From 1714 to 1726 he remained in Ireland, and nothing was published by him during this period. In a letter to Gay he complains of suffering from a severe depression. He describes his occupation as follows: "I read the most trifling books I can find, and when I write it is upon the most trifling subjects. I procrastinate more than I did 20 years ago, and have several things to finish which I put off to 20 years hence."[10] From the time he wrote Gulliver's Travels, 1727, to 1737, he wrote nothing for publication.

If ever there was a man who was unable to adapt himself to his surroundings it was Swift. He was dissatisfied with everyone, every place, and everything. His college course was marked by constant violations of the rules. While a student in Trinity, from November 14, 1685, to October 8, 1687, he was punished seventy times for infringement of the rules. The examining board pronounced him dull and insufficient and refused to pass him. Finally he was granted a degree "Speciali Gratia." According to Swift himself his object in writing Gulliver's Travels was to vex the world,—"to embody in allegoric form the hatred and disdain with which he personally regarded all nations, all professions, all communities and especially man, as man in essence is." He described Ireland, the land of his birth, as "a wretched, dirty dog hole and prison, of which he could only say it was a place good enough to die in."

In regard to the insanity or sanity of Dean Swift, Dr. Jacobson states that Sir William Wilde, after a study of the available data, declared that there was no proof that Swift had ever been insane, and that his peculiarities in later life were due to the ordinary decay of nature, and adds, "The opinion of this eminent Irish physician is practically conclusive." Dr. Bucknill,[11] in speaking of Dr. Wilde's essay on "The Closing Years of Dean Swift's Life," which was published in 1849, says, "This little work would have rendered further discussion needless if medical science had stood still since its publication." Dr. Bucknill's diagnosis of Ménière's disease is based entirely upon the facts recorded in Swift's Journal to Stella, and his letters in which he complains of suffering from "giddiness, deafness and ringing in his ears." What this disorder really was it is impossible at this date to say, but to one who is accustomed to dealing with the depressed phase of manic-depressive insanity, taken in connection with the extreme emotional depression and other symptoms described in his letters, his affliction suggests the disorders of sensation producing pain and discomfort, complained of so often at regularly recurring intervals by these patients.[12]

Dean Swift's associates and those who came in contact with him daily recognized that he was insane. His conversation and actions while a frequenter of Button's Coffee House, London, caused him to be called "the Mad Parson," a name by which he was known throughout England. A maid at an inn where he was staying, seen by Dean Swift scraping a piece of mutton, and of whom he inquired as to how many maggots she found, replied, "Not so many as there are in your head, sir." The Dean's sense of humor does not appear to have proved equal to the strain, for Scott relates that he became furiously angry at this retort, and reported the maid to the landlady. While dining at the house of a friend, Swift once discovered a small hole in the tablecloth. He enlarged the hole and insisted on eating his entire meal through it. During his periods of hypomania which alternated with his depressions he showed the typical exaggerated ego, exaltation, and expansiveness of the manic-depressive. Collins says the liberties which he took with his social superiors were such as to be scarcely credible. On one occasion he sent the Lord Treasurer to fetch the Secretary of State from the House of Commons, "For I desire," he said, "to inform him with my own lips, that if he dine late I shall not dine with him." The purposeless graphomania which existed at these times has already been referred to. The margin of his Burnet was scribbled over with execrations of the Scots "Most damnable Scots, Scots hell hounds, Scotch dogs, cursed Scots still, hellish Scotch dogs, &c."

Biographers appear to be unanimous in the opinion that Swift suffered from some form of mental disorder: Roscoe, speaking of the Dean in early life, says, "A recurrence of a disorder attributed by Swift to a surfeit of fruit that induced a coldness of stomach, giddiness, and momentary loss of recollection, symptoms of the same disorder with which his uncle Godwin died, attacked him." It might be added here that Swift's Uncle Godwin died insane. Craik[13] speaks of Swift's "Brooding melancholy" while in his twenties, and adds, "It had its root and groundwork in mood and character, and derived strength and confirmation in a congenital malady from which he suffered. This was caused by a structural malformation near the brain that dulled his hearing, produced fits of giddiness and uncontrollable depression, and eventually overcame his reason, but as yet the attacks were only intermittent." Samuel Johnson[14] says, "The disease of Swift was giddiness with deafness, which attacked him from time to time, began early, pursued him through life, and at last sent him to his grave deprived of reason." Collins, speaking of Swift's early life, says, "But unhappily the mind and body of the youth on whom these favors had been bestowed, were so diseased that what was intended to benefit served only to irritate and distress him. Fancied slights, and imaginary wrongs ulcerated his soul with rage and grief." Adams, speaking of Swift's refusal to live with the woman he is supposed to have married, says, "We may conjecture that he shrank from the dread possibility of communicating to another generation the hereditary taint of mental disease of which he was conscious in his own person."

The last years of Swift's life have been graphically described by his biographers. Thackeray describes him as "alone and gnashing in the darkness." Scott pictures his condition as one of "violent and furious lunacy." Stephen says that in 1741 he had to be placed in restraint. In 1742 he was declared insane by a royal commission, and guardians to his person and estate were appointed. Collins says, "As his intellect decayed his irritability and ferocity increased. Day after day he paced his chamber as a wild beast paces its cage, taking his food as he walked, but refusing to touch it as long as anyone remained in the room. His state was horrible and pitiable beyond expression." "For two years before his death he never spoke." Adams says, "A fit of frenzy followed and continued for months. He then sank into the situation of a helpless chargeling. His gloom was deeper and more

constant than that of Cowper." Mrs. Whiteway wrote November 22, 1742, that five persons could scarcely hold him from tearing out his eyes. Bucknill states that he suffered from convulsions for thirty-six hours prior to death, and that a plaster cast made after his decease showed a right-sided hemiplegia. All these symptoms Dr. Jacobson may attribute to the "ordinary decay of nature," but to my mind they spell very clearly arteriosclerotic dementia.

Literary critics appear to agree that the kindest way of explaining Swift's rage for profanity and obscenity was to call him insane. Bucknill says, speaking of the poem, "The Legion Club," "Its animation seems occasionally to verge upon absolute insanity." Collins says, "He appears to have been drawn by some strange attraction to the contemplation of everything which is most offensive and most humiliating in our common humanity. It was of the nature of the morbidity which tortured Rousseau. His writings and correspondence exhibited a mind perpetually oscillating between unutterable despair and demoniac rage." Stephen says, "His indulgence in revolting images is to some extent an indication of the diseased condition of his mind, perhaps of actual mental decay." Adams says, "He has written whole pages of unpardonable bestiality, unpardonable if we refrain from the conjecture that they were inspired by that diseased brain of his, against which he strove so manfully, and yet so unavailingly." In regard to Gulliver's Travels he adds, "The satire is written with trenchant vigor, but the reader shrinks from a fierceness that amounts almost to savagery. I cannot but think, however, that its coarseness can be attributed to a diseased brain rather than a depraved heart." That Dr. Jacobson should wish to deprive the Dean of the only possible excuse which these writers can give for his seeming depravity is a matter of surprise, and can be explained only by supposing that the Doctor believes insanity to be a disgrace, an idea which had its root in the ancient belief that the insane were possessed of a devil. It seems almost impossible to inculcate into the minds of the laity, and even make clear to the medical profession, the fact that a person who suffers from an attack of mental disorder may be no more culpable, and have no more cause for shame, than one who suffers from an attack of appendicitis.

That Dean Swift was not without insight is shown by several of his letters and sayings. At the time he was made Dean of St. Patrick's he could not have been considered other than successful as well as famous. Yet, at that time he wrote to Miss Vanhomrigh, "I was horribly melancholy while they were installing me, but that begins to wear off and change to dullness." Writing to a friend at another time he says, "At best I have an ill head and an aching heart." While walking with a friend one day he remarked, on seeing a tree, the uppermost branches of which were withered, "I shall be like that tree, I shall die at the top," and we have every proof that his prophecy came true. From the foregoing quotations we must conclude that Dean Swift's insanity was recognized by those with whom he associated, by biographers and literary critics, by a royal commission appointed to decide his mental condition, and finally by himself.

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11. "Dean Swift's Disease," Bucknill, *Brain*, January, 1882.
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## THE NEW CHEMISTRY AND THE NEW MATERIA MEDICA.*

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Those who have followed materia medica for the last twenty-five years as impartial and unprejudiced observers cannot help but note, with increasing concern, the almost hopeless chaos and utter confusion into which it has been drifting, and are not at all surprised at the growing nihilism in the ranks of thoughtful practitioners.

When we examine into the causes of this unsatisfactory condition, one factor seems to stand out most prominently, viz., *a general lack of knowledge as to the primary cause of disease.*

An exact knowledge of the primary cause of disease would at once lift the uncertain art of healing to the dignity of an exact science. It would provide a more natural and rational basis for prophylaxis and give rise to a simplified and ordered materia medica. Fortunately there are many facts in modern science which illuminate the path, and admit of rational conclusions toward a satisfactory solution of this all important problem.

In a paper read before the Chicago Medical Society, February 15, 1911, the writer arrived at conclusions which were later supported by what would appear an overwhelming evidence in an article published in the Medical Record, June 15, 1912, and the *Chicago Medical Recorder,* October 15, 1912, entitled: "Facts of Modern Science, and Their Value in the Prevention and Cure of Disease."

Of these conclusions two are of special value for the purpose of this paper, viz., (1) The primary cause of disease, from a purely physical viewpoint, is chiefly mineral starvation; (2) Minerals in inorganic form cannot be utilized by the human organism as directly and effectually as can true organic minerals.

Time and space do not permit to give here the facts and reasons supporting these conclusions. They have been carefully stated, together with the references, in the publications just mentioned. To those treatises the reader is respectfully referred for detailed information.

If it be a fact that the primary cause of disease is mineral starvation, then it follows that the minerals must hereafter occupy a much more prominent place in materia medica than they are occupying at the present time. If it be true that minerals in inorganic form cannot be utilized by the human organism as directly and effectually as can true or-

*Read at the fourth annual meeting of the American Association of Clinical Research, New York, Nov. 9, 1912.

ganic minerals, then it follows that the mineral remedies must be supplied in organic form.

What is the organic form? The answer to this question will become apparent as we proceed.

Organic chemistry designates as "organic" any "compound, substance or radical containing carbon."

This definition is arbitrary and manifestly absurd because, if consistently applied, all of the carbonates, as of sodium, potassium, and calcium, must be classed with "organic" salts.

The original meaning of "organic" is: Pertaining to objects that have organs, pertaining to the animal and vegetable kingdoms; resulting from, or exhibiting characteristics peculiar to, animal or vegetable life and structure.

*The basis of the inorganic world is the crystal. The basis of the organic world is the cell instead of the crystal.*

The destructive effects of inorganic remedies have long been recognized, and efforts have been made to overcome their undesirable features. As a result a flood of so-called "organic" salts were brought to the attention of the physician, often accompanied by grossly exaggerated claims as to their therapeutic action and freedom from undesirable effects. It is now generally conceded that, with few exceptions, these so-called "organic" salts are not much more efficient, if at all, then the purely inorganic mineral salts.

The medical literature abounds with corroborative evidences, with the general effect that the much abused term "organic" has lost its true significance, and many physicians, as well as chemists, have, therefore, come to the conclusion that there is no pronounced difference between "inorganic" and "organic."

It seems to be an inherent tendency of human nature to swing, like a pendulum, from one extreme to the other. To offset this tendency let us, without bias or prejudice, analyze the causes of the disappointing behavior of so many so-called "organic" combinations of minerals, and, if possible, find a remedy.

All physical nature is divided into two great worlds of matter, the inorganic and the organic. The inorganic world of matter is generally known as the mineral kingdom. The organic world of matter includes the vegetable kingdom and the animal kingdom.

We know that the substance of each kingdom serves as food for the next higher kingdom, and that in the process of digestion it is converted or transformed into substance of the higher kingdom.

Thus the minerals supply the food of plants, but not in their crystal or unorganized form. In the process of becoming food the mineral must be raised from its unorganized condition in crystal form to the form of vegetable tissue. Hence, plants possess the power of converting or transforming mineral matter into vegetable tissue. Or, expressed in different words, plants raise inorganic matter to the state and condition of true organic substance.

The animal, like the human, cannot utilize minerals in crystal form as food, because it is not able to transform such mineral matter into animal tissue, the two being separated by a great gulf of condition, which is occupied, or bridged, by the vegetable kingdom. To become available to the animal the mineral must first become vegetable, that is, the inorganic must become organic. In other words, the vegetative process is provided by nature to bridge the gulf between the crystallized mineral and the tissues of the animal organism. After being lifted, or raised, to the higher condition of the organized vegetable tissue, the animal can easily raise it to the still higher condition of animal substance, and thus assimilate it without difficulty.

We are now able to understand why inorganic minerals alone are foreign matter to the human system; why their remedial effects are largely counterbalanced, and often outweighed, by their destructive effects; and why the minerals must become organic before they can serve as food and remedies.

Chemical analysis reveals the fact that the organic world is composed of the same chemical elements that are found in the inorganic world. From the viewpoint of chemistry of today, therefore, the difference between inorganic and organic is not chemical in character.

On the other hand, everybody knows that inorganic matter is different in structure and condition from tissue substance.

*Organic substance, therefore, is an allotropic* modification of inorganic substance.*

For example: Diamond and charcoal, in a purely chemical sense, are the same, viz., carbon. They are allotropic forms of the element carbon. The diamond is a crystalline or inorganic, and charcoal an amorphous or semiorganic form of carbon.

Marble is one of the inorganic, crystalline forms of calcium carbonate, and some of the organic, colloidal forms of the same substance occur in the shells of eggs and oysters and in the valuable pearl.

Metallic silver is the crystalline or inorganic form, and Carey Lea's allotropic silver is an amorphous, colloidal, or semiorganic modification of the same metal.

The yellow, poisonous crystalline phosphorus is an inorganic form, while the nonpoisonous, red phosphorus is an amorphous, semiorganic modification.

Countless other examples could be cited. In fact, the results already obtained in colloidal chemistry make it safe to proclaim that every known substance can be raised from the crystalline into the colloidal form. But the examples given here would seem sufficient to illustrate the fact that the crystalline form is characteristic of the inorganic world, while the colloidal form is characteristic of the organic world.

Since the middle of the last century chemists, biologists, and physiologists have been engaged in the study of colloidal substances. Michael Faraday, Berzelius, Francesco Selmi, Carey Lea, and especially Thomas Graham, were the pioneers in this fascinating and fruitful field, which has grown into such dimensions within the last ten years that it has become a new branch of chemistry and bids fair to outgrow all the rest of chemical science and become the chemistry of tomorrow. Many workers in this field—and their number is increasing almost daily—are beginning to sense the fact that colloidal minerals are Nature's bridge to purely vegetable substance. But they do not dare to proclaim their

*From the Greek, *allos*, other, different, + *tropos*, way, manner, guise. Allotropy: the property which certain chemical elements have of existing in two or more distinct forms, each having certain characteristics peculiar to itself. "Allotropism being interpreted as some change of molecular arrangement, this frequency of its occurrence among the components of organic matter is significant as implying a further kind of molecular mobility."—H. Spencer, Prin. of Biol., § 1.

conviction openly as yet, not being prepared to make the demonstration.

Some colloidal minerals, like dialyzed iron, colloidal silver, colloidal mercury, etc., are known to all physicians. They are known also to be less poisonous than their purely inorganic cognates. But many of them are not true organic substance yet, being merely stages of transition from the crystalline inorganic to the cellular organic. This has been demonstrated within the last few years with the aid of the microscope and the ultramicroscope.

Just as it is possible to produce of the same substance almost any size of crystals, from the largest macroscopical to the smallest microscopical, so is it possible to produce of the same substance practically any size of colloidal particles, from the largest to the smallest ultramicroscopical.

The microscope and the ultramicroscope reveal the facts that all particles of matter are in a state of motion or vibration, and that microscopical particles vibrate slowly while the much smaller ultramicroscopical or colloidal particles vibrate rapidly.

The crystalline inorganic is coarse in particle and slow in vibration. The cellular organic is fine in particle and rapid in vibration. The amorphous-inorganic and the colloidal semiorganic are intermediary steps.

*And here we are face to face with Nature's evolutionary principle.* The evolution from the crystalline inorganic to the cellular organic appears to be accomplished by means of refinement of particles and increase of vibratory activity.

We can now account for the fact that many so-called organic salts are not better as remedies than their inorganic forms. In the light of the foregoing the explanation is very simple. Those so-called "organic" salts are not organic in the true sense. They are merely loose associations of an inorganic element, or salt, with an organic substance, which fact alone does not make the inorganic organic. A transformation of the crystalloid component into the colloidal form is required to make the compound organic in the true sense. In other words, to be rightfully entitled to the designation "organic" the mineral element, or compound, must be: (1) raised to the colloidal form; and (2) combined with a native organic substance, such as protein, carbohydrate, fat, etc.

For this true organic form of minerals the writer, in a previous paper, adopted Faraday's term "vitochemical," to distinguish them from merely so-called "organic" minerals.

Briefly recapitulating:

1. Inorganic matter and organic material are the same in essence but different in form and structure.

2. The inorganic world is crystalline. The organic word is colloidal.

3. The inorganic is coarse in particle and slow in vibratory activity. The organic is fine in particle and rapid in vibratory activity.

4. Mineral bodies, *in organic form,* are an essential constituent of food and of the animal organism, and are of vital importance in the prevention as well as the cure of disease.

5. Crystalline, or inorganic, minerals are not fit to serve as food or remedies for the animal organism. They will, therefore, eventually be eliminated from materia medica and replaced by vitochemical, or true organic, minerals.

6. The smaller the particles of a colloidal mineral, and the higher their rate of vibration, the better is it assimilated and adapted as a remedy.

7. Many of the so-called "organic" salts are not organic in the true sense because all, or part, of the compound is still crystalline and not colloidal.

8. The old chemistry, whose days are numbered, is unable to differentiate between inorganic and organic.

9. The new chemistry has not only made clear the difference between inorganic and organic, but also sheds its light upon a problem which in the old chemistry was one of the most profound mysteries, viz., *Nature's evolutionary principle.*

This principle, and its relation to chemistry, the writer will make the subject of another treatise.

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## THE NEGLECT OF ORAL TREATMENT IN INFECTIOUS DISEASES.

By C. EVERETT FIELD, M.D.,

NEW YORK.

In considering the treatment of all of the acute infectious diseases and many of those chronic, we may wonder to find some of the most important details overlooked. Did we carefully investigate the processes of autoinfection that are constantly originating in the mouths of our fever cases, we would surely give oral hygiene the full attention it deserves.

Of course it is not necessary for me to detail the long list of pathogenic bacteria commonly found in the nasopharyngeal cavity or to magnify the broad expanse of mucous membrane with its folds, lacunæ, and canals, the teeth in their varied stages of necrosis, all of which serve as perfect soil for infection and incubation. We are familiar with the fact that fully two-thirds of the diseases affecting mankind are contracted through the membranes of the nose and throat. How common are the symptoms of gastrointestinal fermentation in the course of fever cases. It is not necessary for me to point to the fact that foods we so carefully select for the patient, the milk we pasteurize, pass to the stomach and intestine through a mouth which may be laden with millions of microorganisms. Furthermore, to find a collection of sordes on the teeth of any fever case should be classed as evidence of neglect.

Granted, then, that we agree as to the common danger herein stated, is it not strange that so important a part of treatment as oral sanitation should ever be neglected? And yet, all too frequently this seems to be the case. Sometimes the lapse is due to the fact that we take it for granted the nurse is caring for this part of the treatment, or possibly we ourselves have failed to recognize its full importance.

On equal footing with therapy and diet, if not in advance of them, should come the minutest instructions relative to the care of the mouth. Direct the nurse or attendant to cleanse the teeth of the patient at least twice daily and to rinse or swab out the mouth before and after each feeding with a stimulating alkaline antiseptic solution. By following this course rigorously in all cases of serious illness you will be many times repaid as you note how few will be the complications, how seldom will come the signs of self-infection, and how gratefully your treatment has been received by the patient. His food tastes better, his appetite continues to be good and assimilation is carried on to the utmost.

Richmond Hill.

# MEDICAL RECORD.

*A Weekly Journal of Medicine and Surgery.*

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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## LESSONS FROM THE RECRUDESCENCE OF DIPHTHERIA IN GERMANY.

THE severe outbreak of diphtheria in Germany during the past few years furnishes a complete denial of the assertion that the affection is becoming milder under general sanitation. In the discussion of Reiche's paper (an abstract of which was recently published in the MEDICAL RECORD), which is to be found in the *Berliner klinische Wochenschrift*, December 30, many opinions were expressed by the leading clinicians of Hamburg. Schottmüller stated that without the necessity for any apology for the results of serum treatment, the facts stand out prominently that antitoxin should be injected early and in large doses and also intramuscularly. A certain percentage of mortality is the result of septic complications and cannot be modified at all. Thüngel, who saw only severe institutional cases, relied on serum entirely, and his mortality curves show its success. A measure of its efficacy is seen whenever the percentage of laryngeal stenoses and tracheotomies is low, as in the author's material.

Hegler contrasted the mortality of the early nineties—thirty-two per cent.—with the thirteen per cent. of the past few years. In the past four years and a half 61 nurses and twelve physicians in the Eppendorf Hospital had contracted the disease with but two deaths, in both of which there were elements which showed that the conditions were exceptional (one patient already had a myocarditis, while the other died of pneumonia of the ordinary type). This is a document attesting both the severity of the epidemic and the efficacy of the serum, but it shows also that prophylactic injections are not infallible. Kissling said that a study of the results of first day injections would convince any one of the specific power of the serum treatment; also that it is only wasted effort to give it after the third day. Schroeder mentioned the special malignancy of the epidemic at Altona. The highest mortality was 23 per cent. in 1909, after which it fell to 17 per cent. The mortality was unusually high after tracheotomy cases.

Kellner described the epidemic in an institution for the feeble-minded, where there was an almost absolute control of the material. There were 107 cases with but three deaths. This low figure was due largely to routine daily inspection of throats with resulting early diagnosis and early serotherapy. Rumpel, in commenting on this report, said that it should be remembered that feeble-minded children are specially resistant to infectious diseases which no doubt has something to do with the very low mortality. Both he and Reiche mentioned unusual mortality after first day injections. Instead of being zero, as in ordinary statistics, it went to 5 per cent. in some material of the past few years.

## ALCOHOLISM IN FRANCE.

IN some countries the consumption of spirituous beverages appears to be decreasing, although statistics relating to the question are, perhaps, not altogether reliable. When trade is bad and money is scarce less alcohol is drank, but, as a rule, when business revives and money is plentiful drinking increases. It used to be said that the drink bill of a nation was a fairly good index of its prosperity. In the case of Great Britain it has been stated frequently of late that spirit drinking is not nearly so evident as formerly. In other countries, however, there has been no marked tendency in this direction. In the United States figures seem to show that drinking is not decreasing, while so far as France is concerned alcoholism exhibits progress rather than decline. The Paris correspondent of the *Medical Press and Circular* states in the issue of January 15, 1913, that alcoholism, tuberculosis, and criminality are greatly on the increase in France, the two latter as direct consequences of the former, and in direct proportion to the consumption of intoxicating drinks. The statement is made that the number of deaths provoked annually in France by alcoholism, either directly or indirectly through heredity, exceeds 100,000. Furthermore, alcohol is responsible for the production of many of the immense number of cases of mental diseases which occur in France. In 1865 there was consumed in France 19,206,044 gallons of alcohol, and 13,984 cases of lunacy were under treatment, while in 1907, when the consumption of alcohol had almost doubled, the number of insane had increased to 71,547, of which 10,000 had been hard drinkers. The number of crimes likewise is shown to have increased in direct ratio to the increase in the use of alcohol. And lastly, Dr. Sicard de Planzoles is authority for the assertion that of all the European armies the one which suffers the most from maladies which tend to indicate a condition of feeble resistance of the race is the French army. The decrease of resistance is attributed to the extension of alcoholism.

If these reports be true, and it may be presumed that in the main they are true, then France provides a striking object lesson on the evil effects of alcohol on the human race. France is rich and prosperous and France is notorious for the large consumption of alcohol. If prosperity brings in its train the wholesale use of alcohol with its manifest and manifold ills, then material prosperity is not to be desired. National decay, mental and physical, is too high a price to pay for the accumulation of riches. The most hopeful sign of the situation, for after all France is by no means the only country in

which so-called prosperity and alcoholism go hand in hand, is that the public conscience everywhere is becoming aroused with regard to the alcohol question, and that steps are being taken to investigate and to try to remedy the existing state of affairs in the most intelligent manner possible. Undoubtedly, one of the most powerful factors in bringing about a change is education through the public and medical press.

## INTESTINAL STASIS.

The paper on intestinal stasis read by Mr. Arbuthnot Lane at the Congress of Clinical Surgery held recently in New York has given an impetus to the consideration of the subject. Probably there are as many cases of indigestion in this country as anywhere in the world and probably, too, a large number of these are due to intestinal stasis. The arrest of normal peristaltic movements is responsible for many complaints and may be the starting point of some grave diseases. The commencing symptoms are dyspepsia and constipation, and in course of time the whole system becomes poisoned by the toxins thrown off by putrefying food, and the sufferer bids fair to sink from asthenia and emaciation. A notable feature of this condition, referred to by Dr. Murray Leslie in the *Medical Press and Circular,* Dec. 25, 1912, is the enormous preponderance of cases occurring in the female sex, and another somewhat remarkable point is that it is frequently associated with enteroptosis. Leslie, although at one time sceptical, is now thoroughly in agreement with Lane as to the presence and significance of the various adhesions and kinks described by the latter, and also believes that the short circuiting operation is the most certain and effectual mode of relieving the condition.

While short circuiting may seem heroic treatment even for obstinate constipation, the author holds that it is safe and effective. He thinks, therefore, that it is better to have recourse to this radical treatment for intestinal stasis than to leave the patient in a miserable state of suffering and chronic invalidism rendering life almost insupportable and so lowering the resistive power of the tissues, owing to the effects of autointoxication, as frequently to endanger the life of the individual from intercurrent diseases, such as pneumonia.

## AMBARD'S METHOD OF DETERMINING RENAL INSUFFICIENCY.

Widal and Javal have introduced into the routine of laboratory methods of examination the determination of the urea content of the blood. M. Ambard has gone a step further. By making a simultaneous determination of the amount of urea in the blood and the amount in the urine, he calculates the ratio between the two amounts, and regards this ratio as the test of renal function. In a recent communication in the *Bulletins et Mémoirs de la Société de Médecine de Paris,* December 28, 1912, H. Carrion and C. O. Guillaumin describe Ambard's method and report the favorable results they have obtained in its clinical applications.

Ambard has shown that in the healthy individual there is a constant relationship between the urea content of the blood and the urea content of the urine. In organic and functional derangements of the kidney this relationship is changed, and the extent to which the ratio differs from the normal content indicates the degree of renal impairment. Without going into the methods by means of which the amount of urea in the blood may be determined, it will suffice to point out that the normal ratio between the urea of the urine and that of the blood has been calculated to be 0.070. This is the normal content. In proportion as the kidneys are impaired this figure is increased. Thus the tendency to a condition of uremia would run parallel with the increase in the urea ratio. The functional capacity of the kidneys is calculated as inversely proportional to the square of this ratio. Thus, in an individual in whom the urea ratio is 0.140, the urea content of the blood is double that of an individual subsisting on an equivalent diet. But in the case of the former the renal capacity is calculated as equal to only one-fourth of the renal capacity of the latter.

## The Fixation Abscess, Its Indications and Technique.

A method of treatment that reminds one of the use of the seton of former days, is described in the therapeutic applications of the so-called fixation abscess. J. Carles, in the *Journal de Médecine de Bordeaux,* January 5, 1913, states that one is justified in resorting to this method of treatment in various forms of pneumonia, in typhoid fever, puerperal infection, rheumatism, and septicemia. The method consists in the injection into the cellular tissue of one cubic centimeter of spirit of turpentine. The site of injection is preferably the outer side of the thigh, the loin, the lumbar region, or the deltoid region. If after the lapse of twelve to twenty-four hours the reaction is slight or absent, the injection may be made at another point. The absence or feebleness of the reaction is an indication of the failure of the defensive forces of the body, and suggests an unfavorable prognosis. On the other hand, the rapid appearance of intense inflammatory manifestations at the site of the injection provides a good prognostic omen. It is pointed out that the rapid development of an infiltration that makes one think of the development of a diffuse phlegmon should not create any alarm. On the contrary, there occurs a coincident disappearance of the symptoms of the original infection. The fixation abscess is fully developed on the fifth or sixth day following the injection. There need be no haste in incising it, for the contained pus is sterile, provided the injection has been made under aseptic precautions.

## The Microbiology of Variola.

Certain pathologists throughout the world have long regarded the germ cause of smallpox as firmly established. But others deny the existence or significance of the supposed discovery, and all are aware that no practical conclusions have ever been deduced therefrom—and a really practical discovery in this field would nearly revolutionize pathology for obvious reasons. Recently before the Medical Society of Halle A. S. Fraenken summed up our knowledge of this subject to date (*Münchener*

*medizinische Wochenschrift,* January 8). Guarnieri's corpuscles have continued to gain ground over an interval of many years. Wasielewski has followed them up in the rabbit's cornea for thirty generations, and from the thirtieth he successfully vaccinated a child. We have not yet succeeded in cultivating the germ *in vitro,* but attempts made to show that the cytoryctes is not a specific organism have also met with failure. More recently Paschen, Fraenken, and others have found an organism common to variola and vaccinia, but its relationship with the cytoryctes is obscure. There are large clumped forms of the latter which do not have a bacteria-tight filter, but it is known that there are younger forms which can traverse such an impediment.

## News of the Week.

**Isolation Hospitals.**—The great need in New York City for hospitals for the treatment of contagious diseases was made manifest recently by the death of a six-months old baby who died of pneumonia on North Brothers Island after having been removed from the Post-Graduate Hospital because of the development of measles. The Board of Estimate a year ago made an appropriation for the purpose, but the objection of real estate owners has made even the purchase of a site impossible, and nothing further has been done. A special hospital for the treatment of measles, provided for some time ago, will be ready shortly, but its usefulness will be limited to the Borough of Manhattan, and the Bronx and Queens will still be without accommodations of the sort, necessitating the removal of patients to the Reception Hospital and thence to the island. The Public Health Committee of the Academy of Medicine has protested against this delay in providing the necessary hospitals and has declared the prejudice against them as dangerous to the neighborhood, to be without foundation.

**Smallpox in New York.**—Smallpox in mild form has been reported as epidemic in a number of widely scattered towns in New York State, including White Plains, Tonawanda, Niagara Falls, Corning, and Mechanicsville. Local health officers have been instructed by Commissioner Porter to enforce vaccination and strict quarantine.

**Nurses to Holy Land.**—The first step in an educative campaign of district nursing in Palestine was taken recently when the Daughters of Zion sent two trained nurses to that country. These two, the forerunners of a prospective corps, will devote themselves primarily to the needs of the women and children.

**Home at Otisville.**—The Urania Society of Otisville, N. Y., recently petitioned the State Board of Charities for permission to establish a home, adjoining the municipal sanatorium at Otisville, in which to care for the wives and children of tuberculous patients.

**State Medical Library.**—The Director of the New York State Library announces that the medical reading room in the library was opened to the public on January 15, with about 12,000 books on its shelves available for consultation and for lending. The library receives between five and six hundred domestic and foreign medical periodicals which are on file in the reading room. The hours at present are from 9 to 6 daily, and on Tuesday and Thursday evenings until 10. Medical books may be borrowed for two weeks, by any licensed physician in the State, full-time instructors in medical colleges, members of hospital house staffs, registered or certified nurses, and other persons offering suitable credentials. When possible, the library lends its books through local libraries or schools, all transportation charges to be paid by the borrowing library or individual.

**Post-Graduate Dinner.**—The Directors and Faculty of the New York Post-Graduate Medical School held their annual dinner at Delmonico's on January 30. Some two hundred physicians were present and addresses were made by Chief Justice Riddell of the High Court of Ontario, and by Mr. Bourke Cockran, who defended the rule of "the highest fee to the richest patient, and all others in proportion."

**Poison from Gloves.**—A shopkeeper of Paris has been sued by a woman customer, who claims damages to the amount of 12,000 francs, on the ground that her blood has been poisoned through the wearing of a pair of gloves which she had purchased.

**Physicians Protective League.**—Many physicians in New York have recently been invited to join an association with the above title, whose object is the correction of "abuses that tend to demoralize our profession," the most important being stated as the "dispensary abuse." It is claimed that thousands of people, able to pay for medical advice, receive free treatment at the clinics, and that this constitutes a flagrant injustice.

**New Laboratory Opened.**—The new physiological laboratory of the Polhemus Memorial Clinic in connection with the Long Island College Hospital was opened on January 29. The laboratory, which occupies one large room in Polhemus Memorial Building, is fitted with the latest and best appliances for students' work.

**Personals.**—Dr. Alvah H. Doty, formerly Health Officer of New York, has been appointed medical director of the Employees' Benefit Fund Committee of the American Telephone and Telegraph Company.

Dr. Rupert Blue, Surgeon-General of the United States Marine Hospital Service, in speaking before the members of the Fifteen-Year Club of the Mutual Life Insurance Company in New York on January 29, described the work of the service in stamping out bubonic plague in and about San Francisco and in Porto Rico.

**Vetoes Sterilization Bill.**—Gov. Fletcher of Vermont recently vetoed the bill passed by the State Legislature, providing for the sterilization of defective criminals.

**Pure Water on Trains.**—The Treasury Department issued from Washington on January 29, regulations prohibiting the supplying of any but "certified pure" water on trains and steamboats in interstate commerce. The regulations require further that all water containers be scalded at least once a week, and that any ice used in cooling the water must also be "certified pure." The requirement of individual drinking cups on common carriers engaged in interstate commerce was made by the Public Health Service some time ago.

**Courses in Hygiene Urged.**—The Efficiency Society, which met in New York recently, adopted resolutions advising the establishment of thorough courses in industrial hygiene in every medical and technical school in the United States. Copies of the resolutions and an accompanying letter will be sent to the dean of every such school in the country

outlining such courses and asking consideration of the possibility of establishing them.

The subjects suggested include sanitary inspection, mechanical and clerical work and their physiological and psychological effects, prevention of accidents and treatment of accidents, disease and its prevention, fatigue and its causes, industrial legislation, the relation of the employer to the physician and the relation of the physician to the employee, the latter including the physical examination of the employee and his instruction; the relation of the physician to the State and municipality, including the reporting of work, accidents and diseases, and the economic and social results already obtained in the prevention of accidents and disease.

**Death Rate Falls.**—During the week ending January 25, there were in New York 1,461 deaths, the death rate per thousand being 14.19, as compared with 1,564 deaths in the same week of 1912, when the death rate was 15.77. During the week there were but two deaths ascribed to typhoid fever. The mortality from January 1 to 25, was one-half point below that of the corresponding period of 1912.

**Extensions to Mt. Sinai.**—Plans for improvements and additions to Mt. Sinai Hospital, New York, costing $1,350,000 in all, have been prepared and half of the amount necessary has already been subscribed. The proposed additions include a pathological building to house all the laboratory work of the institution in pathology, bacteriology, chemistry, etc., two wards of one hundred beds each, dormitories for the nurses and other employees, and a special building for the children's services.

**Explosion in Laboratory.**—An experiment in one of the laboratories of the Rockefeller Institute for Medical Research in New York on January 30 resulted somewhat unexpectedly in an explosion which wrecked the apparatus, destroyed a quantity of chemicals, and blew out a partition between two rooms. Fortunately, no one was injured and the fire which followed was quickly put out by the laboratory employees.

**Cocaine Sellers Sentenced.**—Two men, brothers, one a druggist, the other a dentist, were sentenced on January 30 in Brooklyn to fines of $1,000 each and to imprisonment for having sold cocaine illicitly. In the case of the druggist, who pleaded guilty to the charge of having sold 140 ounces of the drug during the past two years, a sentence of one year's imprisonment besides the fine was imposed, while the dentist, who pleaded guilty only to an attempt to sell cocaine, received a sentence of imprisonment for half the time.

**Hospital Pensions.**—A bill recently introduced into the New York State Legislature provides for a pension fund for physicians and employees of New York City hospitals, to which each person concerned shall contribute one per cent. of his monthly pay.

**Charitable Bequests.**—Bequests of $40,550 each to Columbia University, Mt. Sinai Hospital, and the German Hospital and Dispensary are provided for in the will of the late Mr. Augustus Openhym of New York, who died last April. It is directed that the bequest to Columbia be known as the Openhym fund and that it be used for research into the cause, prevention, and cure of cancer.

**Medical Licenses Issued.**—At a recent meeting of the Oklahoma State Board of Medical Examiners, licenses to practise medicine were granted to eight applicants who had successfully passed the examinations of the Board. Four other applicants from Tennessee, Kentucky, and Texas were licensed by reciprocity.

**Society of Sanitary and Moral Prophylaxis.**—A stated meeting of this society will be held at the New York Academy of Medicine, on Thursday, February 13, at 8.30 P. M. The general subject for discussion will be "The Matter and Methods of Sex Education Other Than Instruction in Schools." The speakers will be Dr. Eugene LaF. Swan, Miss Nellie W. Smith, Miss Laura B. Garrett, and Mrs. Mabel M. Irwin. Among those who will discuss the papers will be Dr. Ira S. Wile, Dr. Thomas D. Wood, Dr. Rosalie Slaughter Morton, Dr. Mary Sutton Macy, and Miss Harriet D. McDaniel.

**Conference on Infant Mortality.**—The National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, of England, will hold a conference on infant mortality at Caxton Hall, Westminster, on August 4 and 5, 1913. The conference will be divided into two sections, administrative and medical, which will sit simultaneously.

**New York Physicians' Mutual Aid Association.**—The forty-fourth annual meeting was held on January 21, when announcement was made that the membership of the association had reached nearly 2,300 physicians, and that the capital fund, including all assets, amounted to about $87,000. The previous officers were re-elected for the ensuing year as follows: *President,* Dr. W. F. Mittendorf; *Vice-Presidents,* Dr. W. C. Phillips, and Dr. Joseph W. Ingalls; *Secretaries,* Dr. Edward Davis and Dr. Edward S. Peck; *Corresponding Secretary,* Dr. W. B. Jennings; *Treasurer,* Dr. Daniel Lewis. The following trustees were re-elected to serve from 1913 to 1916; Dr. David P. Austin, Dr. Ward B. Hoag, and Dr. Heinrich Stern. The Association was incorporated in 1868, and among the original incorporators were Dr. David P. Austin and Dr. Mark Blumenthal, both of whom were present at the annual meeting.

**The Homeopathic Medical Society of the State of New York** will hold its sixty-first annual meeting at Albany on Tuesday and Wednesday, February 11 and 12, under the presidency of Dr. Willis B. Gifford of Attica. The Secretary is Dr. Bert B. Clark, 200 W. 86th Street, New York City.

**Wholesale Appendicitis.**—According to a recent report from Philadelphia, twenty-nine boys, inmates of the St. Francis Industrial School at Eddington, Pa., were operated upon for appendicitis within the past ten days. Sixteen appendectomies were performed in one day and the others at intervals in the succeeding nine days. The cause of the epidemic, according to the same report, was the overeating of cheese.

**Medical Society Elections.**—BUTTE COUNTY (CAL.) MEDICAL SOCIETY: Annual meeting at Chico on January 14. Officers elected: *President,* Dr. P. L. Hamilton; *Vice-President,* Dr. T. P. Reardon; *Secretary-Treasurer,* Dr. Ella F. Gatchell.

STARK COUNTY (O.) MEDICAL SOCIETY: Annual meeting at Alliance on January 21. Officers elected: *President,* Dr. A. J. Hill, Canton; *Secretary-Treasurer,* Dr. C. A. Lamont.

LONDON COUNTY (TENN.) MEDICAL SOCIETY: Annual meeting at Lenoir City on January 12. Officers elected: *President,* Dr. G. M. Burdett, *Vice-President,* Dr. J. G. Eblen; *Secretary,* Dr. J. T. Hickman; *Treasurer,* Dr. W. T. Foute.

CAMERON COUNTY (TEX.) MEDICAL SOCIETY:

Annual meeting at Brownsville on January 22. Officers elected: *President,* Dr. Harry K. Loew; *Secretary-Treasurer,* Dr. H. L. D. Kirkham.

Little Kanawha and Ohio Valley Medical Association: Annual meeting at Parkersburg, W. Va., on January 21. Officers elected: *President,* Dr. W. S. Link; *Vice-Presidents,* Dr. W. S. Stille, Dr. Deerfield, and Dr. Frank Keever; *Secretary,* Dr. Marvin R. Stone; *Treasurer,* Dr. W. H. Sharp.

Italian Medical Society of New York: Annual meeting on December 27. Officers elected: *President,* Dr. P. Virdone, Brooklyn; *Vice-Presidents,* Dr. A. Carini and Dr. J. W. Perilli, New York; *Treasurer,* Dr. G. de Maffutiis, New York; *Secretary,* Dr. D. Petillo, New York; *Corresponding Secretary,* Dr. G. de Yoanna, Brooklyn.

Philadelphia County (Penn.) Medical Society: Annual meeting at Philadelphia on January 15. Officers elected: *President,* Dr. Charles A. E. Codman; *Vice-President,* Dr. M. Howard Fussell; *Associate Vice-Presidents,* North Branch, Dr. Jesse O. Arnold; South Branch, Dr. John D. McLean; Kensington Branch, Dr. Joseph A. Moore; West Philadelphia Branch, Dr. G. Mason Astley; Northeast Branch, Dr. Samuel Bolton; Northwest Branch, Dr. George A. Cameron; Southeast Branch, Dr. Simon Wendkos; *Secretary,* Dr. William S. Wray; *Assistant Secretary,* Dr. Arthur H. Hopkins; *Treasurer,* Dr. Edward A. Shumway.

Langlade County (Wis.) Medical Society: Annual meeting at Antigo on January 4. Officers elected: *President,* Dr. G. W. Moore; *Vice-President,* Dr. G. H. Williamson; *Secretary-Treasurer,* Dr. J. C. Wright.

Stephenson County (Ill.) Medical Society: Annual meeting at Freeport on January 9. Officers elected: *President,* Dr. Charles L. Best; *Vice-President,* Dr. J. A. Poling; *Secretary,* Dr. J. Sheldon Clark; *Treasurer,* Dr. Nelson C. Phillips.

Sangamon County (Ill.) Medical Society: Annual meeting at Springfield on January 13. Officers elected: *President,* Dr. Daniel M. Ottis; *Vice-President,* Dr. Charles D. Wright; *Secretary-Treasurer,* Dr. H. C. Blankmeyer.

Goshen County (Ind.) Medical Society: Annual meeting at Goshen on January 9. Officers elected: *President,* Dr. E. E. Ash; *Vice-President,* Dr. F. M. Freeman; *Secretary,* Dr. W. B. Page; *Treasurer,* Dr. H. W. Eby.

Baker County (Ore.) Medical Society: Annual meeting at Baker City on January 7. Officers elected: *President,* Dr. W. L. Parker; *Vice-President,* Dr. Thomas J. Higgins; *Secretary-Treasurer,* Dr. C. M. Pearce.

King County (Wash.) Medical Society: Annual meeting at Seattle on January 6. Officers elected: *President,* Dr. J. C. Moore; *Vice-President,* Dr. L. H. Redon; *Secretary-Treasurer,* Dr. Henry D. Brown.

**Obituary Notes.**—Dr. Orville Horwitz of Philadelphia, a graduate of the University of Pennsylvania in 1881 and of the Jefferson Medical College in 1883, a member of the American Medical Association, the Pennsylvania State and Philadelphia County Medical Societies, the American Surgical Association, the Philadelphia Academy of Surgery, the American Association of Genito-Urinary Surgeons, and the American Urological Association, and emeritus professor of genito-urinary surgery at the Jefferson Medical College, died at his home on January 28, aged 53 years.

Dr. James P. Tuttle of New York, emeritus professor of surgery in the Polyclinic Medical School and Hospital, died at his home, from diabetes, on January 31, aged 56 years. Dr. Tuttle was graduated from the University of Pennsylvania, Department of Medicine, in 1881, and was a member of the American Medical Association, the New York State and County Medical Societies, the American Proctological Society, the New York Academy of Medicine, and the Medical Reserve, U. S. A., consulting surgeon to the Manhattan State Hospital, and the Almshouse Hospital, and surgeon to the Polyclinic Hospital and St. Bartholomew's Dispensary.

Dr. Francis Hodgson Orme of Atlanta, Ga., a graduate of the New York University Medical College, in 1854, and formerly president of the American Institute of Homeopathy, died at his home on January 28, aged 78 years.

Dr. Mortimer H. Clarke of Auburndale, Mass., a graduate of the Boston University School of Medicine in 1888, and a member of the Massachusetts Homeopathic Medical Society and the Boston Homeopathic Society, died at his home from pneumonia after a short illness, on January 13, aged 52 years.

Dr. Nelson Asath Drake of Kansas City, Missouri, a graduate of Rush Medical College, Chicago, in 1868, a member of the American Medical Association, the National Association of Railway Surgeons, the British Medical Association, the Kansas, Iowa, and Missouri State Medical Associations, and the Jackson County Medical Society, being a charter member of the last and its oldest ex-president, a veteran of the Civil War, having spent four months in the famous Libby prison, and the founder and at one time editor of the *Kansas City Medical Index,* died at his home from Bright's disease on January 9, aged 70 years.

Dr. Edward K. Shirley of White Hall, Ill., a graduate of the Homeopathic Medical College of Missouri, St. Louis, in 1881, and a member of the Illinois State and Greene County Medical Societies, died as the result of an accident on January 19, aged 57 years.

Dr. Richard G. Johnson of Amsterdam, N. Y., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1883, a member of the New York State and Montgomery County Medical Societies and the Amsterdam Medical Society, and physician to the Amsterdam, City, and St. Mary's Hospitals, died at his home on January 20, aged 54 years.

Dr. Joseph R. Stuart of Houston, Texas, a graduate of the Jefferson Medical College, Philadelphia, in 1890, a member of the American Medical Association and of the Texas State and Harris County Medical Societies, and president of the Houston Infirmary, was instantly killed in an automobile accident on January 12, aged 44 years.

Dr. William Louis Rabe of Dwight, Ill., a graduate of the Rush Medical College, Chicago, in 1866, and a member of the Illinois State and Livingston County Medical Societies, and the American Medical Association, died at his home from pneumonia on January 15, aged 73 years.

Dr. John L. Lehman of Carmi, Ill., a graduate of the Indiana Eclectic Medical College, Indianapolis, in 1887, and a member of the Illinois State and White County Medical Societies, died at his home on January 17, aged 60 years.

Dr. Francis Nelson Braman of New London,

Conn., a graduate of the Bellevue Hospital Medical College, New York, in 1866, a member of the Connecticut State and New London County Medical Societies, chairman of the medical board of the New London Memorial Hospital, and formerly physician in charge of the Smith Memorial Home, and a member of the Board of Education, died on January 14, aged 76 years.

Dr. Eugene Elam Brown of Martinez, Cal., a graduate of the Hospital College of Medicine, Louisville, Ky., in 1882, and for many years physician of Contra Costa County, died at his home on January 10, aged 56 years.

Dr. J. W. Sorrells of Mansfield, Ark., a graduate of the Kentucky School of Medicine, Louisville, in 1876, died at his home recently from pneumonia, aged 49 years.

Dr. John Morrison of New York, a graduate of the Bellevue Hospital Medical College, New York, in 1892, was burned to death in a fire which destroyed his country home at Skillman, N. J., on January 22, aged 61 years.

Dr. Clinton Stevenson of New York, a graduate of the College of Physicians and Surgeons, New York, in 1889, a member of the New York State and County Medical Societies, the Association of Military Surgeons, the Greater New York Medical Society, and the Society of the Alumni of the New York Hospital, assistant ophthalmologist to St. John's Hospital, Long Island City, a surgeon major in the Eighth Coast Artillery, and medical inspector in the Department of Health, died at his home from pleurisy, on January 20, aged 47 years.

Dr. James Alexander Petrie, retired, of Phillipsburg, N. J., a graduate of the Department of Medicine, University of Pennsylvania, Philadelphia, in 1866, a veteran of the Civil War, died at his home on January 23, aged 70 years.

Dr. Sarah Josephine Wadsworth of Maplewood, N. J., a graduate of the New York Free Medical College for Women in 1876, died in St. Elizabeth's Hospital, New York, on January 20, aged 71 years.

Dr. Ezra Barnes Aldrich of Manchester, N. H., a graduate of the Harvard Medical School, Boston, in 1868, and a member of the New Hampshire State and Hillsboro County Medical Societies, died at his home on January 14, aged 72 years.

Dr. Reuben Fletcher Dearborn formerly of Lynn, Mass., a graduate of the New York University Medical College in 1874, died at the home of his daughter in London, Ont., on January 19, aged 62 years.

Dr. Charles Sturtevant of Hyde Park, Mass., a graduate of the Harvard Medical School, Boston, in 1862, a veteran of the Civil War, and associate medical examiner for Suffolk County, Mass., having held public office continuously for forty-two years, died at his home on January 19, aged 73 years.

Dr. John Winslow Chase of Dedham, Mass., a graduate of the Medical School of Maine, Portland, in 1867, a member of the Massachusetts State and Norfolk County Medical Societies, and for many years county physician and a member of the Board of Health, died at his home on January 19, aged 73 years.

Dr. William T. Black of Calais, Me., a graduate of the Pennsylvania Medical College, Gettysburg, in 1857, and a surgeon in the Union Army during the Civil War, died at his home from pneumonia, on January 13, aged 82 years.

# Correspondence.

## THE INFLATION OF STATISTICS.

To the Editor of Medical Record:

Sir:—I do not believe that a medical journal is the proper place for settling personal disputes, but the statements of Dr. Sheffield are so incorrect that I am compelled to reply. To prove my statements I enclose the records of the cases of the Vanderbilt Clinic and also a postal card which was sent to me acknowledging receipt of my manuscript. If you will kindly note the date on the records you will see that the sister had been under observation at the clinic since 1905, and the brother since 1911; the cases, therefore, were under observation by us for a long time before they were seen by Dr. Sheffield. If you will also note the date on the card you will see that I received it in October, whereas the doctor's article did not appear until November; how then could I have recognized the photographs when they were not published at the time when my article was in print?

When my article appeared Dr. Sheffield telephoned to me and asked me to send him a reprint; this I did. He in return sent me three reprints of three different articles, one of which was the paper in dispute. Not a word was said by him in this conversation in regard to the cases which he reported, and I did not know that he reported the same cases without a diagnosis until I had received his reprint. As I have never met Dr. Sheffield nor ever spoken to him except on the one occasion when he called me up, when was this imaginary apology of mine extended to him? How could I have apologized to him when I did not know the facts until I had received his reprint? Nor did he know that the cases which we reported correctly diagnosed were the same cases which he reported without a diagnosis, until he received my reprint.

In regard to the diagnosis, anyone who reads the article of Dr. Sheffield must see that he did not have the slightest idea of the correct diagnosis, for if he had, why would he have said "the presence of suppurative foci all seemed to warrant the assumption that anyloid degeneration was here dealt with," and "yet it showed nothing tangible to elucidate the diagnosis," and "disappointed in the diagnosis as well as treatment, I directed the mother to go with the child to the country."

In conclusion I beg to state that we had the cases under observation for a long time before Dr. Sheffield had seen them; that we correctly diagnosed and reported them before the doctor's article appeared, and that by his report the statistics of Splenomegaly (Gaucher) are neither inflated nor increased.

Mark S. Reuben, M.D.

New York.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

FIRST WEEK OF INSURANCE MEDICAL BENEFITS—TROPICAL MEDICINE—SIR RONALD ROSS'S LECTURE—MR. AUSTIN CHAMBERLAIN AND THE TROPICAL SCHOOLS.

London, January 17, 1913.

This is the first week in which the "Medical Benefits" of the Insurance Act take effect. On Monday maternity benefits became payable and already applications have been put in on behalf of insurance infants, the first of which has been presented by a can-

didate for the County Council with a gold medallion locket containing a portrait of the Chancellor of the Exchequer. On Wednesday the other benefits came into operation. It must be remembered, however, that insured persons are not entitled to medical attendance unless they have been insured throughout the last six months. As many delayed insurance the pressure on the panels has been less than was anticipated. A further modification of the six months' rule is now made; an official statement was issued last night to say that insured persons who are members of approved societies are entitled to medical benefit "no matter when they entered insurance or whether they have since been out of employment." Another sop for the clubs and proof of the determination to force administration through these "approved societies." In most districts the condition of the panels has been such that some sort of attendance may be reckoned on for the next three months, and when an act of Parliament has been working for that time there is more likelihood of amending than of repealing it.

The first official list of London panel practitioners was exposed at the post offices and other places on Tuesday, prefaced by an invitation to insured persons to apply to any one whose name appeared. Counting them gives a total of 1,949, so large as to provoke exclamation that there must be error. Looking further it appeared that men had put down their names for different districts and were inserted for all. The London Medical Committee at once scrutinized the list and the next day issued an estimate of only 738. Many names they found repeated in three to eight different lists and two of them appeared in ten. Conflicting statements have been issued each day since as to some withdrawing and others coming in. Last night the county of London official statement claimed only 780. It declared, too, that only three withdrawals had been received at the office. I don't know how to reconcile this with three times as many letters in the morning papers declaring the writers have resigned.

Meetings of all sorts have been held all the week. Last night there was a meeting called by insured persons to protest against being forced to take only panel doctors and demanding the right to choose any duly qualified practitioner. The free choice of doctor was again and again affirmed by Mr. Lloyd George to be most necessary and to form part of his bill. "Go to the doctor you believe in," he said in one speech, "that is the one for you and under this bill you have him—that is the government insurance bill." Words were inserted which to any ordinary reader convey that meaning. Now the bill has become an act his committees are trying to curtail this and drive every one to the panel men. I had a circular this week to inform me that the words did not mean what so many supposed, and stating that the intention of Parliament was choice among panel men only. Moreover, the committee would consider any particular case desiring to contract out, and if the applicant gave evidence of special reasons to satisfy them they would give permission—provided the doctor chosen promised to keep the same schedules as the panel men and provided he satisfied the committee that his treatment would not be inferior. No wonder men are exclaiming against lay control! Mr. Lloyd George must have known, as a lawyer, whether the words in the act expressed the free choice he guaranteed in his speeches. If by neglect or over-pressure he let them pass unwittingly he should protect his honor by ordering his officials to withdraw their circular and not to set up as interpreters of the intention of Parliament.

In the provinces, as I have previously informed you, the proportion who have joined the panels is larger. In the county of Middlesex, which is somewhat involved in the London fight, there are 386 on the list besides 61 men who since joining have resigned, but the committee state they have not been released from the contract. The ratio to insured persons will work out as 770 for each doctor.

To meet the expense incurred by its vigorous campaign the British Medical Association has been obliged to call up 20 per cent. of its guarantee fund.

To-day the representative meeting of the British Medical Association is being held. Practically it is to vote on the proposal to release men from the pledge they made in which there is sharp division of opinion. Some hold that the pledge was made to support the policy of the association and is still binding. Others say the policy has been changed by the leaders and so the pledge is abolished. It looks as if thousands signed the pledge without reading it and now discover in it a promise to support the association's policy. Some think they should do so although they disapprove the change. The question is being discussed and the vote is to be taken, but the result will not be known in time for this post.

Tropical medicine has occupied much attention this week. At the Royal Colonial Institute Mr. Arthur Chamberlain presided at a lecture by Sir Ronald Ross and in a brief, effective speech expressed the interest he felt in the subject and his pleasure in thinking our country had been a pioneer in the cause—thanks to men like Sir Patrick Manson and Sir Ronald Ross, who had spread abroad the fame and discoveries of our tropical schools. It is pleasant to find the son of the founder of these schools thus following in the steps of his illustrious father and "welcoming the opportunity" of hearing from the lips of one who had "played so large a part" in the progress already made and of the opportunities for further advance.

Sir Ronald Ross said that ten years ago he lectured before Mr. Joseph Chamberlain, at whose instance these schools had been started some years previously. To-day he could take a bolder flight. Then he could only record discoveries, now their practical application.

He felt strongly that tropical Africa remained uncivilized because tropical diseases prevailed. He instanced the effects of a number of these and stated their causes and the numerous, patient researches still being carried on toward their cure and immunity from them. Was not this knowledge, he asked, a gift to the race? The death rate had fallen wonderfully since 1903, while invaliding might be said to have "tumbled from the top to the bottom of the scale." This he held meant civilization for West Africa; it was a new, vast possession added to the empire and therefore a national obligation to mount the schools of tropical medicine that meant proper museums, extensive libraries, permanently employed teachers with the highest qualifications. In addition, ability among government medical men must be encouraged and investigation continued at every point. This had been done by enthusiasts practically unpaid, but it was time for the country to pay. The movement begun by Joseph Chamberlain had been continued by successive Colonial Secretaries, but with no expense worthy of a great country. He had himself been able to continue his

work, not by his countrymen but by foreigners. If change in this matter of payment were not made he could no longer advise young men to take up medical research. Britain gave throughout the empire less than £50,000 per annum for medical research which benefited 50,000,000 of whites, not to mention hundreds of millions of colored subjects—say one-tenth of a penny for each white. That was the gigantic contribution of a wealthy, grateful country to its medical investigators. Nowadays Parliament only paid itself—a quarter of a million pounds a year. Medical research could do much with that sum. As an example, measles killed 10,000 children a year and Britain spent some £200 or £300 a year on investigating it.

The chairman took up the question which Sir Ronald had thus opened and made a forcible appeal for the support of the tropical schools, which was the real object of the lecturer in his address. He had agreed to become chairman of a committee for raising a fund of £100,000. They had got £50 and he pleaded for the remainder.

At the Belgian Universal Exposition this year Great Britain will have an exhibition in illustrating in a popular way what is being done in relation to tropical diseases. A committee has been at work for some time and examples of the exhibits to be made have been shown at the Board of Trade. The committee is composed of representatives of our London and Liverpool schools, those of Khartoum and Cairo, the War Office, the Admiralty, and the India Office. Each of these undertakes the collection of certain specimens of insect pests, bacteria, microscopic and photographic illustrations, and so on. The London School of Tropical Medicine will show the work going on in connection with cholera, beri-beri, and elephantiasis, including any fresh information that may be obtained in the meantime concerning the outbreak of cholera among the troops engaged in the late war in the Balkans. The Liverpool school will illustrate the work on sleeping sickness and yellow fever on which it has done so much by its expeditions. The Admiralty will represent the work of the fleet surgeons on Maltese (undulant) fever. The War Office will show all that has been done on typhoid. The India Office takes charge of plague and there will be a special exhibit as to leprosy and other diseases of the East arranged by Dr. Andrew Balfour of the Egyptian service. As the chief object of this exhibition is to interest the public in order to instruct it on the necessity of prevention there will be specimens of mosquito-proof articles of clothing and furniture, with a model of a similarly protected house. A rat-proof house is also expected to find a place. The Liverpool school also intends to deal with foods which have been injured in preserving by being, for instance, deprived of phosphates, as husked rice. This school has given much attention to the question of preservation of food and will show examples of some which have been so injured as to be scarcely of any nutritive value.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*January* 23, 1913.

1. The Work of the Massachusetts State Board of Health in the Investigation of Paralysis. R. W. Lovett.
2. Shock. A Review of the Theories and Experimental Data to Date. E. H. Risley.
3. The Control of Ophthalmia Neonatorum in Massachusetts with Suggestions for the Improvement of Existing Conditions. F. E. Cheney.
4. Typhus Fever (Brill's Disease) at the Massachusetts General Hospital in Ten Years (Oct. 1, 1902, to Oct. 1, 1912). R. J. Lee.
5. An Anatomical Explanation of Many of the Cases of Weak or Painful Backs, as Well as of Many of the Leg Paralyses. J. E. Goldthwait.

2. **The Causation of Shock.**—E. H. Risley presents a summary of the evidence in regard to the causative factors in the complex condition of shock. This is stated to be a condition of lowered vital resistance produced by varying factors, such as fear, injury, or infection, of varying degrees. It is not possible to determine in a given case what physiological function is first disturbed or what the exact sequence of pathological changes may be, but shock does involve in its progress a disturbance of the respiratory center followed by a disturbance of the oxygen-carbon dioxide equilibrium, a lowering of body heat, and a depression of vasomotor tone resulting in a final paralysis or exhaustion of vasomotor activity, failure of respiration, cardiac failure, and death. Its treatment is based on a recognition of all of these factors. No one factor gives an adequate explanation of the phenomenon.

3. **Control of Ophthalmia Neonatorum.**—F. E. Cheney suggests the following measures that may be employed in the control of this disease: (1) The sending of a special notice to parents to prevent blindness in children, by every board of health in the State upon the receipt of birth notices. (2) A law requiring all cases of ophthalmia neonatorum to be placed under the care of an oculist or at least the supervision of an oculist within a certain time after the symptoms of the disease are first noticed. (3) Printed matter, as to the recognition of the disease, immediate care and protection of the eyes, laws relating to the disease, etc., should be sent to all doctors, nurses, and midwives, at regular and frequent intervals, and over a long period of time. (4) While the use of a 1 per cent. solution of nitrate of silver cannot be regarded as objectionable, a more universal prophylaxis against this disease would probably result if the use of a non-irritating silver preparation were more generally recommended and encouraged.

4. **Typhus Fever at the Massachusetts General Hospital.**—R. J. Lee notes that in the past ten years typhus fever in a mild and sporadic form has constantly been present in Boston and its vicinity as seen by the records of the Massachusetts General Hospital. It occurs, according to the Massachusetts General Hospital statistics, in about the ratio of one case of typhus fever to 47 cases of typhoid fever. As the diagnosis has to be made upon clinical signs only, it is possible that there are other cases in this series which cannot now be definitely diagnosticated. There occurred in the hospital series another group of cases which roughly simulated typhus fever in everything but the presence of the rash, which cases cannot now be classified. The clinical course and laboratory findings in typhus fever are so distinctive that there is little trouble in making the diagnosis in typical cases. This study throws no light upon the epidemiology of typhus fever, except that the occurence of the disease in persons of Russian nativity strongly suggests that the disease was originally imported from Russia. This study also emphasizes the importance of blood cultures, inasmuch as there were cases of typhoid fever with a negative Widal in which the positive diagnosis was made only by blood cultures. Moreover, the diagnosis of paratyphoid fever in this series was made possible by blood cultures alone in the majority of instances.

### New York Medical Journal.

*January* 25, 1913.

1. Tuberculosis and Other Diseases in Schools and Colleges. S. A. Knopf.
2. Sex Ethics; a Medical Orientation. W. B. Konkle.
3. Value of Pertussis Vaccine. G. D. Scott.
4. Malignant Growths. R. H. Boggs.
5. The Education of the Public in Personal Hygiene. R. S. Morton.

6. Abdominal Rigidity. L. M. Kahn.
7. Concomitant Convergent Squint. D. F. Harbridge.
8. Crippled Children in the English Public Schools. D. C. McMurtrie.
9. Incipient Pulmonary Tuberculosis. S. G. Ehrenreich.
10. Alkalies and Hyperchlorhydria. P. C. Tupper.

1. **Tuberculosis and Schools.**—By S. A. Knopf. (See MEDICAL RECORD, September 28, 1912, page 577.)

2. **Sex Ethics.**—W. B. Konkle points out that the march of morals is slow, and that sexual morality constitutes no exception to this rule. It cannot be predicted when love will extinguish lust, and solicitude for, and devotion to the interests of posterity will supplant tyrannous impulse toward self gratification. It is known, however, that many fields of labor are involved in the working out of the problem, and that much must be done in each of them. The eugenist must look to the improvement of the human stock. The pediatrist must see that childhood and youth are not impaired or vitiated. The andrologist must be not simply a specialist in venereal diseases—he must do for man what the gynecologist is doing for woman. The sanitarian must make earth and its abodes harmless and healthful. The sociologist must get things so adjusted that there will be peace and content and concord in the human hive. The theologian has a most important part to play. He must keep God in the thought of men as the One who dictates duty and creates responsibility.

3. **Pertussis Vaccine.**—G. D. Scott reports the results that he has obtained after eighteen months' work with pertussis vaccine. His patients now number seventeen. Pertussis vaccine is not a panacea in all whooping cough cases. In a few cases in which the disease was not cured the symptoms were distinctly mollified. The number of attacks became less, their severity was diminished, cyanosis was less marked, or vomiting during the paroxysms disappeared. The children slept better and the attacks at night became less. In not one of the author's cases was there any reaction from the vaccine. Experience seems to confirm that stronger doses of vaccine should be given in the early stages of the disease; also that infants require fewer and stronger doses than do older children. The younger the infant the quicker the cure. The author now begins with forty million bacteria, even to an infant, and gives another dose in proportion to the effects following the last dose. If much benefit arises he prolongs the intervals, if little or no benefit he shortens them. Many of the cases improved after one dose. An infant of five months was cured, others were improved after the second, third, or fourth. A dose of forty million given in severe cases at short intervals, is believed to be better than larger single doses.

4. **Conservative Treatment of Cancer.**—R. H. Boggs believes that a more conservative treatment of malignant growths should be practised in order that one may secure more positive results in curable cases and effect greater palliation in hopeless cases. The degree and location of malignancy should determine the treatment. Good results follow early operations if the tumor is favorably situated. Postoperative Röntgen treatment, even in these early operations, decreases recurrences. Some unfavorable cases can be made more favorable for operation by anteoperative treatment. Hopeless cases which have not been operated upon derive more benefit when compared with hopeless recurrent cases. With many the Röntgen ray is superseding all other methods, even excision radically performed, in the treatment of epithelioma, unless it involves mucous membrane.

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## Journal of the American Medical Association.

*January 25, 1913.*

1. A New Procedure (Punch Operation) for Small Prostatic Bars and Contracture of the Prostatic Orifice. H. H. Young.
2. Contracture of the Neck of the Bladder. C. H. Chetwood.
3. Prostatotomy by the Method of Goldschmidt. C. M. Harpster.
4. Impermeable Stricture of the Bulbo-membranous Urethra (Impermeable to the Passage of Instruments). J. B. Deaver.
5. The Relief of Intractable and Persistent Pain Due to Metastases Pressing on Nerve Plexuses by Section of the Opposite Anterolateral Column of the Spinal Cord, Above the Entrance of the Involved Nerves. E. Beer.
6. Spastic Paraplegia with the Cutaneous Reflex of Defense Occurring in Pott's Disease. E. M. Auer.
7. One of the Possible Factors in the Causation of Pellagra. A. H. Jennings and W. V. King.
8. Clinical Data on Malignant Renal Tumors. W. F. Braasch.
9. Replacing Depressed Fractures of the Malar Bone. J. G. R. Manwaring.
10. A Portable Combination Douche-Can and Sterilizer. A. P. Leighton.
11. A New Instrument for Teaching the Auscultatory Blood-Pressure Technic. F. A. Faught.
12. Infantile Scurvy in Which Swollen Joints Resembled Acute Articular Rheumatism. L. Fischer.

2. **Contracture of the Neck of the Bladder.**—C. H. Chetwood states that there may occur circular sphincteric and prostatic stenoses with partial or complete urinary retention. Contracture of the neck of the bladder may occur in young or old, with or without prostatic enlargement, may be confined to the internal sphincter or encroach on the prostatic urethra, and is amenable to surgical relief. There are reports in the literature of numerous cases of vesical atony attributed to arteriosclerosis, circulatory disturbances, senile changes, degeneration of bladder muscle, local nervous diseases and infection. The author believes a prolonged inflammation or congestion may have antedated some of these causes. He reports a case in which the removal of the sphincteric orifice and prostatic urethra at autopsy showed the urethral outlet vigorously contracted, and histological examination showed a pronounced inflammatory process as its basis. The reported cases of bladder atony, the causes of which are neither neurological nor mechanical so far as ascertained, are, according to the author's view, sometimes of specific origin, and he mentions a case in which specific treatment relieved the condition. The mystery surrounding some of the cases might possibly be cleared up if one had a better knowledge of the functional mechanism of the vesical prostatic outlet than one can gain by cystoscopic observation. A slight valvular abnormality might account for some while others may be due to some abnormality in the central nervous system. In the mechanical cases surgery is the only relief. The author's method is to use the galvanocautery through a small perineal cut of the vesical constriction on one or both sides, according to the case. He considers this very much better than any intravesical operation.

4. **Impermeable Stricture of Urethra.**—J. B. Deaver notes that the membranous urethra is the seat of inflammatory stricture, though ordinarily the bulbous urethra is involved in deep stricture. He reviews the methods of attacking impermeable stricture and condemns the blind perineal section. Incision exposing the urethra anterior to the stricture, which is the method most used, has the disadvantage that one is often unable to pass any instrument through the exposed strictured area and one must either make a perineal dissection or carefully dissect backward to the dilated portion of the urethra until the stricture is laid open. Young's operation consists in incising the urethra through the tissue of the apex of the prostate after its exposure by the perineal method. This has undoubted advantages, being carried out on definite and anatomical lines and is the simplest procedure of all. Primary or secondary suprapubic incision into the bladder as a preliminary to urethrotomy behind the stricture, is also condemned. As regards the treatment of the stricture area after it has been exposed, the older teaching was to drain and dilate. The more modern methods of excising the entire area and reuniting the severed urethra over a catheter or supplying the excised tissue from other parts, is too time-consuming to be used in many cases. There is no reason, however, why one should not remove as much as possible of the dense organized scar tissue. It is a help to nature's reparative powers and there is less tendency to new contracture than with mere incision and drainage. Another point emphasized is that a perineal drain should be left after a perineal operation. It is the author's plan, after

establishing a passageway, having excised all the dense scar tissue and having placed a catheter inside the bladder closed over with what tissue he can find in layers, to always bring the catheter out of the urethra anterior to the point of stricture and fasten it to the anterior angle of the skin incision in the perineum. Whether another catheter is to be placed in the anterior penile urethra and brought out through the same wound is a matter for the judgment of the surgeon. The author has had good results both with and without this addition.

5. **Section of Anterolateral Column.**—E. Beer concludes that, surgically considered, the operation of cutting the anterolateral column without doing serious damage to the rest of the spinal cord is perfectly feasible and not difficult. Therapeutically considered, the almost complete freedom from pain produced by this surgical intervention met the indications presented in the case reported by the author, and in many other sufferers a similar intervention would probably give similar relief. Physiologically considered, section (complete?) of the anterolateral column produces (a) a loss of pain sense on the opposite side of the body; (b) a disturbance in thermal sense which suggests that the fibers for heat and cold are disassociated in the cord; (c) slight disturbance of deep pressure sense and slightest disturbance in touch sense, both being impaired without producing any disturbance of the sense of position.

7. **A Possible Factor in the Causation of Pellagra.**—A. H. Jennings and W. V. King suggest that the cosmopolitan stable-fly (*Stomoxys calcitrans*) may be an important factor in the transmission of pellagra. It has practically uniform habits throughout its range and it is abundant in most places, sometimes entering the dwellings in considerable numbers, though it prefers to attack domestic animals, but it readily bites man and it takes its meals from multiple sources, passing from one animal to another. The author's hope is that attention may be directed to the fly as regards its relation to pellagra. Should a causative organism be shown to exist which is a bacterium rather than a protozoon, and should this organism invade the body through the mouth or skin, the common house fly might be strongly suspected as a carrier. The authors also admit that the communication of pellagra in a purely mechanical manner by biting insects is a possibility, and if shown to exist would radically change our ideas as to the species which may be involved.

8. **Malignant Renal Tumors.**—W. F. Braasch emphasizes the importance of immediately ascertaining the source of every hematuria. Of the fifty-three patients operated on for malignant renal tumor who had a definite history of hematuria, but eighteen, or 34 per cent., had been advised to be examined for its source. Hematuria, particularly when so well marked as to color the urine, is always to be considered a sign of some grave condition in the urinary tract. In fact, it would be conservative to regard every case of hematuria as the result of a malignant process until it can be definitely proved to be otherwise. Renal tumor may lie dormant or grow insidiously over a period of years and by the time that hematuria, tumor or pain calls attention to its existence, it should receive immediate surgical attention.

## The Lancet.

*January* 18, 1913.

1. The Etiology of Endemic Goiter. R. McCarrison.
2. Myxedema. W. H. White.
3. On Methods of Research Available in the Study of Medical Problems, with Special Reference to Sir Almroth Wright's Recent Utterances. M. Greenwood.
4. The Treatment of Pelvic Inflammation by Autoinoculation. H. Chapple.
5. Acute Intestinal Obstruction Due to Volvulus of the Cecum P. R. Wrigley.
6. Ocular Myoclonus. E. Thomson.
7. A Case of Tetanus Treated by Intravenous Injections of Paraldehyde and Copious Injections of Normal Saline Resulting in Cure. O. Atkey.
8. Non-syphilitic Arteritis Obliterans ("Thrombo-Angeitis" of Leo Buerger), with Intermittent Claudication of the Left Lower Extremity. F. Parkes Weber.
9. Gapes in Man, an Occasional Helminthic Infection: A Notice of Its Discovery by Dr. A. King in St. Lucia. R. T. Leiper.
10. History and Nature of the Napoleonic Specimens in the Museum of the Royal College of Surgeons, England. A. Keith.

1. **The Etiology of Endemic Goiter.**—R. McCarrison, who has had an extensive experience in the study of endemic goiter in India, notes that two facts emerge from the study of the geographical distribution of this disease. The first is the very marked association of goiter with regions of high mountains; the second, the comparative limitation of the disease to temperate and subtropical zones. There appears to be a family predisposition to the disease. It is found in the large majority of the cases in laborers and miners—in those whose occupation brings them into contact with the soil. The endemic of goiter prevails with different degrees of intensity in different countries and in different parts of the same country. Goiter has made its appearance in many places in which it was formerly unknown. The disease exhibits a distinct seasonal prevalence. In Gilgit and Chitral new cases of goiter arise and enlargements of pre-existing goiter take place during the spring and autumn months, that is to say, during the months of moderate heat. Epidemics of goiter occur in endemic centers, in the neighborhood of such centers, or in localities where the disease has previously been prevalent. It is the author's experience that goiter generally develops in susceptible individuals in a period varying from six weeks to three months after their arrival in a goiterous locality. It is commonly believed that in all endemic localities, not only man but animals also suffer from goiter. Goiter is more common in females than in males, and is considerably more common in children than is generally supposed. With the possible exception of rats, animals do not readily acquire the disease under experimental conditions. Water is capable of conveying in some manner, as yet incompletely determined, the toxic agent of endemic goiter.

4. **Autoinoculation Treatment of Pelvic Inflammation.**—H. Chapple has applied this method in cases of bilateral chronic salpingo-oöphoritis with a very definite history of gonococcal infection. He notes that it is now generally accepted that an increased blood supply to an infected area causes the liberation of an increased quantity of toxins into the general circulation, thus producing an autoinoculation with the products of the actual offending organisms. So by raising the local temperature of the pelvis sufficiently for a definite length of time an increased blood supply to the pelvic organs is induced, and an autoinoculation capable of sufficiently accurate control is effected. The difficulty of isolating the offending organisms is thus overcome. The best results are obtained by regulating the dose both as regards quantity and time of introduction, the aim being to give the second dose when the negative phase produced by the first is over and the positive phase has been definitely entered upon. By this means one can raise the patient's index to the offending organisms and markedly increase her ability to deal with them and their products. Should one be dealing with a case in which the trouble is dependent on an inflammatory mass due to an organism now dead, the pelvic congestion is still of great value, in that the increased vascularity assists in the absorption of the inflammatory products. These processes go on side by side. The desired pelvic congestion is easily produced by the heat emanated from several powerful electric lamps, which are suspended from a suitable cradle, which surrounds the patient's pelvis. It is customary in the use of heat baths in these cases to cover the whole of the patient's trunk and limbs. At first the author adopted this method, but this is obviously not a rational procedure when the object is to produce a definite congestion localized to the pelvis. The cradle should surround the pelvis only,

and the rest of the body and limbs be left uncovered. With the apparatus so arranged the temperature is raised gradually to the maximum the patient can bear, and after a few days a temperature of 180° F. or thereabouts will be reached, and the patient is submitted to this for half an hour at least. When the whole of the body was covered the mouth temperature was found to be raised, and the process was an exhausting one, but with the heat applied only to the pelvis it was usually borne with ease. A maximum thermometer placed in the vagina recorded, even when the bath temperature reached 190° F., an average rise of only 0.5°. This seemed to be a great waste of heat to produce so slight an effect. These observations were also of interest as showing what a slight effect on the deep pelvic structures must be in reality produced by an ordinary hip bath or so-called hot vaginal douche. However, by introducing into the vagina a suitable Fergusson's speculum with its upper end in the posterior fornix and consequently lying almost in contact with the inflammatory area, and its lower end in direct communication with the bath, it is possible to raise the vaginal temperature very considerably and also the actual temperature of the pelvic structures in the neighborhood of the pouch of Douglas.

**8. Thromboangeitis Obliterans of Buerger.** — F. Parkes Weber in reporting a case of this condition states that the disease has been chiefly or almost exclusively observed in male Jews between thirty and fifty-two years of age who have emigrated from Russia. Syphilis apparently plays no essential part in the etiology of such cases, and the real cause of the vascular disease remains unknown, though tobacco smoking may be suspected of being a contributory factor. Most of the patients have been free cigarette smokers, and many of them have been employed in cigarette factories, where they could obtain cigarettes without paying for them. The characteristic symptoms of the disease, as illustrated by the author's case, are: (1) Redness or cyanosis of the foot when it is allowed to rest in a dependent position; (2) pallor of the foot on movement of the ankle-joint; (3) intermittent claudication, with feeling of cramp or pain in the muscles of the calf or instep on walking for a few minutes. (Walton and Paul have termed this "angina cruris" when, as in most cases, one of the lower extremities is the part affected); and (4) absence of pulsation in the arteries of the foot, notably in the dorsalis pedis artery.

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## British Medical Journal.

*January* 18, 1913.

1. Pericolitis. T. Carwardine.
2. A Lecture on Some Points About Drainage of the Abdomen Under Various Conditions of Inflammation. A. E. Barker.
3. Appendicostomy in Place of Colostomy for Relief of Obstruction Caused by Irremovable Cancer of the Rectum and Colon. W. G. Spencer.
4. Gangrene of the Vermiform Appendix and of a Coil of Small Intestine; Operation; Recovery. J. D. Malcolm.
5. Two Cases of Gangrenous Appendicitis with Unusual Histories. G. S. Hughes.
6. The Metabolic Utility of Rectal Feeding. N. Mutch and J. H. Ryffel.
7. Renal Calculus in Childhood. With a Report of Two Successful Cases of Nephro-lithotomy in Young Children. R. Ollerenshaw.
8. The Qualitative and Quantitative Effect Observed on Polymorph Neutrophile Leucocytes in the Treatment of Tuberculosis by Tuberculin. E. H. Black.
9. Observations on Suspension Laryngoscopy, with the Notes of a Few Cases. D. Davis.
10. Recovery After Taking 8¾ Grains of Corrosive Sublimate. A. L. Fuller.

**1. Pericolitis.**—T. Carwardine notes that this condition has its simplest manifestation in the local peritonitis accompanying the firm impaction of a fecal mass in the colon. In lesions of the mucous membrane of the colon causing infection through the lymphatics the adjoining mesentery becomes thickened and shortened from chronic inflammation, a feature met with opposite the diseased area in chronic appendicitis, which causes kinking of the appendix at its middle or proximal part. Wandering kidney sometimes causes colitis. This is primarily mechanical, from local irritation, from displacement and distention of the ascending colon, and from the strain on the colic vessels acting more readily upon the veins than on the arteries, and so inducing passive congestion. In addition, the colitis causes infective inflammation of the pericolic tissues. Thus a vicious circle is induced, mechanical on the one hand, infective on the other; the cecum and ascending colon being in lymphatic connection with the right kidney, so that bacteria and toxins can pass from the colon to the kidney. The association of membranous pericolitis, with symptoms of chronic appendicitis has been described by L. S. Pilcher. The bands may be thin and veil-like, membranous, or as firm sheets of fibrous tissue binding down the cecum and appendix. They tend to restrict peristalsis and to angulate the colon and appendix. Lane has described similar adhesions between the outer wall of the colon and the parietes in connection with chronic constipation, and regards them as hypertrophy of the membranous anchors of the bowel, compensating for the strain of prolonged ptosis but also interfering with peristalsis. The symptoms of pericolic membranes have a great similarity, and resemble closely those of chronic appendicitis. Discomfort and pain are complained of in the right iliac region, with tenderness on deep pressure. These vary with diet and exercise, and colicky cramps occur which may be felt and even seen. Cecal constipation is caused by the defective peristalsis and mechanical impediment, and pain is caused by muscular spasm. This fecal stasis, in which absorption is normally active, causes symptoms of autointoxication. The pain is often referred to the stomach, and secondary digestive disturbances are common. In the later stages of actinomycosis of the appendix, which is not at all uncommon, the pericolic tissues become infiltrated and sinuses form in the loin. Inflammation of the gall bladder, leading to localized peritonitis in its neighborhood, is a common cause of pericolitis in the hepatic region, and is invariable in severe or long-standing cases.

**2. Drainage of the Abdomen.**—A. E. Barker believes that abdominal drainage has been employed too much as a routine procedure particularly in cases of inflamed appendices, and that more discrimination is desirable. After the removal of the inflamed organ and the septic products around it as far as possible by careful mopping, one might perhaps with advantage in some cases stitch up the abdominal opening after cleaning its edges, and obtain primary union with all its advantages. Here, of course, some traces of the septic matter would be left behind within the abdomen; but this can be disposed of by the defensive powers of the peritoneum. So far as can be seen from clinical and experimental observation, a very considerable amount of septic matter is tolerated by the peritoneal surfaces, and can be prevented by them from doing irremediable injury when not in too great amount or overpoweringly virulent. In many cases of perforated gastric ulcer drainage is of no use if not actually injurious. If on opening the abdomen a pyosalpinx with localized peritonitis is found, there need be less hesitation. Here the immediate closure of the wound may be done in the large majority of cases. The pus from pyosalpinx is sterile in about 50 per cent. of ordinary cases. In this group there is no special reason for drainage if oozing from adhesions can be quite controlled. But in the other half of the cases the virulence of the bacteria mitigated by long residence in the body is low, as indicated by the plastic exudation and the absence of inflamed and paretic intestines, and a carefully sutured wound will heal *per primam* in the majority of cases in spite of the pus. Again, in another class of lesions the same question has to be considered. The author alludes to gangrene of the gut from internal strangulation. Here, except where there has been perforation and fecal extravasation, drainage should be avoided after removal of the damaged portion. The plastic processes ap-

pear to be more perfect without a drain, which may prevent the apposition of healthy structures around the line of suture.

6. **Rectal Feeding.**—N. Mutch and J. H. Ryffel note that the rationale of the use of nutrient rectal enemata rests upon the assumption that nutrient maerials can be absorbed by the colon and are metabolized in a normal manner when absorbed. When given in this way saline solution is undoubtedly useful as a source of water. Dextrose solution is fairly well absorbed, but starch and fat are probably of no value. The utility of protein is doubtful. Langdon Brown found no increase in urinary nitrogen as a result of giving partly predigested protein by the rectum, and concluded that earlier observations, showing that as much as 50 per cent. of the protein given might be absorbed, were largely fallacious owing to the notorious difficulty of washing out the colon completely. In these experiments 10 per cent. dextrose was employed in order to obtain as large an absorption of dextrose as possible, but for general use a 6 per cent. solution in tap water, which is isotonic with blood, would be found more convenient as it is less irritating; 15 ounces or more of this solution given four times a day is frequently well retained by an adult, if the rectum is thoroughly washed out once a day with saline solution. It is more useful than saline solution in that the 100 grams or more of dextrose which is thus daily supplied to the body causes a diminution of nitrogenous waste, and the substance employed to render the solution isotonic is oxidized in the body, so that isotonic dextrose solution is more efficient as a source of water than an equal volume of isotonic salt solution.

7. **Renal Calculus in Childhood.**—R. Ollerenshaw emphasizes the importance of being on the lookout for renal calculi, which are probably much more common during childhood than is generally supposed. In cases of abdominal, spinal, hip-joint, or lumbar pain in which the signs and symptoms are not clear, the urine should be carefully tested and a microscopic examination made. The kidney area should be closely examined and a skiagram taken of the whole urinary tract. If possible a cystoscopic examination should also be made. If no sepsis has occurred, the prognosis is excellent. Postoperative shock is the only real danger. When sepsis is present a fistula may persist—this happened in Morris' case and required nephrectomy to remedy it. Palliative treatment by alkalies and other solvents may be effective when mere sandy particles are present, but when a calculus exists of size sufficient to be shown on an *x*-ray plate, it is quite certain that nothing short of operation will remove it. It must also be borne in mind that the sooner the operation is undertaken the better the condition of the kidneys, and therefore the better the chances of success.

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## Berliner klinische Wochenschrift.

*January* 13, 1913.

**Enterogenous Intoxication; Enterogenous Polyneuritis.**—Von Noorden states that the word autointoxication is greatly abused. It was first applied to the terminal stages of diabetes, uremia, cholemia—conditions which were quite definite. Then Bouchard introduced his ingenious conception which so broadened the idea of autointoxication as to make it obscure and vague. For this result Bouchard was in nowise at fault, but those who came after him. Some years afterward a relatively new conception was developed in connection with the ductless glands (thyreotoxicoses, etc.). A distinction must of course be made between endogenous and oxogenous intoxication, the latter practically the same as the so-called "intestinal autointoxication." Since the latter can hardly in any sense be endogenous,, it is best to speak of it as "enterogenic intoxication." There is, no doubt, a border line, *i.e.* there may be poisons manufactured directly in the gastroenteric wall, but of these we know at present nothing. In regard to enterogenous intoxication we know much. The ordinary clearage products of tryptic digestion comprise substances essentially toxic and we do not understand why we are not more frequently poisoned by them. Further the bacterial intestinal flora induce the formation of known toxic substances from the protein of the diet. In recent times there has been much effort to suppress or minimize the formation of these substances —notably by Metschnikoff, but the fact remains that the great meat-eating races which have dominated the world have always had this problem to deal with and show no evidences of deterioration in any respect. A study of works like that of Combe on autointoxication shows for the most part a lack of exactitude in results. We need to be shown just what these poisons are, and what results they are able specifically to produce. The conclusions drawn from these books seem impracticable—such as sparing the resistance of the intestine. The author would prefer to fortify it, of the two courses. Coming now to actual cases of enterogenous poisoning the author gives the following picture of disease: Constipation with habit of taking purgatives (the bowels sometimes move daily of themselves); accumulation of fecal matter in the sigmoid; hyperacidity, due apparently to the colonic atony; tenderness over sigmoid. When instead of constipation we find diarrhea this in nowise changes the nature, for the diarrhea is purely a reflex from the irritation of the feces. It may assume the form of mucous colic. The proctoscope in such cases shows the real nature of the condition. The chief somatic consequence of this condition is apparent in the absorption of some neurotropic substance. Neuralgiform pains appear here and there and in some instances the affected nerves are sensitive to pressure. The same pains may seem to affect muscles and joints and in all cases are fugacious in quality. The author states that as far as the neuralgiform pains are involved these connote a mild neuritis of a selective character. Cardiac neuroses, vacomotor neuroses, may proceed from the same source. In these cases indicanuria is usually marked, serving as an indicator. A toxin has been extracted from the feces which exerts an irritant (vagotonic) action on the vagus. This toxin is doubtless bacteriogenic and flourishes because of some special nutrient substance. Its determination will necessitate prolonged research. We naturally think of some paratyphus-like germ. In this type of enterogenous intoxication we frequently see a temperature rise which vanishes promptly when the bowel has been disintoxicated. Treatment of this affection must materially be protracted, and two or three weeks will elapse before the condition of diet can be decided. We must not confuse these subjects with neurasthenics and arthritics. While no general scheme of treatment can be given offhand, most cases do best on a diet of milk, sour milk, Kefir, etc. Others, however, become worse on this regimen, and improve on a diet of cereals and even sugar, and there are even some who must have mostly animal food.

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## Münchener medizinische Wochenschrift.

*January* 18, 1913

**Sources of Persistent Increased Blood-Pressure.**—Schlayer states that in many diseased states the blood-pressure is persistently elevated: this we have learned through sphygmomanometry. We may cite here bronchial asthma, neuropathy, tabes (crises) in which the interval of increased pressure is relatively short. But there are other conditions in which there is no tendency of the pressure to become lowered and in which a pressure of 250-260 Hg may persist indefinitely. The first element to be isolated of causal significance was kidney disease, while next in order came aortic insufficiency. Graves' disease

was third in order, and in this affection the heart is, of course, directly implicated. An attempt was made to uncover some renal or arteriosclerotic component but this was found to be not worth while. A school of opinion also asserted itself to the effect that arteriosclerosis alone never causes high blood-pressure. Beginning in a measure anew the opinion soon acquired sway that a blood-pressure up to 160-170 invariably meant a renal component. Quite recently the very opposite opinion has gained ground, based on the declaration that many subjects who exhibited for years high blood-pressure showed on autopsy no renal lesion whatever. Evidently the entire subject demanded a new, unprejudiced investigation. Such a one was undertaken by Fischer. Of a large material with permanent pressure above 140 over 60 per cent. showed clinical evidence of nephritis while in about 15 per cent. there was a suspicion of such a condition. In at least 23 per cent. the kidneys could be excluded outright. If we select those only who have a pressure of 160.80 per cent. pointed surely to kidney disease, 16 per cent. probably to the latter and but 3.6 per cent. could be pronounced free from renal lesion. The author in his own studies found evidence of renal lesion (by autopsy) in every individual case of increased pressure, but the patients studied (Suabians) are extremely prone to kidney disease. The practical significance in these cases is hard to determine. We know that protracted hypertension may vanish in time, even in cases of renal disease. The exact relationship between renal lesions and arterial reaction is still unsolved.

**Causation of Infantile Paralysis.**—Josefson has investigated this subject in Sweden, one of the countries most ravaged by the Heine-Medin disease. His results are in agreement with those obtained in the United States and elsewhere. Numerous experiments were made to test all the possibilities announced from time to time, and the order of research does not vary essentially from that established in other localities. Animal inoculation from suspected substances was practiced. While flies *per se* could not be implicated in this research, the dead matter upon which they feed could be accused with probability. "Handkerchief extracts" of suspected carriers were freely tested and were readily found to convey the disease. The dust of rooms of victims was also found to be infectious. It seems undoubted that the parasite may flourish outside the body on dead albuminous matter for a variable period. It may, of course, reach the food and exist in it, but researches in this direction have not yet been undertaken.

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## Deutsche medizinische Wochenschrift.

*December 19, 1912.*

**"Thirst Cures" in Chronic Bronchial Affections.**—Singer refers to the customary management of bronchiectasis, bronchoblenorrhea, putrid bronchitis, bronchial asthma, etc., the aim being to secure an expectorant effect. Inhalations, drink cures, climatic and hydriatic procedures, balsamics, posture cures, compression cures have been used with more or less success. The opposite idea of a dry cure has been but little employed, although tested to some extent in collections of fluid, obesity, etc. It is open to some grave objections, at least in theory; and some of those who have used it extensively warn against carrying it to extremes. Naturally it coincides with experimentally induced states of thirst. It is well in thirst cures to let the patient eat what he wants in quantity as well as quality. Further, he should not cut off his water supply suddenly. A dry cure may be carried out as follows: For three days take fluids to extent of 200-400 ccm. in the form of water, milk and soup, or entirely as white wine. If extreme thirst develop use oranges or lemons. The fourth day may be a drink day in which as high as 2000 ccm. may be drunk. Thirst may be artificially treated by a few drops of anesthesin or eucain solution, as in exclusive rectal feeding. The conclusions as to the efficiency of dry cures in chronic bronchial affections are as follows: In a modified form in which dry days are the exception instead of drinking days, the amount of sputum is much diminished, not only for the time being but to a certain extent permanently. This dry treatment may be enhanced by adding sweating cures, electric light baths and atropin or alternating them. The dry treatment is also well adapted to antagonize the spasmophilic state in bronchial asthma.

**Tuberculous Etiology of Menstrual Disturbances.**—Hollos speaks of the long-known fact that incipient tuberculosis can suppress the menses to a greater or less extent. This relationship is variously explained, as by anemic suppression. After five years of study the author announces that the amenorrhea results directly from tuberculosis toxins formed somewhere in the organism. They coexist with other toxigenic phenomena. While the best-known type is protracted amenorrhea, great irregularity is common in the intervals and in the length of the periods themselves. Extremely common is dysmenorrhea (painful hemorrhage). Numerous other symptoms cited by the author are such as are commonly associated with suppression. The author has been able to provoke dysmenorrhea by the injection of tuberculin. The prognosis in these cases seems better (?) than in tuberculous women who present no menstrual difficulty. In fact, Hollos thinks, the subjects with menstrual troubles seem to have been immunized to some extent.

**The HCl Treatment of Pernicious Anemia.**—Croftan of Chicago refers to an earlier publication on this subject. He believes that HCl treatment is pure substitute therapy, as these patients suffer with achylia. He administers 15 drops of the strong acid after each meal. Three remarkable cases are given in full. Although cured of the anemia the achylia may persist, so that HCl must be taken off and on. In all he has notes of 14 cases with notable improvement. Colleagues have also reported favorably on the method, but a number of the cases treated were not pernicious anemia. In Europe Hess has published good results from HCl and high protein feeding.

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**The Intolerance of Children to Morphine.**—A. Ravenna reports the case of a 17-month-old infant that received for its paroxysms of pertussis a subcutaneous injection of morphine. As the result of an error in the preparation of the solution, the latter contained 0.01 gram instead of 0.001 gram as was intended. The injection was followed by severe collapse with subnormal temperature, coma and extreme miosis, from all of which the infant slowly recovered in response to stimulation. This case indicates that although the child is quite susceptible to the influence of morphine, one need not be too anxious in administering this drug to children.—*Rivista di Clinica Pediatria.*

**Congenital Syphilis and Mental Disease.**—H. R. Dean classifies the cases in which congenital syphilis is the cause of disease of the nervous system into three groups: (1) The first group includes infants who are born with marked evidence of syphilis. In these cases the brain, together with other organs of the body, is the seat of marked change. These children as a rule die within a short time of their birth. (2) This group includes children who appear to be healthy at birth but which develop mental defects at the time of the second dentition or at puberty. To this group belong the cases of juvenile general paralysis. (3) In this group may be placed those cases of mental deficiency, imbecility and idiocy in many of which the Wassermann reaction constitutes the sole evidence of a syphilitic orgin.—*British Journal of Children's Diseases.*

## Insurance Medicine.

**Albuminuria in Life Insurance.**—In a paper read before the New South Wales Branch of the British Medical Association, Dr. C. MacLaurin tells of the methods employed by the Mutual Life and Citizens' Company of Sydney to decide the acceptance of applicants who have albuminuria. A distinction is made in those cases which show albumin in the urine before and after the age of thirty. Those over thirty the writer considers poor risks and but rarely accepts; of those under thirty he carefully considers both family and personal history and general physical condition before making a decision. A history of either scarlet fever, diphtheria, nephritis, cardiac lesion, or poor physique in these albuminurics is sufficient ground for exclusion. Of the great number remaining, however, he finds the majority fit for insurance. Much judgment must be displayed in the selection of these cases; often these young albuminurics are government workers, and insurance is required before they enter the civil service. Also, the interests of the company must be safeguarded.

All substandard lives are classified as immediate, increasing, and decreasing risks. Immediate risks cover those in whom, organic disease being present, death is apt to occur shortly after insurance. Decreasing risks cover those with a faulty family history, for instance, tuberculosis, and the applicant himself is physically under normal, but not tuberculous. It is known that the longer he lives the less risk there is of tuberculosis developing. Increasing risks cover those who may be expected to reach middle life without any special physical failing, but who degenerate earlier than the average healthy individual; these are typified by men with certain heart lesions, chronic asthma, etc. Under this head are classed the young albuminurics; for while there is sufficient evidence that they reach middle life in safety, little is known of their subsequent progress. So this is considered the fairest and safest way to deal with them. A special form of endowment is adapted for these increasing risks and has proved very popular among these young albuminurics, who otherwise might be refused assurance. A little higher premium is asked and risks are so calculated that, while the office is protected, the applicant is decidedly benefited. In cases where there is a possibility that real organic disease, though latent, may develop, a three or four years' condition is imposed. By these means many who would be refused insurance are accepted and on very favorable terms. The ultimate result, as yet, is not known, but the evidence tends to show that the result will be favorable to both sides.—*Australasian Medical Gazette*, November, 1912.

**Statistics of Rated-up Lives.**—In his presidential address before the Life Assurance Medical Officers' Association, at the annual meeting, held in London, on February 14, 1912, Dr. F. de Haviland Hall drew attention to the statistics of the rated-up lives of the Rock Life Assurance Company. He was distinctly of the opinion that there exists a tuberculous diathesis; in other words, some individuals are born with slight powers of resistance against the tubercle bacillus, and without exception become ready victims if they are exposed to infection. With regard to rating for gout, judging from the experience of the Rock Company, Hall thought they should emphasize the importance of a very careful examination of applicants with a gouty history, especially as regards the condition of the cardiovascular system. Referring to syphilis, he expressed the opinion that possibly in the future it might be found that applicants who gave a negative reaction to the Wassermann test could be taken without loading. Want of vigor and general condition of the applicant was passed in review and Hall deemed that the statistics of the Rock Company justified the conclusion that applicants of this kind should be regarded with suspicion. He thought that the figures available favored the view that the experienced medical practitioner was able to recognize from the appearance of the individual, apart from any definite physical signs, that he had an expectation of life less than his age. He said that he was afraid that the tendency of the physician of to-day was to depend too much upon the results of the pathological and bacteriological laboratories, and that he was neglecting the thorough inspection of the patient which was practised by the great physicians of the past generation. Hall was convinced that individuals, who were much over-weight, were very unsatisfactory lives. It was pointed out that in only three instances was an addition imposed on account of occupation, and in all three the reason for the addition was the fact that the applicant was a licensed liquor dealer. In conclusion, attention was drawn to the fact that in rating up damaged lives more definite figures were needed. America had set an excellent example in this direction, and he trusted that Great Britain, which was the pioneer of life assurance, would wake up and assist in this important task.

**Apoplexy Due to Accident.**—A case is related in which on the testimony of a fellow employee an individual was seen to have been suddenly paralyzed during his regular hours of labor; or, more exactly, his duties having just been completed he was about to dress to go home. He had just assisted in moving a piece of furniture from the factory to the storehouse. The weight was about 200 lbs, and it was only moved on the level. The victim's trade union refused to recognize the stroke as having been due to the occupation. The exertion made beforehand was strictly within the limits of his regular activities. The plaintiff, backed by the family physician, brought action. The court sought to determine whether the attack had been one of ordinary apoplexy or an apoplectiform attack in connection with general paralysis. The latter could be readily excluded. As a case of genuine apoplexy the supposition was that if the blood vessels had been abnormally brittle from calcareous degeneration, the elevation of blood pressure in lifting the furniture might cause a rupture of an artery and hemorrhage. The court sustained the claim of the plaintiff, whereupon the union appealed the case but by reason of another expert opinion, withdrew the appeal and paid the full annual indemnity. Later, the patient suffered a second stroke and finally a third fatal one. In neither of these was there any apparent element of exciting cause. It was thereupon finally decided that the first stroke had no necessary connection with the occupation. The union was released from all obligations under litigation. The fact was apparent that when the patient's physician first promptly called the case an accident of occupation he paved the way for all the subsequent litigation.—*Zeitschrift für Versicherungsmedizin*, 1912, V. Heft 9.

# Book Reviews.

Sprue. Its Diagnosis and Treatment. By Charles Begg, M.B., C.M., Edinburgh. Formerly Medical Officer Chinese Imperial Maritime Customs, and H.B.M., Medical Officer, Hankow, China. Illustrated. Price $2 net. New York: William Wood & Company, 1912.

Sprue is a disease the importance of which is hardly fully recognized. It is the cause of a considerable amount of sickness and disablement in the Far East. Furthermore, its geographical distribution is wider than is generally imagined. Dr. Begg has had a long experience of the malady in the Far East and consequently his conclusions thereon are valuable. As for its etiology he holds that sprue is a microbial infection of the bowel of unknown origin. With regard to treatment the author is of the opinion that each case must be dealt with on its merits. However, the drug he mainly favors in its treatment is old yellow santonin in 5-grain doses night and morning rubbed up in a teaspoonful of olive or almond oil. If the patient does not tolerate the oil the santonin may be given in the form of soft gelatin capsules. When such treatment is continued for a week recent or mild cases are improved. Of course chronic cases are more obstinate and it may be necessary to repeat the treatment at intervals, as soon as the patient appears to be retrogressing. According to Begg new colorless santonin has no therapeutic action on the complaint and only old santonin, the older the better, is of use. Moreover, the santonin should have been exposed to sunlight for six months at least. Begg does not appear to place much faith in mouth disinfectants, although some authorities have stated that an effective disinfectant is of much value. The book is well printed and bound, contains some good illustrations, and may be recommended to those who practise in regions in which the exceedingly troublesome disease sprue is present.

An Introduction to the Study of Infection and Immunity, including chapters on Serum Therapy, Chemotherapy and Serum Diagnosis. For Students and Practitioners. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons, Baltimore, Maryland. Illustrated. Price $3.25 net. Philadelphia and New York: Lea & Febiger, 1912.

This book was written with the view of providing an adequate means whereby the general practitioner might familiarize himself with the essential basis upon which the new science of immunology has been established. The author follows the teachings of the German school more than that of any other school, and while allowing that to Wright is due the actual introduction of the method of antityphoid vaccination in common use severely criticises his teachings as to the value of the opsonic index. Of course it is generally argued by Wright and his disciples that in many instances in which the opsonic index fails this is due to the fact that the method is not employed properly. Be this as it may, it is more than probable that the technique of the method is too elaborate for general use and that this alone will obviate its employment by the general practitioner. The side chain theory is discussed at considerable length and Simon is of the opinion that this theory accounts satisfactorily for the formation and specific action of the antibodies and thus far the origin and mode of action of some of the most important defensive factors of the animal body, and accordingly he considers some of the more general aspects of the problems of immunity upon the basis of Ehrlich's views. As may be imagined the author is a somewhat enthusiastic advocate of salvarsan in the treatment of syphilis and suggests that it may be of value also in the treatment of some non-syphilitic maladies. The book affords a satisfactory review of a science which is as yet in its infancy and concerning which it would be rash to make dogmatic statements. The binding and printing of the volume are excellent and the illustrations are good.

A Reference Handbook of the Medical Sciences. Embracing the Entire Range of Scientific and Practical Medicine and Applied Science. By Various Writers. Third Edition, Completely Revised and Rewritten. Edited by Thomas Lathrop Stedman, A.M., M.D. Complete in Eight Volumes. Volume One. Illustrated by Numerous Chromolithographs and Six Hundred and Eleven Fine Half-Tone and Wood Engravings. Price $7.00 net. New York: William Wood and Company, 1913.

At no time more than the present has there been such a pressing need for a work of reference that would cover the entire field of medicine and of auxiliary and other related sciences. No introduction is necessary for the "Reference Handbook" which in its two former editions and supplements has filled the important place of a standard work in the medical library. The enthusiasm with which the many problems of disease have been probed during the past ten years, both in the laboratory and in the clinic, and the vast additions that have been made to the literature of medicine during this period have rendered necessary a complete revision of this work. It will suffice to point out a few of the special features of the latest edition, the first volume of which has just appeared. The work appears in a new garb, with an improved quality of paper and a clearer type, so that the page is decidedly more attractive. A number of new features have been introduced. There have been provided a larger number of cross references, and under these in many cases there is given condensed information which may obviate the necessity of referring to the main article. The history of medicine, including brief biographies of noted medical men of the past, forms an important addition to this work. There is a more complete discussion of zoological topics and the articles on health resorts have been greatly amplified. In glancing casually through the first volume one notes the large amount of space that is accorded to subjects in which there have been important developments within recent years. It is not necessary to refer to more than a few of these. In the article on anesthesia and analgesia the latest theories on sensibility, including the rôle of the optic thalamus with reference to the affective tone of sensations, are fully discussed. The article on general anesthesia details with the aid of numerous illustrations the newest methods of administering anesthetics, particular prominence being paid to the use of warmed ether by the drop method; the methods of intratracheal, intravenous, and rectal anesthesia are also described. The recent developments in the surgery of the arteries are described in an article of fourteen pages. A liberal allotment of thirty-three pages is given to the subjects of acute and chronic arthritis, which are presented with the aid of many excellent photomicrographs, photographs of patients and of apparatus, and radiograms. A thorough summary of the present knowledge of pathogenic bacteria is given in an article, really a treatise, of fifty pages, which is embellished with three superb plates. Bacteriological technique is dealt with in a most exhaustive manner in a separate article. In the articles dealing with the abdomen, the surgical anatomy, injuries, the regional anatomy of its organs, the various types of abdominal incision, and the diagnosis of abdominal tumors, are all fully discussed. These and a number of other articles appeared in the former edition, but have been revised and modernized for this. A large number of valuable data are presented in an article on age—data for estimating the age of fetuses, the eruption of the teeth, the order of ossification of the carpal bones, the stages of anatomical age as indicated by the ossification in the wrist, the number of teeth and wrist bones in relation to age and sex, the chronological age of the first menstruation, and the varying ages of puberty. Anaphylaxis is discussed in its many theoretical and practical aspects. Among other important articles may be mentioned the following: the Basle anatomical nomenclature, the history of anatomy, angina abdominis, angina pectoris, animal experimentation, medical anthropology, anthropometry, antitoxins, appendicostomy, argyria, diseases and injuries of the arm and forearm, the army medical department, the army field service, army medical statistics, cardiac arrhythmia, asthma, ateliosis, gastrointestinal autointoxication, automatic actions, and the hygienic relations of the automobile. This brief enumeration conveys some idea of the comprehensive nature of this work. The bibliographies appended to some of the longer articles are a valuable aid in the further investigation of the subject. Of eminently practical value are the short articles on the materia medica, including the latest remedies, and the succinct descriptions of mineral springs and health resorts.

Christ Among the Cattle. A Sermon. Preached in the First Congregational Church, Portland, Oregon. By Frederick Rowland Martin. Sixth Edition, Revised and Corrected. Price 60 cents. Boston: Sherman, French & Co., 1912.

This sermon, which has had a considerable vogue, is to a large extent a consideration of the vivisection question regarded from the standpoint of religion and sentimentalism. The matter is discussed eloquently, but in so one-sided a manner that it loses a great deal of its force and will hardly commend itself to the scientific physician or to the unbiased intelligent layman. There are many much stronger antivivisection arguments than the author furnishes here.

# Society Reports.

## REPORTS FROM THE TUESDAY CONFERENCES OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.

FIRST DIVISION—DR. JOSEPH COLLINS.

**Acute Bulbar Paralysis.** — Dr. Collins, in presenting the case, said that incomplete, or better said, atypical, cases of bulbar paralysis were rare. Chronic degenerative lesion of the neuclei in the ventral portion of the oblongata is accompanied by a group of symptoms which is typical, and no one, not even the beginner in diagnosis, can fail to put proper interpretation upon them. Not so, however, with acute lesions in the oblongata in which neither the onset of the symptoms nor their association is characteristic or typical. A young man who came to the Neurological Institute in October of this year is illustrative of this. A bookkeeper by occupation, 35 years old, related that in March of the present year he was suddenly seized with drowsiness, a sense of apprehension, and faintness while seated at his desk. He soon got a glass of spirits which he thought revived him. He at once noted a numbness and tingling in the fingers of the right hand, and he soon experienced difficulty in speaking (phonating) and in swallowing. These symptoms have continued until the present time. When he attempts to speak the face remains curiously immobile and expressionless and he does not succeed in making any tone save here and there an irregular note. He can whisper very distinctly. On drinking a glass of water he swallows the first two or three mouthfuls very well, but after that the act of deglutition is very slow, and if he persists the fluid is likely to regurgitate. It is much the same when he takes solids; consequently, it takes him an extremely long time to eat his meals. He can make rapid and extensive movements of the tongue both within and without the mouth, and he is able to pucker the lips. There is no indication of atrophy. A curious symptom is a deficient innervation of the left side of the face, especially the upper part, contrasted with the right. This is the only evidence of paralysis save that revealed by the laryngoscope. This condition is best depicted by the accompanying illustrations.

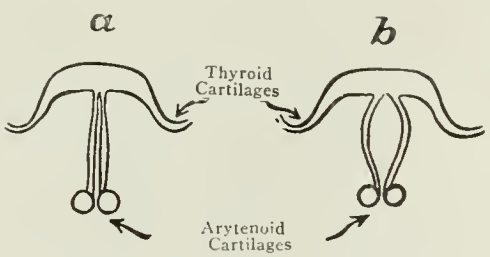


FIG. 1.—Diagram of the vocal cords; *a*, normal closure; *b*, incomplete closure in the case reported.

The patient is unable to speak save in a whisper, here and there a tone being added to the attempts at vocalization. When he attempts to speak, the vocal cords in their upper one-half remain flaccid; in the lower half the arytenoids seem to contract, and as a result of this, the space between the vocal cords becomes ovoid in shape, the wide end of the ovoid being above. In other words, there is a paralysis of the superior laryngeal nerve.*

The only other striking symptom which the patient presents is a profound cyanosis of the finger-tips extending through the two proximal phalanges. This is not a constant condition. It occurs most conspicuously when the hands are exposed to cold or when the patient gets very fatigued. Occasionally it displays itself only in alternate fingers, but as a rule all the fingers are involved. The patient can use all his extremities dexterously and with average strength, and the tendon jerks are not perceptibly altered. There is no disturbance of any variety of sensibility, and the vegetative functions of the body are not particularly abnormal. The electrical reactions in all the muscles susceptible to examination are quite normal, and there is nothing approaching the so-called "myasthenic reaction."

In brief, then, the conspicuous symptoms which this patient displays are: (1) aphonia; (2) dysphagia; (3) immobility of the facial muscles which gives an extraordinary masklike appearance to the face, especially to the lower half; (4) cyanosis of the extremities, particularly the finger-tips; (5) paralysis of the vocal cords; all coming on abruptly after an attack resembling syncope, in a young man who had had, five years before, a luetic infection which apparently ran an uneventful course, and in whom, after the occurrence, examination of the blood and the cerebrospinal fluid revealed no evidence of the activity of the infection. Moreover, there was no indication of disease of the blood-vessels, so far as such condition was revealed either by palpation or by rise of blood pressure. The patient has been under observation for about two months, and during that time his condition has not materially altered save that he feels better and stronger, and he is able to do some clerical work. When he attempts to use the muscles supplied by the oblongata, however, his bulbar symptoms become more striking.

Interpretation to be put upon such symptoms is, I believe, that there has been thrombosis in those terminal branches of the vertebral artery within the oblongata, known as the bulbar arteries, and that this disorder of circulation—comparatively slight though it probably is—has caused a disorder, organic in nature, of the nuclei of the ninth and tenth nerves particularly. The initial symptoms which he had, namely, the drowsiness and the syncopal sensations, are to be interpreted, it is conjectured, as the result of a disturbance of the entire intracranial circulation resulting from the thrombotic deposit in the bulbar arteries, which in turn was incidental to a luetic endarteritis.

It is now fairly well proven that in luetic endarteritis, whether it be extensive or narrowly confined to small or large blood-vessels, the laboratory tests to reveal the existence of infection are, as a rule, negative. In some instances the Wassermann test in the blood may be positive, but rarely does the cerebrospinal fluid react with any of the four tests (Wassermann test, globulin, reduction of Fehling's solution, and increase of lymphocytes) which we have learned are so valuable in the diagnosis of the organic nervous diseases of the cerebrospinal axis that flow out of syphilis. So that in this instance, interpreting the case, as we do, as one of luetic endarteritis, we are not deviated from that opinion because of the absence of these indications of the fundamental infection.

The part that alcohol played in the genesis of his disease was undoubtedly an important contributing one; but, alone, it is insufficient to produce the condition which exists. Alcohol, it is well known, causes a variety of polioencephalitides which have distinctive clinical features. The pathological process in this instance, however, is not an inflammatory state, but is a very mild degenerative state analogous to that of a slight and slowly progressing myelomalacia. It is a condition which may well result, under appropriate medical treatment, in a very considerable degree of recovery.

On account of the possibility of the condition being due

*In speaking of the faulty tension of the vocal cords this condition has been ascribed above to impaired innervation by the external laryngeal nerve. It is also to be noted that the thyroarytenoid muscle has been said to take some part in producing tension of the cords. Some anatomists, indeed, state that this muscle is the one chiefly responsible for their action (Quain). This, of course, is innervated by the recurrent laryngeal nerve.

to an involvement of the recurrent laryngeal nerve stereoscopic .r-ray examination of the chest was made by Dr. Cole. The abnormalities he reports are the following: Just below the arch of the aorta, which by the way is normal, there was an indistinct spherical shadow about an inch in diameter, and a slight thickening around the roots of both lungs. He does not believe that there is an aneurysm and this small mass seems to be entirely independent of the aorta and too far to the left to interfere with the recurrent laryngeal nerve.

Even did this involve the recurrent laryngeal nerve the lesion would be unilateral instead of bilateral as in our case, and also there would probably be some failure in the adduction of the cords at their insertion into the arytenoid cartilages.

SECOND DIVISION—DR. FREDERICK PETERSON.

**Compression of the Spinal Cord; Relief by Operation.**—Dr. Foster Kennedy showed the following case: P. M. H., male, age 27, was admitted to hospital on January 30, 1912, complaining of inability to use his right arm and right leg in a normal manner. His previous history had been good. On November 2, 1911, the patient fell down an elevator shaft a distance of 35 feet. It is supposed

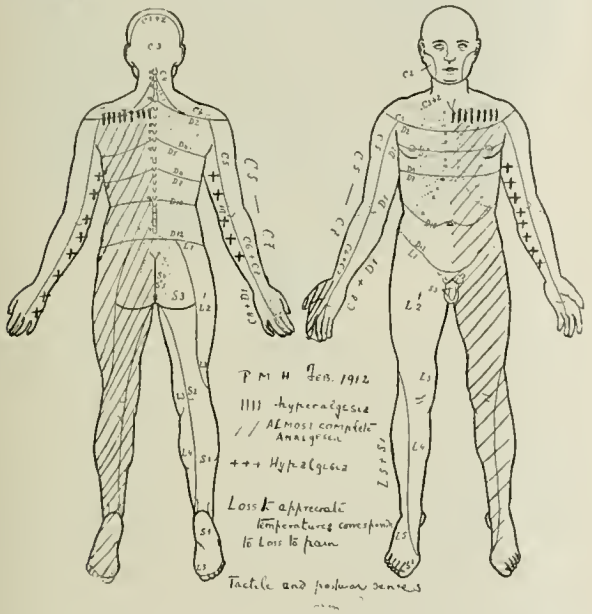


FIG. 2.—Sensory disturbance in a case of compression of the spinal cord.

that he alighted on his head and right knee. Some hours later he recovered consciousness in a hospital. However, for two or three weeks he remained more or less constantly delirious. It was noted during this time that all four limbs appeared paralyzed. The right side was entirely paralyzed, whereas the left limbs were rarely and but slightly moved. However, the left rapidly improved and in two weeks was apparently entirely well with the exception of some residual weakness in the left hand.

As a result of the fall he fractured the right patella. The right knee was encased in plaster-of-Paris. Some weeks after the accident the patient noted that his right arm was adducted to the chest and bent at the elbow. Up to the beginning of December, 1911, he had no power in his right arm and leg. The first movement returned was adduction of the little and ring finger, then by rolling movement he became gradually able to extend the forearm to an obtuse angle. On removing the cast from the right knee he was found to be unable to move the knee. The first movement returned in the right leg was that of dorsiflexion of the toes. He had no severe pain beyond a pricking sensation in the left thumb and the radial aspect of the left forearm. He has had frequent jerking of his right leg. When he bends his neck suddenly there is a pins-and-needles sensation in both arms and occasionally in the feet. He has had no sphincter trouble.

Patient's neck is turned slightly to the right, with moderate elevation of the chin. All the fingers of the right hand are flexed, the little finger to the greatest and the index finger to the least degree. The right arm can be voluntarily elevated to not quite a right angle. There is a slight ankylosis of the right shoulder joint. Right triceps, deltoids supra, and infraspinatus muscles are very weak. Weakness of flexor of the right wrist. Weakness of extensors of right wrist and to a lesser degree those of the left wrist. A considerable degree of atrophy is present in all these muscles. Weakness of the extensors of the right thigh and the right peroneal muscles. In consequence of which there is a drop foot on the right side. The left pupil is dilated and larger than that on the right side. It dilates badly on shading. Otherwise, his cranial nerves are normal. His gait is spastic and his station unsteady.

Reflexes.—Knee-jerks are increased, the left being the greater. Ankle-jerks ditto. Ill marked ankle clonus on both sides. Double extensor response in the plantar reflexes. Abdominal reflexes absent. No sphincter trouble. The sensory system shows almost complete abolition of pain and temperature appreciation over the left side of the body below the level of the second dorsal spine, and to a lesser degree also along the radial borders of both arms. The tactile and postural sensibility are normal (see chart). The lesion therefore is evidently one producing damage to the right side of the cord in the lower cervical region producing ipsolateral motor paralysis and contralateral sensory paralysis by reason of damage to the fibers conducting pain and temperature sensibility crossing from the left to the right side of the cord.

A skiagraph by Dr. Cole shows that the fifth and sixth cervical vertebræ are displaced backward and that there is apparently a bridge of bone between them, the fifth vertebræ being tilted forward on the sixth. There is a very great flattening in the fifth and an irregularity in the sixth foramina.

On February 8 Dr. Elsberg operated. An incision 10 cm. long was made upward from the level of the seventh cervical spine, which was first exposed. The fifth and sixth spines were not in the normal line but lay very deeply to one side, so that considerable muscle tissue had to be divided before they could be seen. The spine of the sixth vertebra was first removed and the corresponding laminæ were found to be very deep and abnormally movable. The spines and laminæ of the fifth and sixth vertebræ were removed after considerable difficulty. The theca was very thick and did not pulsate. Incision of the theca exposed the pia distended with fluid; a small opening was made in the pia and a large amount of fluid under considerable pressure spouted up 6 inches from the wound. It was evident that the fluid came not from above but from below. The exposed cord was much flattened, being at least 2 cm. broad. It felt normal in consistency but was decidedly angulated at the level of the body of the fifth cervical vertebra. As the effect of the removal of the spines and laminæ was felt to be sufficient to relieve any pressure on the cord and as there was nothing abnormal such as a hemorrhage to be felt in the cord, the operation was stopped. The operation was well borne.

On February 12 it was found that pain stimuli could be appreciated on the dorsum on the left foot; the abdominal reflexes were present for the first time on both sides, that on the left being greater than that on the right. Power in the left leg had improved and the plantar reflex on the left side had become normal in type.

On March 6, 1912, spasticity of the legs has become much less marked. Patient's gait has correspondingly improved. The spasticity in the right arm completely disappeared. Grasp in the right is firm though still weak; the left upper extremity shows gradual though steady increase in power. The electrical response of all the muscles of the right arm is prompt; this in the triceps being a marked improvement over the condition existing prior to surgical interference. Pain and temperature are readily appreciated on the dorsum and sole of the left foot. Over the whole of the left lower extremity the patient distinguishes between sharp and blunt instruments; also he is able to distinguish the warmer of hot and cold tubes, but there is a great deal of confusion in interpreting successfully whether the sensation is actually hot or actually cold.

THIRD DIVISION—DR. PEARCE BAILEY.

**Aneurysm of the Vertebral Artery.**—Dr. Bailey presented a pathological specimen of this condition giving the history of the case. The patient, R. W., 37 years of age, a druggist, was admitted to the hospital October 29, 1912. There was paralysis of both arms and legs and stiffness and rigidity of the neck. The history given was as follows: For the past two or three years he had some difficulty in raising the right arm when reaching for bottles on the shelves in his drug store. Although he was right handed he soon came to use the left arm in preference to the right on account of weakness of the right. Several years before this he had noticed some stiffness and rigidity of the neck.

On June 29, 1912, he began to experience severe, sharp, shooting pains in the back of the neck, radiating to the top of the head and which were more or less constant. Since then the pains have been severe enough to require morphine for relief. At this time he also had some tingling and numbness of the right hand with some weakness, a condition which gradually increased until he was almost robbed of the use of the right arm. At the same time there was some beginning weakness of the left hand.

Fig. 3.—Skiagraph of cervical spine, showing a displacement of the fifth and sixth cervical vertebræ.

Since June he has lost sexual power. About a month before admission he experienced tingling sensations in the right foot associated with some weakness. This gradually progressed, although he was still able to walk until a week before admission, when he became rapidly worse so that in three days he was unable to walk or to use his arms. The pains in the neck at this time became very much more severe.

On admission to the hospital he was paralyzed in all four extremities. This paralysis was flaccid with exaggeration of the knee jerks and ankle clonus. There was also an anesthesia of the body which extended up into the cheeks, corresponding in distribution to that of the second cervical segment. Movement was so painful that

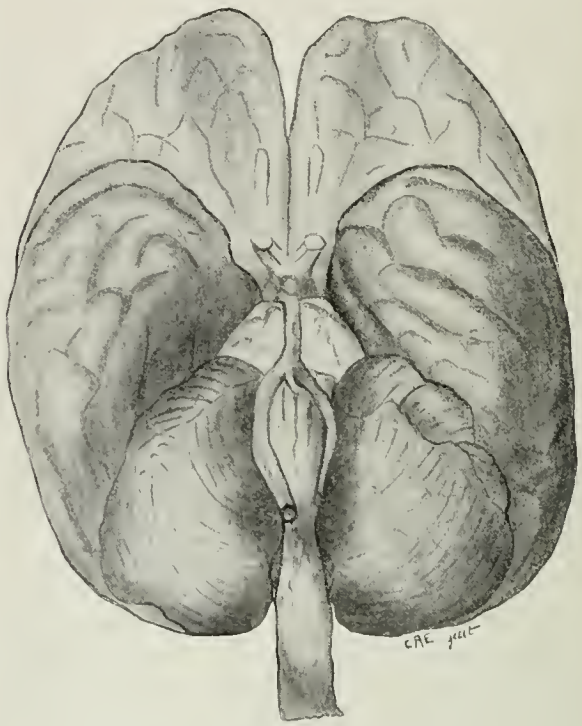

Fig. 4.—Aneurysm of the right vertebral artery with compression of the spinal cord.

the back was not examined. There was retention of urine requiring catheterization. The pupils were very small but reacted to light.

The man died thirty-six hours after admission. His condition while in the hospital was precarious and lumbar puncture was impossible. Death resulted from pulmonary edema with a rising temperature. There was no marked increase of pulse rate and there were at no time symptoms of involvement of the medulla.

The case presented, therefore, symptoms of a long standing irritation and injury to the spinal cord which terminated in an acute and fatal attack which abolished the cord functions at the level of the second cervical segment. During life the most probable diagnosis seemed that of a tumor which had suddenly extended or caused pressure.

Post-mortem findings showed a very extensive condition of aneurysm of the right vertebral artery. This aneurysm accounts practically for all the symptoms, *i.e.* the long standing stiffness and rigidity of the neck until finally an increased distention of the aneurysm fatally injured the spinal cord at the indicated level. At the point of compression the cord was very soft, compressed, and dark in color. On section it was extremely soft and dotted with hemorrhagic areas. Microscopically it showed great destruction especially of the gray matter. The cord section showed some hemorrhages and the most probable explanation seems to be that of an anemic necrosis from pressure by the aneurysm which deprived the cord of its blood supply. The affected vertebral artery was the seat of an extensive endarteritis and also some endarteritis in the other cerebral vessels. There was also some evidence of degenerative disease in the spinal laminæ.

## NEW YORK ACADEMY OF MEDICINE.

*Regular Meeting, Held January 2, 1913.*

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

**Quarantine in the Maritime Cities of the United States.**—The Public Health, Hospital, and Budget Committee of the New York Academy of Medicine made this report, which is briefly summarized as follows: 1. Because of the international character of modern commerce the tendency of the last fifty years has been from local and provincial regulations to uniform national and international rules and laws. 2. Prior to 1893, there was no national system of quarantine in the United States. Since that time 47 ports have come under the control of the Public Health Service of the Treasury Department, so that there are at present only three ports whose quarantine stations are managed by local and state authorities. 3. In order that the United States may be a responsible party to international agreement regarding quarantine regulations, it must have control and supervision over all the ports of the country. 4. The record of the past work of the United States Public Health Service is such as to insure confidence in its efficiency. It has a well trained staff of medical officers and is equipped for efficient quarantine administration. 5. Quarantine work is essentially scientific in its nature and can be carried on efficiently only if the tenure of office is independent of changes in administration and of politics. 6. From the point of view of convenience, efficiency, and uniformity of administration, economy, and law, the arguments are in favor of a national control of quarantine in all parts of the United States.

*Recommendations.*—The Committee on Public Health, Hospitals, and the Budget of the New York Academy of Medicine recommended: 1. That the Quarantine Station at the port of New York be transferred to the United States Public Health Service; and 2. That the Council of the New York Academy of Medicine take appropriate action to further actively the above recommendation.

**The President's Address.**—Dr. WILLIAM M. POLK delivered this address (see page 139).

The scientific session was held under the auspices of the Section on Genito-Urinary Surgery, and consisted of a symposium on "Lithiasis of the Urogenital Tract."

**Ureteral Lithiasis.**—Dr. HUGH CABOT of Boston presented this communication and gave a lantern slide exhibit. He called attention especially to the operative treatment of these cases. The decision to undertake an operation for a stone in the ureter must depend upon one's opinion of the extent to which the integrity of the kidney was being menaced. With the present highly developed technique and exceedingly low mortality it was clearly unwise to allow any considerable menace to the integrity of the kidney to continue after the diagnosis had been made. It was permissible to wait in two classes of cases: 1. Those in which the stone was small and could be demonstrated by the *x*-ray to be making reasonable progress down the ureter. 2. There was a not inconsiderable number of what might be called chronic stones in the ureter which had worked their way downward slowly without severe symptoms and which had probably at no time totally obstructed the ureter. In these cases a catheter would usually pass freely to the kidney, and they might be compared to those cases of stone in the common bile duct which occurred in the absence of jaundice. In such cases ultimate removal of the stone must be advised unless the patient was totally unable to withstand any major operation. On the other hand, it was clear that no great urgency existed and that various social and financial affairs might be permitted to influence the decision. Nothing more than reasonable delay should be countenanced as the kidney in these cases was probably always infected and the progress of the infection could not be assumed to be stationary or even slowly progressive. In the operative management of ureter calculi certain general principles might be laid down. There must be a good exposure which would enable one to deal with the ureter freely and without constraint. The ureter must be thoroughly freed so that it could be brought well up into the wound. This was possible except in the lowest portion. It was wise to place a compression clamp upon the ureter some distance above the point at which it was to be opened in order to avoid contamination of the wound with probably infected urine. Contrary to most authorities it was, in his opinion, wiser to incise the ureter an inch or more above the stone. At this point the ureter was almost always dilated and an appropriate instrument could be passed into the ureter and the stone withdrawn backward with the aid of the fingers. The reason for preferring this incision was that at the seat of the stone there was at least some inflammation present and there was liable to be some narrowing of the ureter at that point and incision invited further narrowing. Exception must be made in cases where the ureter was so contracted that the stone could not be removed without breaking it into pieces. Having removed the stone, it was essential to demonstrate that the ureter below this point was free from obstruction. Most of the cases of persistent ureteral sinus were due to overlooked stricture. This demonstration should be made by the passage of a flexible bougi à boule down into the bladder. It was also wise to explore the ureter above, though usually nothing abnormal was found. Should a stricture be demonstrated it should be freely incised and the vertical incision sewed up transversely, so as to increase the calibre of the canal at this point. The closure of the wound in the ureter was an important part of the operation; it seemed unnecessary to allow any leakage to occur. For this purpose he employed double zero plain cat-gut as it did not seem necessary that apposition be maintained for any length of time. The abdominal wound should be provided with a minimum of drainage; he now employed a single small piece of so-called protective tissue and closed the wound snugly about this. This drain should not be removed for five or six days as leakage was apt to occur for several days after the operation. As to the choice of incisions, for stones in the ureter above the pelvic brim an oblique muscle splitting incision was generally satisfactory. The skin incision should be made over the course of the ureter parallel to the fibers of the external oblique and should be sufficiently free to give access to the deeper parts. The fibers of the internal oblique and transversalis could be separated nearly at right angles to the other wound, giving a sufficient field if the stone had been accurately located beforehand. The advantage of this incision over that which cross-cut muscle fibers was the rapidity of the healing, the strength of the scar, and the comfort of the patient. For stones below the pelvic brim a similar incision prolonged downward had frequently been used. To the speaker it did not seem nearly as satisfactory as the incision proposed some years ago by Charles Gibson, which consisted in an incision beginning at or across the median line just above the pubes following the curve of Poupart's ligament outward and turning sharply upward just inside the anterior superior spine. This incision cross-cut no muscle fibers except at its extreme upper end and this was not always necessary. Gibson advised that this flap be dissected freely upward and that the first incision be then met by another following the outer border of the rectus muscles where the various layers of the fascia split to form the sheath. This gave a triangular flap and an excellent exposure. Dr. Cabot said he had gotten an equally good exposure by cross-cutting the fibers of the rectus muscle on the side involved about an inch above their insertion into the pubic bone, thereby giving ample tissue in which to place sutures to reunite the ends. If the patient was placed in the Trendelenberg position the intestines fell away and gave a thoroughly satisfactory exposure of the ureter from the iliac vessels to the bladder wall. For stones situated in the lower inch or two of the ureter this operation was least suited and it seemed as though it should be possible to deal with them by some intravesical method. On the other hand, the calculi which lodged just outside the bladder wall at the beginning of the oblique portion usually lay in a little pocket not directly in line with the ureter. Any method of intravesical incision of the ureter which was to reach these stones must incise the whole ureter and the whole thickness of the bladder wall in order to be effective. This seemed to him unnecessarily mutilating and he had recently removed a stone situated just outside the bladder wall by a technique which seemed worth further trial. The bladder was opened in the middle line above the pubes and a metal instrument passed into the ureteral orifice was arrested at about an inch, though the stone could not be felt. The peritoneum was then stripped from the lateral wall of the bladder and the lower three inches of the ureter identified and freed. The ureter was then opened about three inches above the bladder and by passing the instruments in both directions the stone was dislodged from its pocket and pushed into the bladder. The opening into the ureter and the wound in the bladder were both closed and no leakage had taken place. This approach seemed less difficult than that in which the bladder was not opened as the stone was under better control and the incision in the ureter could be made at a considerably higher point.

**Renal Lithiasis.**—Dr. J. BENTLEY SQUIER, JR., read this paper. After reviewing the various theories regarding the causation of renal calculi he said that from a treatment viewpoint renal calculi might be regarded as aseptic or

septic according to the presence of bacterial inflammation in the kidney. The aseptic stage began with the irritation of the kidney, due to the passage of urine loaded with uric acid or calcium oxalate crystals, continued with the deposit of these crystals in calculus formation and the production of catarrhal or interstitial changes in the kidney, and merged into the septic stage when hematogenous infection occurred. These changes might be insidious and years might elapse before the gamut was run, but the rule was a progressive destruction of the kidney through interstitial changes or by suppuration. Mere minor symptoms should attract attention to the kidneys as the seat of disease. Dr. L. G. Cole, from his vast experience in radiography, stated that most of the cases in which renal calculi had been demonstrated by the *x*-ray had had no symptoms that were sufficiently characteristic to justify an operation and only those that engaged in the ureter or obstructed the pelvis caused typical renal colic. The time was at hand when slight pain in the back, tenderness over the kidney, a sense of weight in the back which was increased by jolting, or the presence of even a trace of albumen, should call for a complete routine examination of the urinary tract. Dr. Squier then related the history of a number of cases which served to illustrate the various symptoms presented by patients suffering from renal calculi. In considering the surgery of nephrolithiasis, the classification of the disease into an aseptic and a septic stage was convenient. The surgery of the aseptic stage comprised the removal of the calculus or calculi with or without drainage of the organ. The surgery of the septic stage required the removal of the calculus, or calculi, with drainage, and, frequently, excision of the diseased kidney. The surgery of the aseptic stage was completed in one stage and might necessitate a primary operation for drainage of renal or perirenal pus collections, with secondary operation for removal of the kidneys. The vertical incision should be made for the aseptic stage. The kidney having been delivered on the loin, it was turned with its convex border pointing outward. The posterior surface was thus exposed. It was preferable to remove calculi through a posterior incision for two reasons: one because there was less hemorrhage, the other because if drainage was necessary its course was straight. With the kidney on the loin, if the calculus could be removed through an incision in the pelvis, it should be so removed. They had learned the advantage of pyelectomy only in the past few years, the fear of a permanent fistula resulting from such an incision having been proven to be groundless. The incision should be made at right angles to the kidney and along the lower border of the pelvis; it should not extend into the ureter. If the calculus was felt before the kidney was opened, it was well to steady it at the lower border of the pelvis and to open the pelvis as indicated, by cutting down upon the stone. If the calculus was small, or multiple, or situated in the calices, the pelvis might be searched with the finger. The incision in the pelvis was closed with fine cat-gut sutures, and the wound was closed with or without drainage as the case might indicate. In the treatment of the septic stage a more complex problem confronted them. The degree of sepsis must influence their operative decision. A mild pyelitis would require removal of the stone with drainage of the pelvis. Extensive suppuration with destruction of kidney tissue would indicate nephrectomy.

**A Portable X-Ray Apparatus.**—Dr. J. Bentley Squier presented this instrument, which consisted of a Tesla coil, a Crookes tube, and a flouroscopic screen of his own design. This apparatus was for use in the operating room and would settle definitely whether or not calculi were present. It was used with the kidney lying on the loin.

**Vesical Calculus.**—Dr. Edward L. Keyes, Jr., read this paper. He stated that the brief survey of the symptoms, diagnosis, and treatment of this condition which he proposed to give was based on personal experience and not on text-book rules. The symptoms began with the history which might or might not include attacks of renal colic, as the stone slipped from the kidney into the bladder. In his experience a minority of bladder stone cases gave such a history. If the patient's history began with such a colic, a greater or less interval of time intervened, during which the stone remained silent in the patient's bladder. This interval might extend to a number of months or even years. When the stone began to irritate the bladder and to cause frequent and painful micturition, or even cystitis, the course of the disease became characteristically remittent. The frequent and painful urination was characteristically more severe by day than by night; more severe when the patient went about than when he sat still. This rule, however, was broken by innumerable exceptions. Analysis of the urine of a patient suffering from stone in the bladder was likely to reveal a few blood cells, though the presence of microscopical blood was not constant. On the other hand occasional slight hemorrhage of prostatic origin, occurring at the termination of urination, and accompanied by a good deal of pain, might be due to stone, but was more suggestive of tuberculosis. Pus might or might not be found in the urine. The symptoms of stone in the bladder, like those of stone in the ureter or kidney pelvis, were often simulated by other maladies. The typical picture of stone in the bladder might be precisely mimicked by renal, or reno-vesical, or prostatic tuberculosis, so that for diagnostic purposes the clinical picture of stone was worth almost nothing at all. Furthermore, some patients could carry a stone in the bladder for years without symptoms. The one symptom upon which some dependence could be placed was "stinking urine" without grave kidney lesion and without retention of urine in the bladder. This stinking urine, without renal or vesical retention, was but rarely seen. A purulent urine that became absolutely clear and free from pus under treatment suggested that no stone was present. Among the definite surgical measures for ascertaining the presence of a calculus in the urinary tract the radiograph stood first and when vesical calculus was suspected one should always have a radiograph taken. The radiograph is singularly negative in the detection of vesical calculi. This meant that certain of these calculi were singularly bereft of lime salts in their construction. An older diagnostic implement was the stone searcher. This in the hands of the expert manipulator was a delicate diagnostic instrument that might do service in persuading irritable patients that they had stones by the briefest manipulation. The cystoscope, like the *x*-ray, was the essential instrument for the diagnosis of vesical calculus. Even the cystoscope was by no means infallible in the diagnosis of stone. Apart from the fact that the examination might fail to reveal a stone in a saccule, it was liable to two grave misinterpretations. An old clot looked exactly like an acid stone, while a stone covered with fibrin often looked exactly like a sloughy malignant tumor. A knowledge of these possible errors and a little experience with the ureteral catheter almost invariably sufficed for a diagnosis. In speaking of treatment, Dr. Keyes said that small vesical calculi, like small ureteral calculi, might pass spontaneously, yet there was not the same incentive to wait for such passage, since vesical calculi might be crushed in a few moments. If the patient was not oversensitive this operation might be performed in the physician's office under local anesthesia. On the other hand, large stones or stones complicated by bladder tumor, or sacculation, or by prostatic hypertrophy, obviously required suprapubic cystotomy for their removal, for the management of complications, and for drainage. There were many stones of moderate size where the question as to the choice of operation arose. Should they perform litholapaxy, or lithotomy? The older generation succeeded very well with the former operation. Dr. Keyes said that his father had performed over two hundred litholapaxies and never lost a patient under sixty years of age. Stones in the bladder were relatively infrequent in this part of the world, while ambitious general surgeons were very numerous, hence these patients were distributed in small numbers to a very large number of operators who had little interest in the various delicate features which these patients presented. Such men did not perform litholapaxy and it was better that they should not. For uncomplicated stones the specialist would continue to prefer litholapaxy to lithotomy on account of the lesser mortality and the greater rapidity of convalescence. The performance of repeated litholapaxies on old prostatics was by no means an ideal procedure, though one occasionally met patients who insisted on this form of treatment. It was to be hoped that the dispute between litholapaxy and lithotomy would continue to be vigorous and interminable; it was also to be hoped that the rival camps would occasionally call a truce and urge subscription to one thesis for the edification of the young: "When in doubt, cut."

**Urethral and Periurethral Lithiasis.**—Dr. Victor Cox Pedersen read this paper. He discussed the pathogenesis and the sites of impaction of urethral calculi, showing that the prostate was the commonest source of such periurethral stones and that abscesses draining into the urethra, just as those draining into the kidneys, ureters, and bladder, originated most endourethral calculi. Urethral lithiasis affected child and adult alike. In children these stones were usually migratory, impacted, endourethral manifestations. In small children practically all urethral concretions were of intrauterine renal origin, migrating

outward and impacted at one of the normal anatomical constrictions. In adults the cases fell into two groups: first, patients who gave little history until the urethral obstruction suddenly appeared and, second, patients who presented a logical and consecutive story of varying degrees and forms of renal disorder, pain, pus, blood, ureteral colic of migration of the stone into the bladder, vesical irritation of its presence in the bladder, and finally the urethral obstruction, absolute or relative. Slight or partial obstruction might give few symptoms. After describing the physical and instrumental examination of the patient for urethral lithiasis, Dr. Pedersen reviewed a series of cases that he had collected in literature which were interesting and illustrated the condition in both children and adults. He also cited a number of cases of endourethral lithiasis of the prostatic urethra. True prostatic concretions were multiple. They were frequently not suspected until met during prostatectomy, having determined few antecedent symptoms, or they might be associated with chronic prostatitis. The radiograph seemed to reveal two types; one diffuse and of hemp seed size, common in old age; the other showed stones crowded together on both sides of the median line and appeared at any period of life. The symptoms of true prostatic lithiasis might be insignificant and pass unnoticed during life. Large, solitary, or multiple calculi, with prostatitis, might provoke such symptoms as difficult, painful, and frequent urination, pain in the perineum, prostate, and rectum, radiating down the penis and thigh, obstipation and painful defecation, and purulent urethral discharge. Rupture of the stone into the prostatic urethra showed itself as an acute posterior urethritis or as an acute retention, through the size of the stone or the swelling of the mucosa. The diagnosis of true prostatic calculi might be made easily by palpation through the rectum if the stone was large and the prostate atrophic, or if the gland was nodular through multiple calculi which might also add crepitus. The diagnosis might be extremely difficult if the stones were small, centrally located, and individually encysted. The sound would detect any stone that projected into the urethra and should never be omitted. The acoustic explorer, the urethroscope, and the cystoscope were very important and radiography was also of use where other methods failed. The second class of periurethral lithiasis of the posterior urethra concerned deposits in deformities, either anatomical deformities or those due to operative procedures. The treatment of urethral and periurethral lithiasis was preventive and curative. Preventive measures implied the management of errors in general and urinary metabolism characterized by intestinal autointoxication which almost invariably invited colon bacilluria. Prevention also regarded careful after treatment in any urogenital surgical condition so that foci and pockets of precipitation might be properly dealt with. Curative treatment acknowledged two classes of cases—those of emergency and those of election type. Emergency cases were characterized by acute, severe symptoms of obstruction, anuria, and infection during a few days or even hours. Urethral lithiasis was a condition on which the extremes of life tolerated badly and with a fatal issue as an all too common outcome. A large class of cases were of the election type, and the treatment of such cases rested on the presence or absence of complications. If the stone was mobile, recently impacted, and without total obstruction to the urine, most authorities would agree that an effort should be made to pass it forward out of the anterior urethra or backward into the bladder out of the posterior urethra by instrumental or digital manipulation. The disintegration of stones might be rather easily accomplished with the fulgurating wire through the cystoscope in the bladder or through the open end urethroscope in the urethra. The complicated cases which almost always had infection as the primary cause of the complications required open operation, removal of the stones, and drainage of the infected field, which necessarily embraced the anterior urethra, the posterior urethra, and often the bladder secondarily.

Dr. Eugene Fuller said that he did not feel that he could criticize adversely any of the papers read; they were all valuable contributions to the subject. In connection with Dr. Cabot's paper he thought that more emphasis might be laid upon the fact that one could not depend upon the *x*-ray alone in making a diagnosis of lithiasis in the urogenital tract; one should supplement ureteral exploration with the *x*-ray. One should not cut too soon without first trying to dislodge the stone by urethral manipulation. It was remarkable how often these stones could be dislodged by manipulation. In those cases in which the stone could not be dislodged by manipulation cutting should be resorted to promptly. One should cut more promptly in non-infective cases with ureteral obstruction than in those cases in which the stone was in the kidney. In the latter condition where the stone was not producing any obstruction, the patient might be kept under observation, deferring the issue of an operation until the development of symptoms might make it indicated. In renal cases one could get the greatest range of symptoms. In one instance in which he had been asked to operate immediately upon a woman admitted to the City Hospital in a serious septic condition, with a large tumefaction in connection with the left kidney, suppression of urine and the kidney in an advanced state of suppuration, the woman had complained of no pain until four days before her admission to the hospital, although it was evident that the condition must have existed for years. Dr. Fuller agreed with Dr. Keyes that lithopaxy was the operation of choice where the operator was competent in the majority of cases of stone in the bladder; where stone formed secondarily to prostatic obstruction it was not the operation of choice.

Dr. Charles H. Chetwood said that the most important fact brought out by this symposium was that many cases did not bear the markings of the classical features, and that it was only by modern diagnostic methods and technical skill that these conditions could be recognized. Apropos of these cases of renal lithiasis Dr. Chetwood recalled an instance in which he operated upon a patient removing fourteen stones from the kidney, one having migrated through the cortex and tissues without producing any symptoms referable to the kidney in face of the fact that at the time the man had an infected kidney. The causation of stone in the kidney, classified as Dr. Squier had stated, was evident in the case of secondary calculi, but had not yet been fully explained in the case of primary stone. In the light of recent knowledge and experience that infarcts might appear from some distant focus of mysterious origin and deposit in the kidney, it seemed that they had in these minute lesions a possible explanation of latent bacteria, with or without infection, which might be the focus of a primary renal calculus. With regard to the stone in the ureter this was often a secondary and not a primary cause of the clinical picture. Dr. Chetwood showed interesting *x*-ray plates taken of a patient who presented the classical symptoms of ureteral stone, with colic, etc., and the diagnosis was promptly made. The *x*-ray showed the presence of a small stone in the lower end of the ureter, evidently not the cause of symptoms. Injecting the ureter with collargol a stricture was shown to be present (5 c.m.), which could be passed with the catheter, and another 20 c.m. through which the catheter could not be passed. After waiting a few days a second attempt to pass the bougie was successful, and, passing both strictures, it was possible to dilate the ureter. The kidney on this side had not been draining and there was a large hydronephrotic sac which then emptied itself. The patient made a satisfactory recovery from the acute condition. An important conclusion to be drawn was that the rôle of the operator was a secondary one in many instances. Operators were many; preoperative diagnosis was very necessary, assisted by the radiograph and the cystoscope, with a correct interpetation of all the findings; it was the man behind the cystoscope who did the work.

Dr. Martin W. Ware said that, in his opinion, the previous speakers had not made sufficient reference to the question of indications. Notwithstanding the fact that they might see these stones it was necessary that certain indications should be present which called for operative interference. Certain principles had been laid down by Israel which were worthy of repetition, and they were especially valuable when used in conjunction with the *x*-ray, the cystoscope, and other diagnostic methods. One had to operate when in the presence of vital indications. One should operate in the absence of vital indications when it seemed evident that damage to the kidney was forthcoming. Three indications should serve as a guide. When the stone was located by means of the *x*-ray it did not mean that the operator was necessarily impressed to operate. Israel had stated that the mortality of 4 per cent. was staring one in the face when he undertook a nephrotomy; statistics did not insure a man against his succumbing to the operation. Aside from the urgent indications there were those that were not so vital. Many patients with stone had persistent neuralgias, dyspepsias, attacks of colic, a loss of their general health—they might not have any vital indications present, but they had symptoms which prevented them from pursuing their calling and earning a livelihood.

Dr. Hugh H. Cabot of Boston, in closing the discussion, said it was difficult to define what was meant by vital indications; did vital indications show how much damage was done the kidney? He doubted whether they had the means

at their disposal of determining how much damage had been done the kidney. An obstruction in the ureter presupposed damage to the kidney. It did not seem to him wise to wait for vital indications. Dr. Cabot did not believe that they ever saw within recent years a mortality as high as four per cent; the mortality to-day was about one-half per cent.

# State Medical Licensing Boards.

## STATE MEDICAL EXAMINATION QUESTIONS.

### Arkansas State Medical Board.

*May 14 and 15, 1912.*

#### ANATOMY.

1. Name the bones of the face, describing the inferior maxillary.
2. Describe the shoulder-joint.
3. Describe the patella, giving muscular and tendinous attachments.
4. Give origin and insertion of trapezius muscle with nerve and blood-supply.
5. Name the parts severed in amputation of leg 4 inches below knee.
6. Give the anatomic divisions of the alimentary canal.
7. Give name and course of vein involved in varicose veins of leg.
8. Describe the circle of Willis.
9. Describe the rectum, giving nerve and blood-supply.
10. Give origin and distribution of pneumogastric nerve.

#### PHYSIOLOGY.

1. Describe a red blood-corpuscle and tell of its functions.
2. Describe a white blood-corpuscle and tell of its functions.
3. Describe the fetal circulation.
4. Describe the circulation through the heart and lungs.
5. Describe a cross-section of the spinal cord in the mid-dorsal region.
6. Describe the fifth cranial nerve.
7. Describe the large intestine and tell of its functions.
8. Name all the known functions of the liver.
9. Describe the kidneys and tell of their functions.
10. Describe the skin and tell of its functions.

#### CHEMISTRY.

1. Give names and symbols of elements in halogen group, stating why so called.
2. Name three alkaloids of opium most used in medicine, giving dose of each.
3. Give test for strychnine and treatment for an overdose.
4. How is potassium iodide made? Give formula.
5. Give chemical formula of lunar caustic, naming antidote.
6. Give chemical composition of urine, stating normal amount of urea excreted in twenty-four hours.
7. What are the enzymes? Give their functions.
8. What are proteins and from what are they developed?
9. What is pyroxilin and how produced?
10. Complete the following formula: $NaNO_3$ plus $H_2SO_4$=?

#### MATERIA MEDICA.

1. Define an aperient and give an example.
2. Define a vascular contractor and state uses.
3. Define a vascular dilator and state what drug you consider the most valuable as such.
4. Define a solvent and excipient and give an example of each.
5. What is meant by the physiological effect of a drug?
6. Name and give dose of the most powerful hydragogue cathartic.
7. Name the three most-used preparations of opium, and state how much of each represents 1 grain of opium.
8. Give primary and secondary effects of carbolic acid when locally applied.
9. What change takes place in morphine after having been kept for some time in solution?
10. Name the principal remedy used to promote the absorption of morbid products.

#### THERAPEUTICS.

1. Differentiate between materia medica and therapeutics.
2. Differentiate between empirical and rational therapeutics.
3. What is meant by suggestive therapeutics?
4. Name a remedy that is especially indicated in the stage of resolution of pneumonia.
5. Name objective and subjective symptoms of phenol poisoning.
6. How would you treat such a case?
7. Name an antidote for each of the following, and state whether this is physiological or chemical: arsenic, opium, copper, and strychnine.
8. What therapeutic agent liberates formaldehyde in the urine? State in what class of cases it is indicated.
9. In case of sudden collapse, name the quickest and most efficient remedy, and give its mode of administration.
10. Describe the technique in the administration of antimeningitis serum.

#### PATHOLOGY.

1. Define gangrene and name varieties.
2. Describe briefly the changes which take place in atrophy and those which occur in degeneration.
3. What are usual methods of metastatic extension of sarcoma and carcinoma?
4. What conditions are most commonly accompanied with increased blood-pressure and what are the results if this increased pressure is maintained for a considerable time?
5. State briefly the pathologic changes found in pellagra.
6. State briefly the changes that take place in the entire organism as a result of chronic nephritis.
7. What are the principal parts involved in acute anterior poliomyelitis?
8. What are the most common pathologic conditions found in scarlet fever?
9. Give the pathology of chronic gastritis.
10. Give pathology of scorbutus.

## ANSWERS.

#### ANATOMY.

1. *Bones of the face:* Two nasal, two superior maxillary, two lacrymal, two malar, two palate, two inferior turbinated, vomer, and inferior maxillary.

*Inferior maxilla* consists of a body and two rami. The body is horse-shoe shaped and contains the lower teeth; externally it presents the symphysis, mental process, mental foramen, incisive fossa, and external oblique line; internally it presents the four genial tubercles, sublingual fossa, internal oblique line, submaxillary fossa. The alveolar border has sixteen cavities for teeth. The ramus is quadrilateral, and presents the inferior dental foramen and a spine. Above it has the coronoid and condyloid processes, separated by the sigmoid notch. The *muscles attached* are: Levator menti, depressor labii inferioris, depressor anguli oris, platysma myoides, buccinator, masseter, orbicularis oris, geniohyoid, geniohyoglossus, mylohyoid, digastric, superior constrictor of pharynx, temporal, internal and external pterygoids.

2. The shoulder-joint "is an enarthrodial joint formed above by the glenoid cavity of the scapula and below by the head of the humerus. Its ligaments are—glenoid, coraco-humeral, and capsular. The *glenoid* surrounds the edge, deepens the glenoid cavity, and is continuous above with the long head of the biceps tendon. The *capsular ligament,* extensive and loose, arises above it from circumference of glenoid cavity behind the ligament, is attached below to the anatomical neck of humerus, and is pierced by tendons of two or three muscles. The *coraco-humeral,* or *accessory,* is a fibrous band which extends obliquely downward and outward from the coracoid process to the anterior part of great tuberosity, strengthening the capsular ligament."—(Young's *Anatomy.*)

3. The *patella* is a flat, triangular bone situated in front of the knee-joint; it is said to be a sesamoid bone developed in the tendon of the quadriceps extensor. Its anterior surface is convex and shows perforations for nutrient vessels; it is separated from the skin by a bursa. Its posterior surface is smooth and oval-shaped, and has two facets separated by a vertical ridge; these facets articulate with the two condyles of the femur. The superior border gives attachment to the rectus and crureus; the lateral borders give attachment to the vastus externus and vastus internus. The apex gives attachment to the ligamentum patellæ. The anterior surface is covered by the tendon of the quadriceps extensor, which is continuous below with the ligamentum patellæ.

4. Trapezius. *Origin:* External occipital protuberance, inner third of superior curved line of occipital bone, liga-

mentum nuchæ, spinous process of seventh cervical and all the dorsal vertebræ and corresponding portion of supraspinous ligament. *Insertion:* Outer third of posterior border of clavicle, inner margin of the acromion process, and posterior border of spine of scapula. *Nerve-supply:* Spinal accessory, and branches from the anterior divisions of the third and fourth cervical nerves. *Blood-supply:* Superficial cervical, posterior scapular, transversalis colli, and supra-acromial arteries.

5. The parts severed in the amputation of the leg, four inches below the knee, are: Skin, fascia; tibialis anticus, extensor communis digitorum, extensor proprius hallucis, peroneus longus, peroneus brevis, gastrocnemius, soleus, plantaris, flexor longus digitorum, flexor longus hallucis, and tibialis posticus muscles; long saphenous vein, short saphenous vein, anterior tibial artery and veins, posterior tibial artery and veins, and peroneal artery and veins; anterior tibial nerve, posterior tibial nerve, peroneal nerve, and short saphenous nerve or its branches; tibia and fibula and interosseous membrane.

6. *Anatomic divisions of alimentary canal:* Mouth, pharynx, esophagus, stomach, small intestine (duodenum, jejunum, and ileum), large intestine (cecum, ascending colon, hepatic flexure, transverse colon, splenic flexure, descending colon, sigmoid flexure, rectum).

7. The veins involved in varicose veins of the leg are the saphenous veins.

The SAPHENOUS VEINS are formed from the dorsal venous arch.

The *internal saphenous* begins at the inner end of this arch, on the inner side of the foot; it passes upward in front of the internal malleolus, then upward and backward with the internal saphenous nerve, behind the internal condyle of the femur, then upward and outward to the inner side of front of thigh, through the saphenous opening, to empty into the femoral vein.

The *external saphenous* begins at the outer end of the arch, on the outer side of the foot; it passes upward behind the external malleolus, up along the outer side of the tendo Achillis, with external saphenous nerve, to the popliteal space, where it enters the popliteal vein.

8. The *circle of Willis* is an arterial anastomosis situated at the base of the brain. It is formed: In front by the two anterior cerebral arteries (branches of the internal carotid), which are connected by the anterior communicating artery; behind, by the two posterior cerebrals (branches of the basilar artery), which are connected to the internal carotid on each side by the posterior communicating artery.

9. The *rectum* is the lowest part of the alimentary canal, and extends from the sigmoid flexure to the anus. It is about six inches in length, and is divided into three portions. The upper half only is invested with peritoneum. The upper third rests upon the sacral plexus and the pyriformis muscle; the middle third is in relation with the bladder, prostate, and seminal vesicles (in the female with uterus and vagina); the lower third is surrounded by the sphincters. It is not sacculated. *Nerve supply:* Sympathetic plexuses (inferior mesenteric and hypogastric), fibers from the second, third and fourth sacral nerves. *Blood supply:* Superior, middle, and inferior hemorrhoidal arteries and veins.

10. PNEUMOGASTRIC NERVE. *Superficial origin:* Groove between restiform and olivary bodies. *Deep origin:* Nuclei in floor of fourth ventricle. *Course:* Outward across the flocculus, to jugular foramen through which it passes; here it is joined by the accessory portion of the spinal accessory nerve. As it goes down the neck it lies in front of the rectus capitis anticus major and longus colli muscles. It passes in the carotid sheath behind and between the artery and vein. In the thorax the nerve on each side runs a different course. The *right* passes between the subclavian artery and vein, by side of trachea to root of lung, behind esophagus, through esophageal opening in diaphragm to posterior surface of stomach. The *left* passes between the subclavian and carotid arteries, in front of arch of aorta to root of lung, along anterior surface of esophagus, through diaphragm, to anterior surface of stomach. *Distribution* is shown by the names of the branches: Meningeal, auricular, pharyngeal, superior and inferior laryngeal, cardiac, pulmonary, esophageal, and gastric.

PHYSIOLOGY.

1. *The red blood-corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. They carry oxygen from the lungs to the tissues.

2. The *white blood-corpuscles* are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes; (2) large mononuclear; (3) transitional; (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

3. *Fetal circulation:* "The blood returning from the placenta, after having received oxygen and being freed from carbonic acid, is carried by the umbilical vein to the under surface of the liver; here a portion of it passes through the ductus venosus into the ascending vena cava, while the remainder flows through the liver and passes into the vena cava by the hepatic veins. When the blood is emptied into the right auricle, it is directed by the Eustachian valve through the foramen ovale, into the left auricle, thence into the left ventricle, and so into the aorta and to all parts of the system. The venous blood returning from the head and upper extremities is emptied, by the superior vena cava, into the right auricle, from which it passes into the right ventricle, and thence into the pulmonary artery. Owing to the condition of the lung only a small portion flows through the pulmonary capillaries, the greater part passing through the ductus arteriosus, which opens into the aorta at a point below the origin of the carotid and subclavian arteries. The mixed blood now passes down the aorta to supply the lower extremities, but a portion of it is directed, by the hypogastric arteries, to the placenta, to be again oxygenated." (Brubaker.)

4. "The right auricle receives the venous blood as it returns from the tissues, and transmits it to the right ventricle. The function of the right ventricle is to pump the venous blood through the pulmonary arteries into the lung capillaries, where the venous blood becomes oxygenated. The oxygenated blood returns by the pulmonary veins to the left auricle and the arterial blood is then received into the left ventricle. The left ventricle pumps the arterial blood through the large arteries, the small arteries, and the arterioles into the systemic capillaries. The venous blood returns from the capillaries through the small veins into the larger veins, and the largest veins pour the blood back into the right auricle."

5. A cross section of the spinal cord in the mid-dorsal region shows that the cord is not quite circular in outline, but that the transverse diameter is greater than the anteroposterior diameter. The anterior median fissure is shallow, and the posterior median fissure is deep, extending beyond the center of the cord. The amount of gray matter is comparatively small, and both cornua are slender. The white matter is less than in the cervical region, but is still great in comparison with the gray matter. The central canal is not centrally placed, but is very much nearer to the anterior surface of the cord than to the posterior surface.

6. FIFTH PAIR OF CRANIAL NERVES. *Origin: Superficial,* from side of pons varolii; *deep,* from medulla, and floor of fourth ventricle. There are four ganglia in connection with this nerve; (1) The ophthalmic or lacrymal; (2) the sphenopalatine or Meckel's; (3) the otic; and (4) the submaxillary ganglion. *Distribution and Functions:* First, ophthalmic; sensory to anterior half of scalp, conjunctiva, and skin of upper eyelid, cornea, skin of nose, mucous membrane of nose, lacrymal gland. *Second,* superior maxillary; sensory to conjunctiva and skin of lower eyelid, nose, cheek, upper lip, palate, upper teeth, and alveolar processes. *Third,* inferior maxillary; sensory to external auditory meatus, side of head, mucous membrane of mouth, anterior two-thirds of tongue, lower lip, teeth, and alveolar processes of lower jaw. It is also motor to the muscles of mastication (temporal, masseter, two pterygoids), mylohyoid, and anterior belly of the digastric.

7. The *large intestine* consists of: Cecum or caput coli; ascending, transverse, and descending colon, with hepatic and splenic flexures; and rectum. Its structure resembles

that of the small intestine, but there are some differences. The transverse colon has a peritoneal covering, the other parts are only incompletely invested with peritoneum. The muscular coat shows its longitudinal fibers as three bands, which produce sacculations; to the large intestine are attached appendices epiploicæ. The mucous membrane has no villi, and is lined with columnar epithelium. The *chief function* of the large intestine is absorption, especially of water; it also hydrolyzes and digests and absorbs proteids under certain conditions.

8. The *functions of the liver* are: (1) the secretion of bile; (2) the formation and storage of glycogen; (3) the formation of urea and uric acid; (4) the manufacture of heat; (5) the formation of creatinin; (6) the production of antithrombin; (7) the conversion of poisonous and harmful into inert material; (8) it is also a reservoir for blood on its way to the heart.

9. "The kidney is a compound, tubular gland composed of microscopic tubules whose function it is to secrete from the blood those waste products which collectively constitute the urine. If the apex of each pyramid be examined with a lens, it will present a number of small orifices, which are the beginning of the uriniferous tubules. From this point the tubules pass outward in a straight but somewhat divergent manner toward the cortex, giving off at acute angles a number of branches. From the apex to the base of the pyramids they are known as the tubules of Bellini. In the cortical portion of the kidney each tubule becomes enlarged and twisted, and after pursuing an extremely convoluted course, turns backward into the medullary portion for some distance, forming the descending limb of Henle's loop; it then turns upon itself, forming the ascending limb of the loop, reenters the cortex, again expands, and finally terminates in a spheric enlargement known as *Müller's* or *Bowman's capsule*. Within this capsule is contained a small tuft of blood-vessels, constituting the *glomerulus*, or *Malpighian corpuscle*. Each tubule consists of a basement membrane lined by epithelium cells throughout its entire extent. The tubule and its contained epithelium vary in shape and size in different parts of its course. The termination of the convoluted tube consists of a little sac or capsule, which is ovoid in shape and measures about 1/200 of an inch. This capsule is lined by a layer of flattened epithelial cells, which is also reflected over the surface of the glomerulus. During the periods of secretory activity the blood-vessels of the glomerulus become filled with blood, so that the cavity of the sac is almost obliterated; after secretory activity the blood-vessels contract and the sac-cavity becomes enlarged. In that portion of the tubule lying between the capsule and Henle's loop the epithelial cells are cuboid in shape; in Henle's loop they are flattened, while in the remainder of the tubule they are cuboid and columnar." (Brubaker's *Physiology*.)

10. The skin is composed of a deep portion, the corium, derma, or true skin; and of a superficial portion, the epidermis or cuticle.

The *corium* makes up by far the greater part of the skin, and within it are the perspiratory glands, the sebaceous glands, the hairs, together with both blood and lymphatic vessels. The upper surface, where it joins the epidermis, is irregular, being composed of elevations—papillæ—and intervening depressions. In some of these papillæ are the tactile corpuscles, in which nerve-fibers end.

The *epidermis* is made up of a deep and a superficial layer. The deep layer (rete mucosum or rete Malpighii) covers the papillæ of the corium and fills the depressions between them. It is composed of cells, round or of different shapes due to pressure of continguous cells, the material of which they are composed yielding readily. It is in this layer that the pigment is deposited which characterizes the dark races. The superficial layer of the epidermis is composed of cells which are flat and dry or horny. (Raymond's *Physiology*.)

The *functions of the skin* are: Protection, excretion, secretion, regulation of the body temperature, absorption, sensation, special sense of touch, respiration.

### CHEMISTRY.

1. The *halogens* are: Fluorine: F., 19. Chlorine: Cl., 35.5. Bromine: Br., 80. Iodine: I., 127. They are called halogens because they combine with metals to produce salts, like sea-salt; the word halogen is derived from two Greek words denoting "sea-salt," and "to produce."

2. Morphine, dose 1/5 grain; codeine, dose ½ grain; and thebaine.

3. *Test for strychnine:* Inject a small quantity into a lymph pouch of a frog; violent tetanic spasms and opisthotonos will result.

*Treatment of overdose of strychnine:* Give the patient chloroform, by inhalation; or chloral hydrate. Wash out the stomach with solution of potassium permanganate.

4. Potassium iodide is made by saturating a solution of potassium hydroxide with iodine:

$$6KHO + 3I_2 = KIO_3 + 3H_2O + 5KI.$$

The formula of potassium iodide is KI.

5. Chemical formula of lunar caustic is $AgNO_3$. The antidote is sodium chloride.

6. Urine is composed of: Water; urea, uric acid, hippuric acid, xanthin, hypoxanthin, creatin, creatinin; sulphates, phosphates, and chlorides (of sodium, potassium, etc.); and pigments. The average daily amount of urea excreted is about 500 grains.

7. *Enzymes* are more or less hypothetical substances, produced by living cells, and having certain characteristic actions. Thus, they are capable of causing change in a large amount of material on which they exert their characteristic action, but they themselves remain unaltered. Most of them are destroyed by prolonged contact with alcohol. Each requires a certain reaction and a certain temperature in order to do its best work. Most of them are destroyed by a high temperature. Their *function* is various: Some hydrolyze starch; some saponify fats; some decompose proteids; some split up glucosides; some cause oxidation; some produce coagulation.

8. *Proteins* are substances of very complex composition and of unknown constitution; they constitute the greater part of animal and vegetable tissues. They all contain carbon, hydrogen, oxygen and nitrogen; some also contain sulphur, phosphorus, iron, or some other element. They are developed mainly from plants.

9. *Pyroxylin* is hexanitrocellulose; it is also called guncotton. It is obtained by dipping cotton in a cold mixture of one part of nitric acid and two parts of sulphuric acid, then washing and drying it.

10. $NaNO_3 + H_2SO_4 = NaHSO_4 + HNO_3$.

### MATERIA MEDICA.

1. An *aperient* is a mild purgative which produces moderate peristalsis and causes no irritation. *Example:* Sulphur.

2. *Vascular contractors* are agents which increase the contractile power of the blood-vessels, raise the blood-pressure, and diminish the flow of blood. They are used to stop hemorrhage and to alleviate inflammatory processes.

3. *Vascular dilators* are agents which produce dilatation of the peripheral blood vessels; they increase the rapidity of the circulation, relieve internal congestion, and tend to equalize the blood-pressure. The most useful are alcohol and ether.

4. A *solvent* is an agent capable of dissolving substances; as water, alcohol.

An *excipient* is a substance used as a vehicle for the administration of other drugs; as: acacia, tragacanth.

5. By the *physiological effect of a drug* is meant the influence which the drug exerts upon the various bodily organs or tissues in health.

6. The most powerful hydragogue cathartic is elaterin; dose, gr. 1/10.

7. Tincture of opium; ten minims equal one grain of opium. Camphorated tincture of opium; half an ounce contains about one grain of opium. Powder of ipecac and opium; ten grains contain one grain of opium.

8. "Applied to the skin in weak or moderately strong solutions, carbolic acid produces local anesthesia with a sensation of numbness, which lasts for several hours. Applied in concentrated form it is irritant and superficially escharotic, with burning pain of brief duration, and produces at the point of application a white spot, changing to red if the acid is soon removed. It does not vesicate, but if the application be prolonged a white eschar or slough results from coagulation of the albumin of the tissue, and this is bordered by a red zone of inflammation. Even a three per cent. aqueous solution, kept on a part for several days, has produced dry gangrene of the tissues." (Potter's *Materia Medica*, etc.)

9. If morphine is kept in solution for a long time, it may change into apomorphine.

10. Potassium iodide.

### THERAPEUTICS.

1. *Materia medica* is that branch of science which treats of medicinal remedies, their origin, composition, properties, action, etc. *Therapeutics* relates to the treatment of disease. It includes materia medica, surgery, diet, climate, nursing, electricity, and many other agencies.

2. *Empirical therapeutics* denotes the use of therapeutic agents for the sole reason that they have been found efficacious in previous similar cases.

*Rational therapeutics* denotes the use of therapeutic

agents founded on a knowledge of the pathological condition present in the patient, and the physiological action of the agent employed.

3. *Suggestive therapeutics* is the treatment of disease by means of suggestion.

4. Strychnine, or ammonium chloride, or atropine.

5 and 6. *Symptoms of carbolic acid poisoning:* Buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark.

*Treatment:* Emetics, white of egg, sodium sulphate, stimulants. Alcohol is said to be antidotal.

7. Antidote for *arsenic,* freshly prepared solution of ferric hydroxide (chemical); for *opium,* tannic acid (chemical); for *copper,* potassium ferrocyanide (chemical); for *strychnine,* tannic acid (chemical).

8. Formaldehyde is liberated in the urine by hexamethylenamine. This is indicated as a urinary and intestinal disinfectant. It is used in cystitis, pyelitis, phosphaturia, and in typhoid fever.

9. Atropine sulphate, by hypodermic injection.

10. Lumbar puncture is made between the fourth and fifth lumbar vertebræ, the needle is left in place, and cerebrospinal fluid is allowed to escape (as much as will run freely). In case the lumbar puncture is made for diagnostic purposes only, about 5 c.c. should be withdrawn. A sterile syringe is filled with about 30 c.c. of the antimeningitis serum, is attached to the needle, and the injection is given. See SURGERY, question 4.

PATHOLOGY.

1. *Gangrene* is death of tissue *en masse. Varieties:* Dry, moist, direct, indirect, infective, metastatic.

2. "*Atrophy* may be simple or numerical. In the former kind, to which the term true atrophy might also be applied, the individual cells decrease in size without manifest disease; in the latter the cells are reduced in number, and are usually first altered by some form of degenerative disease, so that the process is not, strictly speaking, true atrophy. The parenchyma of organs suffers first and most characteristically, the connective tissues remaining unaffected or even undergoing hyperplasia. In true atrophy the cells may present no definite alteration, excepting perhaps slightly increased pigmentation. In some of the conditions generally described as atrophy the cells show degenerations of various forms such as cloudy swelling, coagulation-necrosis, fatty degeneration with vacuolization, and other gross alterations of structure. Secondary degenerative changes may occur in the connective tissues after the parenchyma-cells have become atrophic. Thus, after the physiological atrophy of the thymus-gland has occurred the connective tissues of the gland and of the surrounding parts become converted into fatty tissue. In other cases myxomatous change may be observed. Organs which have undergone atrophy are often quite irregular on the surface from unequal involvement of the different constituents. The consistency may be little changed or may be greatly reduced, particularly when some form of cellular degeneration is present. On the other hand, the organ may be hard and tough from secondary hyperplasia of the connective tissue. The capsule is generally wrinkled from the shrinkage of its contents, and secondary thickening is not unusual, especially in the heart and spleen. The color of the organ, like that of the individual cells, often becomes darker than normal and may be decidedly changed in brown atrophy. In cases of pressure-atrophy various distortions of the affected organ may be observed." (Stengel's *Pathology.*)

*Degeneration:* "Several abnormal substances may appear in the tissues as results of their degeneration, and, according as these substances are believed to be derived from the cell-protoplasm itself or to be merely deposits from the blood, the degenerative processes are divided into two groups: the metamorphoses or degenerations proper and the infiltrations. They differ essentially. In the metamorphoses the cell-protoplasm is gradually transformed into a new material. This process is often continued until complete destruction of the histological elements has taken place and all trace of the original structure is lost. In the earlier stages of the process function is impaired, in the latter it may be completely arrested. In the infiltrations the new material is not derived from the cell-protoplasm, but is deposited from the blood; there is an infiltration of a new substance. This is rarely followed by destruction of any of the histological elements; hence the structure of the tissue is much less altered than in the metamorphoses, and function is usually much less interfered with." (Green's *Pathology.*)

3. Metastatic extension of *sarcoma* is usually by the blood-vessels; of *carcinoma,* usually by the lymphatics.

4. Increased blood pressure is usually found in: Arteriosclerosis, chronic interstitial nephritis, eclampsia, uremia. The result may be cerebral hemorrhage.

5. The *pathological changes in pellagra* are neither definite nor constant. Atrophy of muscles, heart, liver, and pancreas has been found; the intestines may be ulcerated or contain parasites. The nervous system may show no changes, or there may be degenerative or sclerotic areas in the spinal cord; degeneration or round cell infiltration of some of the nerves may be present.

6. *Chronic nephritis* produces or is accompanied by: Cardiac hypertrophy, arteriosclerosis, enteritis, edema, uremia, and sometimes endocarditis, pericarditis, or pleurisy.

7. The principal parts involved in acute anterior poliomyelitis are: The ganglion cells in the anterior horns of the spinal cord, the neuraxons passing from these cells through the anterior roots, and the muscles over which these nerves have a trophic influence.

8. *Scarlet fever.* "Except in the hemorrhagic form, the skin after death shows no traces of the rash. There are no specific lesions. Those which occur in the internal organs are due partly to the fever and partly to infection with pus-organisms. The anatomical changes in the throat are those of simple inflammation, follicular tonsillitis, and, in extreme grades, of diphtheroid angina. In severe cases there is intense lymphadenitis and much inflammatory edema of the tissues of the neck, which may go on to suppuration, or even to gangrene. Streptococci are found abundantly in the glands and in the foci of suppuration. The lymph glands and the lymphoid tissue may show hyperplasia, and the spleen, liver, and other organs may be the seat of widespread focal necroses. Endocarditis and pericarditis are not frequent. Myocardial changes are less common. Nephritis is an important complication." (From Osler's *Practice.*)

9. *Chronic gastritis.* "The appearance of the mucous membrane varies greatly. In the milder cases the surface is more or less irregular and granular, and is covered with mucous exudate. The color may be grayish, but in cases in which passive congestion has preceded the development of gastritis it is often slate-colored from pigmentation. Microscopically there may be found mucous degeneration of the cylindrical epithelium of the tubules, and desquamation and not rarely proliferation of the secretory epithelium in the fundus of the glands. The glands may be considerably dilated and filled with mucous exudate and desquamated cells. The interglandular tissues are infiltrated, and may be thickened by the formation of new connective tissue; the same process may involve the sub-mucous coat. The blood-vessels of the latter are often greatly dilated and their walls may be thickened. In the later stages the glands may undergo progressive atrophy, the epithelium disappearing almost entirely and the lumen of the gland becoming less and less distinct. Coincidently with these changes, and to some extent causing them, there is fibrous overgrowth of the interglandular tissues." (Stengel's *Pathology.*)

10. *Scorbutus.* "The blood is dark and fluid, and its composition deranged with diminution in the potassium salts. Anemia is present, but there is no increase in the white blood cells. The structure of the blood-vessels is altered, allowing spontaneous hemorrhages into the skin, muscles, joints, and internal organs and from the mucous membranes. There is swelling and ulceration of the gums often resulting in loss of the teeth. Ulcers of the ileum and colon may be encountered. The spleen is enlarged and soft, and the viscera are affected with parenchymatous changes." (Hughes' *Practice of Medicine.*)

(*To be continued*)

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**Human and Bovine Bacilli in Bone Tuberculosis in Children.**—J. Fraser states that the all-important point revealed by his investigation is the fact that a large proportion of bone and joint tuberculosis occurring in children in Edinburgh owes its origin to infection by the bovine bacillus. The bovine bacillus is introduced into the system practically by one route only, that of ingestion, and the medium with which it is ingested is cow's milk. In those case in which the human bacillus was present, a considerable proportion showed a definite history of pulmonary tuberculosis affecting a co-resident, and every fact went to prove that the infection had been a direct one from patient to child. A complete distinction can be drawn between human and bovine bacilli, and the distinction is best secured by subjecting the organism to a series of tests as detailed by the author. The subject is one which ought to be investigated in a series of different localities. It is possible that the *locus* may be a factor in the explanation of the difference between the above results and those of other observers.—*Journal of Experimental Medicine.*

# Medicolegal Notes.

**Promise to Pay for Medical Services Furnished to Another.**—In an action for professional services for curing another under a verbal agreement with the defendant to pay therefor, and on his credit the defendant denied that he made such an agreement, but admitted that he did on behalf of his father, with the knowledge of the plaintiff that he was acting for his father, engage the plaintiff to attend his brother who was sick of smallpox, and he also admitted that he himself agreed with the plaintiff to pay him for two visits to his brother at $10 a visit and that he did pay for those two visits. It was held that the question whether the services were rendered under the agreement alleged was for the jury, and if they found in the affirmative the defendant would be liable to the plaintiff to pay therefor, notwithstanding any subsequent promise of any other person to pay the plaintiff for such services, which promise would not alone be sufficient to affect the right of the plaintiff to proceed against the defendant upon such special promise.—Knowles v. Massey, Delaware Superior Court, 81 Att., 470.

**Speculative Opinion Insufficient Evidence.**—In an action on an accident insurance policy it appeared that the deceased was a locomotive fireman, whose left foot had been injured. Ten days later he returned to work and attempted to fire an engine. He became sick during the run and died a few hours after in the hospital. He had told the nurse he had been drinking ice-water, and had been taken suddenly with cramps and vomiting, but made no reference to his previous injuries. The physician who attended him at the hospital testified that he died of heat exhaustion. The evidence at the third trial of the case was held insufficient to support a verdict for the plaintiff. On the fourth trial new evidence of a medical expert was introduced. This witness had never seen the assured. He was asked a hypothetical question which did not include all the facts as to the assured's symptoms, etc., disclosed by the record. On the fourth appeal it was held that the witness' testimony amounted to no more than the expression of an opinion, in answer to a hypothetical question, not submitting all of the facts, that the assured's death could have resulted from the injuries to his foot, and that the drinking of cold water might have had something to do with it. The opinion was mere speculation and conjecture and insufficient to sustain a verdict for the plaintiff.—Ward v. Ætna Life Ins. Co., Nebraska Supreme Court, 135 N. W., 220.

**Township's Liability for Medical Services.**—Action was brought against a township to recover for professional services in performing a surgical operation upon, and the treatment of, a resident of the township, who had been severely injured by a gunshot, the bone of the right arm being shattered, and the arm near the shoulder being almost completely severed. The evidence showed that the plaintiff treated the patient and met the township supervisor as to payment for the services. The testimony conflicted as to whether the supervisor authorized the plaintiff to treat the case at the expense of the township. Judgment for the defendant was reversed because the trial court erroneously submitted to the jury the question of whether the patient's relatives were in fact poor persons within the meaning of the statute, and authorized them to pass upon that fact. It was held that the supervisor, and not the jury, was charged with the duty of determining whether a poor person was entitled to relief at the expense of the township, and his determination was an official act, which was conclusive on the township in the action.—Belknap v. Township of Benton, Michigan Supreme Court, 135 N. W., 101.

**Limitation of Action for Unskillful Treatment.**—In an action for damages where it is alleged that the defendant, a physician, "undertook the treatment of" the plaintiff, and that "it was the duty of the defendant as physician to properly and skilfully treat the plaintiff, but the defendant did so carelessly, negligently, and unskilfully treat the plaintiff that he was thereby injured," the cause of action is upon an "obligation or liability not founded upon an instrument of writing," and is barred in three years, under subdivision 7, of section 1725 of the Florida General Statutes of 1906.—Palmer v. Jackson, Florida Supreme Court, 57 So., 240.

**Competency as Expert Witness.**—Where a physician has been admitted to testify, and has testified as an expert without objection, a question of his competency as an expert cannot thereafter be raised by a general objection to a particular question.—Patton v. W. M. Ritter Lumber Co., North Carolina Supreme Court, 73 S. E., 167.

CLINICS, DEPARTMENT OF PUBLIC CHARITIES

Calendar February, 1913

MONDAYS

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|---|---|---|---|
| *City Hospital* | Surgery | Dr. Dawbarn | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. McPhee | 2:00 P.M. |
| *Cumberland Street Hospital* (Brooklyn) | Surgery | Dr. Pallister | 2:30 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |

TUESDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Dermatology | Dr. Bronson | 2:00 P.M. |
| | Ophthalmology | Dr. Gilfillan | 2:00 P.M. |
| *N. Y. City Children's Hospitals and Schools*, Randall's Island | Orthopedics | Dr. Ogilvy | 10:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Surgery | Dr. Ritch | 2:30 P.M. |
| | Ophthalmology and Otology | Dr. Warner | 3:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Genito-urinary surgery | Drs. Morton and Fraser | 2:00 P.M. |
| | Obstetrics | Dr Commiskey | 10:00 A.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| *Coney Island Hospital* | Medicine | Drs. Nash, Hall, Hegeman and Byington | 3:30 P.M. |
| | Surgery | Drs. Fisk, Bogart, Murphy and Lack | 10:30 A.M. |

WEDNESDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Genito-urinary surgery | Dr. Greene | 2:00 P.M. |
| | Medicine | Dr. Quimby | 1:30 P.M. |
| | Obstetrics | Dr. Dorman | 2:30 P.M. |
| | Surgery | Dr. Dawbarn | 9:00 A.M. |
| *Metropolitan Hospital* | Surgery | Drs. Bagg and Homan | 2:30 P.M. |
| Feb. 5 and 26 | Laryngology and Rhinology | Dr. Foster | 2:30 P.M. |
| Feb. 5 and 26 | Genito-urinary surgery | Dr. Carleton | 2:30 P.M. |
| Feb. 5 | Medicine | Dr. Rankin | 2:30 P.M. |
| Feb. 5 and 19 | Medicine | Dr. Laidlaw | 2:30 P.M. |
| Feb. 26 | Medicine | Dr. Klots | 2:30 P.M. |
| Feb. 19 | Ophthalmology and Otology | Dr. Boyle | 2:30 P.M |
| Feb. 19 | Neurology | Dr. Howard | 2:30 P.M. |
| Feb. 19 | Electro-therapeutic | Dr. Royle | 2:30 P.M. |
| Feb. 26 | Obstetrics | Dr. Stover | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Maloney | 9:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Gynecology | Dr. Pierson | 2:30 P.M. |
| *Kings County Hospital* (Brooklyn) | Dermatology | Dr. Winfield | 1:00 P.M. |
| | Orthopedics | Dr. Truslow | 9:00 A.M. |
| | Orthopedics | Dr. Napier | 2:00 P.M. |
| *Coney Island Hospital* | Pediatrics | Drs. Beck, McQuillan, Pendleton and Van Wart | 3:30 P.M. |

THURSDAYS

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|---|---|---|---|
| *City Hospital* | Gynecology | Dr. Stearns | 2:00 P.M. |
| | Medicine | Dr. Evans | 9:00 A.M. |
| | Medicine | Dr. Brooks | 2:30 P.M. |
| *Cumberland Street Hospital* (Brooklyn) | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M. |
| *Kings County Hospital* (Brooklyn) | Gynecology | Dr. McNamara | 1:30 P.M. |
| | Obstetrics | Dr. Commiskey | 10:00 A.M |
| | Otology | Dr. Judd | 10.00 A.M. |
| | Otology | Dr. Alderton | 1.00 P.M |
| | Pediatrics | Dr. Parrish | 4:00 P.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| *Coney Island Hospital* | Gynecology | Drs. McEvitt, Mills, Mayne and Rankin | 10:30 A.M. |
| | Surgery | Drs. Murphy and Lack | 3:00 P.M. |

FRIDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Laryngology and Rhinology | Dr. Dougherty | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Abrahamson | 9:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Ophthalmology and Otology | Dr. Warner | 3:00 P.M. |
| | Surgery | Dr. Pallister | 2:30 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |

SATURDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Pathology | Dr. Larkin | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Jelliffee | 2:00 P.M. |
| *N. Y. City Children's Hospitals and Schools*, Randall's Island | Mental defectives, types, epileptics | Drs. Clark and Atwood | 2:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Medicine | Dr. Stivers | 3:30 P.M. |
| | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |

All registered physicians, visiting and resident, and medical students are cordially invited to attend these clinics.

Cards of Admission, valid until October 1st, 1913, may be obtained at the *Academy of Medicine, 17 West 43rd St., Manhattan*, and at the *Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn*, as well as from the secretaries of the several medicalcolleges.

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## Original Articles.

### CENTENARIANS AND NONAGENARIANS.*

By W. GILMAN THOMPSON, M.D.

NEW YORK.

If one considers the balance of medical literature from the point of view of the age of patients it is very noticeable that with an enormous output of works relating to infancy and childhood the opposite extreme of life has met with comparatively little exact study, even when the disproportionate number of survivors to extreme old age be reckoned with.

In this article it is proposed briefly to review some of the morbid conditions and other phenomena of those who have entered upon the tenth decade of life and to include reference to centenarians. With regard to the latter it is my belief that the number of those in this country who have passed the hundredth year is exceedingly few. It is true that references frequently are made in the public press to deaths at 100 to 103 or more years of age, but they are very apt to be among persons whose exact history is obviously impossible to obtain. For example, a few days ago, the death of an Indian at 131 years of age was recorded, but in such cases tradition and sometimes desire for notoriety may easily be confused with fact, and in several exaggerated statements as to extreme old age I have found upon inquiry that the alleged centenarian must be placed in the nonagenarian decade. A sailor who lately died in a United States naval home was stated in the public press to be 105 years of age. He had been frequently "interviewed," his portrait was published, etc. As I desired to see and study such a case, if authentic, I wrote to the commander of the home, who replied that the naval records showed that the man was 95 years of age at his death and that he had served 50 years in the navy. Like others of his years he found that his age was becoming a topic of general interest and in talking with reporters was accustomed each time to add a year or two to the date of his earliest recollections. The very old have usually survived all who could give corroborative evidence as to their age, their failing memories confuse tradition with fact, and records of vital statistics in this country which are far from perfect to-day are practically worthless if not completely non-existent when sought for in the early dates of the last century. In some few cases among those of English birth or ancestry, and among New Englanders, it is possible to establish definitely a centenarian age limit. I have such a record in a personal ancestor who lived an active life until the age of 102 years, and I possess the photograph of a woman of my acquaintance who lived for six months beyond 100 years. She was a New Englander and the mother of fourteen children, only two of whom survive her. Up to within two weeks of her death her mind was clear, her eyesight was good, and hearing so keen as to be a matter of surprise. She had no special dietetic or other health fads, and finally died from general weakness of the circulation. Her photograph, taken after living 100 years, shows well her remarkable nutrition.

Turning to the mortality statistics of the United States Bureau of the Census it is found that in 1910 in the special registration area, which comprises 58.3 per cent. of the total population of the country, the mortality within the ages under discussion was as follows: 90-94 years, 6,175 deaths; 95-99 years, 1,427 deaths; 100 years and over, 372 deaths. The total deaths for this area were a little more than three-fourths of a million in the same year.

It is interesting to note the principal causes of death at these advanced ages, which were as follows:

| | Years: | | |
|---|---|---|---|
| | 90–94 | 95–99 | 100+ |
| Diseases of the circulatory system | 1165 | 257 | 54 |
| Diseases of the respiratory system | 887 | 197 | 43 |
| Diseases of the digestive system | 354 | 63 | 10 |
| Bright's disease | 314 | 76 | 15 |
| Apoplexy | 485 | 90 | 22 |
| Influenza | 177 | 36 | 9 |
| Cancer | 150 | 22 | 4 |

Under the diseases of the circulatory system, organic disease of the heart is recorded for the three periods above given respectively as follows: 703, 156, 35.

Under diseases of the respiratory system pneumonia ranked as follows: 634, 145, 32, and bronchopneumonia 156, 42, 13. Thus, for the entire tenth decade and also among centenarians these two respiratory diseases taken together rank first as a cause of death, organic heart disease is second, apoplexy third, and Bright's disease fourth.

Among the fatal cases of diseases of the digestive system, enteritis outranks all others by a considerable percentage. There are, however, many cases among the aged of serious intestinal obstruction from constipation. In the census lists above quoted from, there were 25 fatal cases of intestinal obstruction. In my personal observation among the very aged, overeating and consequent overtaxing of the intestine is a very common error. I know a gentleman who shortly after celebrating his centennial died of overindulgence in lobster salad, and I saw a woman of 96 years who died from intestinal obstruction as a result of long-continued overeating, from which her family were unable to restrain her. In her seventh decade she was a moderate eater, but with advancing years her appetite grew and amounted to bulimia. Two sisters were under my

*A paper read before the Practitioners' Society of New York, Dec. 6, 1912.

observation for many years, one died at 92 and the other is at present entering upon her ninety-second year. They were exceedingly fond of what is sometimes called "old-fashioned New England cooking," and sausages, mince pie, doughnuts, green corn and similar heavy articles of diet were among those for which I was not infrequently called upon to administer correctives! An old gentleman of 90, who visited me during the past summer, and who appeared as vigorous as many a man of 70, astonished me by the variety and quantity of food which he disposed of. In such persons the attainment of ripe years appears to be due mainly to the persistence of good digestion, a survival of the fittest stomachs even after other important organs are seriously impaired. As old age advances and activities and diversions become more and more restricted, the appetite often remains undiminished. The limitation of locomotion, the lack of acuteness of sight and hearing, and other weaknesses, may leave the pleasures of the table almost the only gratification in a monotonous existence. In such cases, if digestion remains fairly active, nutrition may be maintained in an astonishing degree. The accompanying photograph of a man of 97 years illustrates well this condition.

Well-nourished man, 97 years of age, with gangrene of the left leg

These patients usually accustom themselves to the nightly use of strong laxative or cathartic pills with which they counteract the effects of excessive eating, improper selection of food and lack of exercise. Sooner or later, however, they are apt to acquire serious, if not fatal, intestinal obstruction.

Quite a different cause for obstruction is found in those of wholly opposite physique, those who are thin and markedly atropic or marasmic. They eat extremely small quantities of food of a type which leaves so little residue that the normal mechanical element of intestinal stimulation is lacking. They become careless about securing proper defecation and often pass several consecutive days without it, until the pain of flatulent distention compels them to seek relief. Through the flaccid abdominal wall, chains of scybalae may be felt, sometimes from the cecum to the sigmoid, and digital examination of the rectum may reveal an enormous mass of impacted feces. In a woman, 92 years of age, I found such a mass, which required removal with finger and scoop through sittings on three successive days before it could all safely be extracted. I would emphasize particularly the importance of rectal examination in the aged whenever serious constipation is present. In another case, the pressure from hardened scybalae above the rectum gave rise to so much congestion as to cause the discharge of considerable blood and mucus. Such cases may only be made worse by the use of cathartics, and oil and subsequent mildly stimulating enemata constitute the proper means of relief. Continued irrigation of the bowel may prove too exhausting in this type of case. A further difficulty arises from the enteroptosis, which often exists in such emaciated patients, and from the colon distention which they often have.

Death from apoplexy is rare among centenarians. It caused only 22 deaths among the 372 cases of 1910. In fact, it becomes progressively rarer after the ninety-fifth year, for the arterial changes which predispose to it are developed, if it all, at an earlier period.

Gangrene of the extremities from obliterating endarteritis or thrombosis is also an infrequent cause of death, but a few fatal cases are recorded. There were 3 among the centenarians and 20 among the 1,427 cases in the second half of the tenth decade. The man, whose good physique is shown in the accompanying photograph, was an Irish laborer, 97 years of age. His age was well authenticated by cross-examination as to dates and corroborative testimony from his family. He had been in excellent health up to the time of his admission to my clinic in Bellevue Hospital to which he applied for a very rapidly progressing senile gangrene of the left leg. He suffered intense pain which was considerably relieved by the method which I have found most useful in the treatment of moist gangrene, the direction of a continuous current of very hot air over the mortifying surface. In a few days, however, he acquired a septic pneumonia to which he naturally succumbed.

Carcinoma, like apoplexy, becomes rapidly less frequent as a cause of death after the ninetieth year, most of the destined victims having died in the sixth up to the ninth decade. In fact, there is a rapid falling off between the eighth and ninth decades, the percentage dropping from 7.8 per cent. in the eighth decade to 2.5 per cent. in the ninth decade, 2.3 in the tenth, and to about one per cent. for centenarians, there having been only 4 deaths from carcinoma among the 372 persons of this lat-

ter class. In the nonagenarian group the chief sites of malignant growth are in the stomach, liver, breast and skin. The bearing of these facts upon the etiology of carcinoma is of interest, for a disease which does not develop until after the ninetieth year may scarcely be due to any hereditary factor, and the infrequency of the disease after this year merely emphasizes the constitutional resistance to extraneous influences which the majority of nonagenarians possess.

Among the diseases of the circulation to which the very aged succumb, cardiac sclerosis and progressive stenosis of the aortic valve would naturally be expected to predominate, and such is the case, but notwithstanding, the nonagenarian is sometimes surprisingly tolerant of the latter lesion. This is no doubt due to the abstinence from all exertion, and a well developed compensatory hypertrophy of the heart which may exist. I have followed several such cases for several years in which there was unexpected absence of the symptoms common to this condition in earlier years, such as vertigo fainting, or any symptoms of failing compensation, like dyspnea, pulmonary congestion or dropsy. Moreover, death is frequently due to causes not immediately associated with the condition of the heart.

Not long ago, I met with a fatal case of typical angina pectoris in a man of 94 years, who had suffered for six months from increasingly frequent attacks, but which did not prevent him from considerable activity, or necessitate his remaining in bed until two days before he died. Among the 1,427 deaths of the census record of 1910 occurring from the 95th to the 100th year, only 3 were due to this cause, and my case was doubtless one of them as it took place in the same year. Among the centenarians there were no deaths from this disease.

It is a present custom to attribute a great variety of ills to arteriosclerosis and high blood pressure, which is doubtless correct, although there is some tendency to exaggeration in this direction. It is, nevertheless, quite noticeable that nonagenarians, whose arteries may have become extremely rigid or markedly thickened with calcareous deposit, frequently do not present any of the symptoms so often explained on this basis in earlier life. They may remain quite free from vertigo, headache, dyspnea, or any serious symptoms of nephritis, and as stated above, angina pectoris and peripheral gangrene are not common phenomena among them. When they do have symptoms of functional character, referable to high blood pressure, it is inexpedient to adopt the more vigorous measures which are used in younger patients. Vasodilators are usually without effect in such advanced conditions, but chloral hydrate in 5 grain doses, despite the prejudice against it as a cardiac depressant is both a safe and often effective remedy, and the bromides and codeine are also beneficial in this type of case.

One meets with a peculiarly fulminating type of pneumonia occasionally in very old persons. The patient, in previous fairly vigorous health, is attacked with sudden severe intrathoracic pain and dyspnea, and almost at once begins to raise typical blood-stained pneumonic sputum, together with a very large quantity of bronchorrheal exudate. In a receptacle the round distinct masses of bright red well-aerated pneumonic sputum float freely in a mass of clear white watery mucus. There are widespread crepitant râles, but pneumonic dullness may be obscured by emphysema. There is no chill, and the body temperature may not rise above 100° or 101° F. The pulse is full, arterial tension is high and cyanosis is extreme. Coma may shortly supervene and the patient may die within 24 hours of the onset of symptoms. I saw such a case not long ago in a man just entering upon his ninetieth year whose condition became very serious within six hours of the invasion. In all such cases, morphine is extremely ill-borne, usually making matters much worse, but moderate doses of codeine may be given with applications to the chest of mustard pastes or poultices to relieve pain. There is nothing like the hypodermatic use of atropine with counterirritation to check the bronchorrhea but cupping may not be satisfactorily performed owing to prominence of the ribs in a thin chest wall. High arterial tension should be reduced, when possible, by chloral or nitroglycerine and catharsis.

This very acute type of pneumonia is in strong contrast with the commoner sort in which the onset is so gradual and physical signs are so indefinite that it may be a day or two before the diagnosis is accurately determinable, although the condition should always be suspected in a nonagenarian who experiences sudden weakness with thoracic oppression. This type of the disease usually demands early and active stimulation of the circulation, for the policy of letting the patient alone in the outdoor air, so often successful in young pneumonia patients is hazardous in the afebrile and adynamic cases among the aged.

The so-called senile epilepsy is more common just before than during the tenth decade, at least as a cause of death. In the census group of 1910 only 4 fatal cases are recorded among the 7,602 nonagenarians, and only one case in a centenarian. When the disease is present, however, the convulsions may become very frequent. I am familiar with a case in a woman of 92 years, who for several years has had convulsive seizures of increasing frequency, until, at the present time, they sometimes number a dozen or fifteen in a day. They are exceedingly rebellious to treatment and in this case codeine and chlorotone proved more effective than the bromides or any other of a long series of sedatives. In the intervals, the patient appears in fair health.

One of the principal difficulties encountered in the treatment of very old patients is that of overcoming their prejudices and obstinacy in matters dietetic and hygienic, for, having lived so long, they naturally believe they know better than anyone else what is best for themselves, and, with a certain irritability, resist interference. They resent the personal contact of the ministrations of a nurse, or refuse to take this or that remedy, so that much tact with firmness may be required in dealing with them. As a rule, also, they are relatively very susceptible to the action of drugs and great care must be exercised not to overdose them. A good general rule is to employ only about two-thirds of the ordinary dosage. A woman of 92 years, whom I had occasion to treat for various ailments, such as chronic bronchitis and attacks of indigestion, would never allow me to see her in bed, no matter how ill she was, for she acquired the notion that if a doctor once caught her there she would never get out of it again, so she would keep me waiting until she dressed and sat up, immediately going back to bed when I had left! A fortnight before her death, however, she gave in, and, for the first time in her life, permitted a nurse to approach

her. Such patients often suffer seriously from lack of attention to personal cleanliness. Originally of cleanly habits, physical or sometimes mental weakness renders them careless and forgetful, with the result that they may acquire considerable cutaneous irritation. In women, I have several times seen ulceration and edema of the vulva extending into the vagina, from lack of cleanliness in micturition, and similar irritation may affect the perineum from carelessness in defecation. Another part of the body which suffers from lack of cleanliness is the mouth, and such teeth as persist become a source of serious irritation. Alveolar pyorrhea, gingivitis and stomatitis are common. From the former, mild grades of septic infection may develop with a subacute temperature and irritation of the heart which may become very irregular in action.

There are a number of diseases common enough in the sixth to the ninth decades of life which are rare among the extremely aged. For example, tuberculosis in the series of the census of 1910 caused only 26 deaths in the first half of the 10th decade, 5 in the second half, and none among centenarians. In these periods biliary calculi are only recorded 5 times in fatal cases, all being before the 95th year. Prostatic enlargement, although common and troublesome, was a cause of death only 35 times in the first half decade, 12 times in the second, and was not reported among centenarians.

One would suppose that having braved the vicissitudes of life for 100 years one would be content quickly to await the end, but in 1910 one suicide was recorded in a centenarian and nine among nonagenarians. It is not stated, however, in how many of these cases there might have been melancholia or other mental aberration.

There are many modern theories to explain extreme longevity on the basis of individual peculiarities, from the intestinal chronic toxemia idea of Metchnikoff to the functionless ductless gland idea of Lorand ("Das Altern"), particularly of thyroid failure, but no one theory appears applicable to a majority of cases. In many persons the attainment of nonagenarian age appears to be due chiefly to favorable environment, and freedom from harassing worries and poverty. They are like Bill Nye's yellow dog, of whom he was accustomed to assert that "the only real joy that animal had in life was *not* being kicked." They have not been buffeted by the world's cares and trials, and are blessed with serenity of mind and uniformity of function. On the other hand, longevity is about equally found among the struggling poor. The long-lived Bulgarian peasants from whom Metchnikoff derives much of his argument in favor of the use of sour milk are of this type, and among the Irish and Scotch are found many instances of extreme longevity in the laboring classes. The Irishman 97 years of age, above referred to, certainly did not owe his years to ease of life, for he had been a hardworking day laborer almost up to his tenth decade.

A majority of nonagenarians give a history of long-lived ancestry, and there are many families remarkable for this characteristic, but it is not an essential one, by any means, for a line of such ancestry may be broken by intervention of infectious diseases or by the unhygienic or irrational habits of individuals.

All things considered, however, heredity appears to be a much stronger factor in producing nonagenarians than any special habits, as of diet or hygiene, for the latter are found to present the greatest variety in different cases—hence extreme longevity is largely a matter of natural selection.

That the aged very often exhibit no predominating symptoms of any one disease to which their death is attributable, is a striking fact. They may become so universally sclerosed and atrophic that a general weakness is their only complaint, and although they may have marked arteriosclerosis, nephritis, or myocardial change, the more active symptoms which characterize such diseases early in life may be entirely wanting. They rarely show marked edema, for example, and the typical picture of the last stages of failing compensation of the heart, so familiar in early life, the orthopnea, cyanosis, and general anasarca, etc., is very rarely met with. They die suddenly and peacefully—it is as if the clock had run down. Hence in the mortality statistics "senility" is so often given as the cause of death and accepted by the health authorities without further question.

In the group of cases in 1910 this was the final diagnosis in 26 per cent. of the nonagenarians and in 40 per cent. of the centenarians. Fortunate it is, indeed, that the reward of a long life well spent should so often be a peaceful ending without the long drawn out sufferings so common in the middle decades.

34 East Thirty-first Street.

## THE PRESENT STATUS AND FUTURE SCOPE OF THORACIC SURGERY.

By DE WITT STETTEN, M.D.,

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Though no branch of surgery has undergone a more remarkable development and been the subject of more active discussion within the memory of even the latest generation of surgeons than the modern surgery of the thorax, though the literature teems with descriptions of apparatuses for entering the chest cavity and of technical operative details based mainly upon experimental data, there has been a peculiar dearth of papers dealing with the more practical phases of the situation. With the exception of here and there an isolated case report, very little effort has been made to enlighten the profession generally on the present status and future scope of thoracic surgery as far as its practical application in the treatment of pathological conditions of the chest is concerned. The writer had the good fortune to be present in Breslau eight years ago at the actual birth of this latest member of the surgical family, and he has since watched the growth of that lusty infant to promising adolescence with the liveliest interest. He will attempt to present here a compilation of the situation today. If what follows has a somewhat pessimistic ring, this must not be interpreted as a lack of enthusiasm for the future of thoracic surgery when it reaches maturity, but rather as the justifiable scientific scepticism of an impartial critic.

As is well known, the modern conception of intrathoracic surgery dates its origin to Sauerbruch's brief communication in the *Zentralblatt für Chirurgie* in the early part of 1904. In this article he showed that it was possible to exclude the harmful effects of pneumothorax in operations upon the chest—the *bête noire* of the thoracic surgeon—by

the use of a negative pressure chamber surrounding the operative field. Up to this time, notwithstanding the high standard of excellence of general surgery and the perfection of aseptic measures, the chest was practically a *noli me tangere* to even the most daring surgeon. To be sure, an occasional attempt had been made to perform intrathoracic operations with the aid of the Fell-O'Dwyer or other methods of artificial respiration or with Murphy's pneumopexy, but altogether it was a highly unsatisfactory and dangerous procedure. In fact, nothing noteworthy had been accomplished except the extrapleural operations on the heart and pericardium for wounds and suppurative pericarditis and the costal resection or simple thoracotomy for empyema. When Sauerbruch's original paper and his further more elaborate contributions on the same subject appeared it was truly as if a bombshell had exploded in the surgical camp. Immediately on all sides modifications of and improvements on Sauerbruch's method sprang up and great were the hopes expressed as to what the future would bring. The main bone of contention was as to the preference of the method to be used for preventing surgical pneumothorax. Brauer and Petersen, hot upon Sauerbruch's trail, claimed that the method of positive pressure was simpler, cheaper, and more practical in every way than Sauerbruch's cumbersome, expensive, and nonportable negative pressure chamber. This particular controversy has been carried down to the present day, but a new factor was added in 1909, when Meltzer and Auer suggested the now well-known principle of continuous intratracheal insufflation as cheaper, simpler, safer, and more satisfactory in every respect than either of the two previous methods. I do not propose to enter upon a protracted discourse as to the relative merits of these three well-known methods. I have had the opportunity of observing the working of all three types of apparatus, and I offer herewith a summary of my personal conclusions.

As to the relative value of minus and plus pressure, whether we use the simple negative pressure chamber of Sauerbruch or the ingenious combined negative and positive pressure cabinet of Willy Meyer on the one hand, or the positive pressure apparatuses of Brauer, Robinson, Green and Janeway, Kuhn, or Tiegel, etc., on the other, one fact has been fairly definitely established by Dreyer and Spannaus. In 1908 these two, working in Kuettner's clinic, proved rather conclusively that physiologically these two methods are practically identical, both producing a higher pressure in the interior of the lung than on its surface, thus preventing its collapse. To be sure, Tiegel has very recently shown that the blood pressure in the endothoracic veins and pulmonary artery rises a trifle more under positive pressure, thus throwing more work on the right ventricle, but this seems to be of no great consequence. In favor of the negative pressure method it may be said that the management of the anesthesia is more satisfactory, particularly when the patient vomits or is otherwise troublesome, and further, that there is less danger of aspiration. In favor of the positive pressure method the arguments of simplicity, comparative inexpensiveness, and portability of the apparatus can be advanced.

The Meltzer-Auer method has certain features which commend it in preference to either of the two former. The apparatus is cheaper by far, and much more portable. With it operations can be performed anywhere and practically under any conditions. The patient may be easily placed in any position to suit the operator's convenience. The anesthesia is exceptionally well under the control of the manipulator of the apparatus. When the chest is opened there is almost a complete apnea, which is particularly advantageous, as respiratory movements are a great annoyance to the surgeon working in the thoracic cavity, where often the greatest delicacy of manipulation is imperative. Further the question of respiration can be practically ignored. There is no necessity for the patient to breathe, and as long as the heart action is satisfactory one need not worry about respiratory failure, so easily possible in these operations on and around such vital organs as are contained in the chest. The apparatus really does the breathing for the patient. With either of the two older methods, should respiratory failure occur, a dilemma arises that is not easily overcome. On the other hand, the intubation is frequently a rather difficult and lengthy procedure, and it is not quite certain yet that the danger of pneumonia from the irritating effects of the concentrated anesthetic coming into such direct contact with the pulmonary alveoli is not considerably greater than with the other procedures. Eisberg, Fisher, Robinson, and others have made decided improvements upon Meltzer's primitive, experimental apparatus to overcome these difficulties and to successfully apply the is profuse expectoration, as in bronchiectatic cavities, insufflation is not to be recommended. Negative pressure would there be the method of choice, as it would permit freer expectoration. One decided advantage of either the negative or positive pressure cabinet over the insufflation method is that it may be used in the after treatment of the case to keep the lung distended and to facilitate drainage, as Willy Meyer has recently pointed out. Repeated intubations would be most objectionable. Further, the negative or positive pressure chamber may be used with local anesthesia, which is out of the question with the insufflation method. As will be seen, each method has certain features in its favor, and, like methods of anesthesia, no one can be considered the most desirable. The one best suited to the case should be selected.

Whichever method we choose to use, one fact is certain. The bugbear of surgical pneumothorax no longer exists. The thoracic cavity can be entered surgically with almost the same impunity as the abdomen. I use the word "almost" advisedly, for the convalescence of thoracotomy cases is not quite as uneventful as that of the average laparotomy case. The shock to the patient is certainly greater. Frequently a pleuritic exudate develops and the pleura is undoubtedly much more susceptible to infection than the peritoneum. Further, the possibility of a postoperative pneumonia is decidedly greater. However, these dangers can be coped with, and I have little doubt that soon they will play an unimportant and minor rôle.

Coincident with the development of measures to eliminate the dangers of surgical pneumothorax, great strides have been made in certain diagnostic fields. I refer to the progress in esophagoscopy, bronchoscopy, and radiography. The details of this progress are well known to all, and I merely mention it in passing, for it has contributed not a little in bringing thoracic surgery to its present position, and it will be of the utmost importance in advancing it still further.

Granted, now, that we are able to make a more accurate and earlier diagnosis of the various forms

of thoracic disease; granted, also, that we may safely open the thorax, what can be done when we have entered the thoracic cavity? Are the hopes that the future of thoracic surgery will rival the brilliant present of the surgery of the abdomen justified? I have decided that the best way to answer these questions is to discuss seriatim the various pathological conditions of the chest which have been, which can be, which might be, and which might not be amenable to surgical interference.

Let us begin with the chest wall. Without question, large primary tumors, sarcomata, chrondromata, and osteomata of the thoracic wall can be much more radically extirpated now that the danger of pneumothorax is obviated. This statement in a measure applies also to the secondary involvement of the chest wall in mammary cancer, either from the primary tumor or from the recurrence. Sauerbruch, Kuettner, and others have successfully resected the chest wall when involved by beast carcinoma. So far as the large primary tumors of the chest wall are concerned, they are a great rarity and they are likely to become still more uncommon as the public becomes more enlightened. The utility of resection of the chest on account of its involvement in mammary carcinoma is open to serious question, for the presumption of internal metastases when this stage has been reached amounts to almost a moral certainty. Advanced costal tuberculosis with the extension to the parietal pleura now offers a more grateful field for radical surgical intervention, and injuries to the intercostal vessels can be most successfully attacked. Exploratory thoracotomy can be performed to establish a diagnosis of intrathoracic disease. It is an operation entirely analogous to the laparotomy performed for exploratory purposes, but it must be always understood that as yet it is by no means so devoid of danger. While in the present state of our knowledge there may be some justice in a more or less indiscriminate use of this procedure merely for the purpose of establishing intrathoracic surgery on a firmer basis, I believe that eventually there will be no indication for the operation unless there exists a reasonable hope beforehand that something can be accomplished after the chest cavity has been entered.

The lungs and pleura require our next consideration. The severer injuries or ruptures of the lung with progressive hemorrhage, socalled "tension pneumothorax" and mediastinal emphysema, demand thoracotomy and pulmonary suture, though differential pressure or insufflation is by no means a necessity, as the lung is already collapsed and the chest cavity has adjusted itself to these changed conditions. Sauerbruch claims, however, that the operation is more satisfactorily performed under these measures. If the above mentioned threatening features do not exist, it is the consensus of opinion that palliative therapy is the most satisfactory. Pneumonotomy might be indicated to extract a foreign body from a smaller bronchus, inaccessable to the bronchoscope. However, this would be a most unusual indication, as foreign bodies almost invariably travel no further than the main bronchi, from which they can usually be extracted by means of the instrument,

The acute abscess of the lung offers an especially satisfactory field for the application of the newer methods of intrathoracic surgery. If possible, the operation should be done in two stages, the affected lobe being first sewed into the thoracotomy wound and then incised after adhesions have formed, and the rest of the pleural cavity has been walled off. What has just been said in regard to the acute abscess applies with equal force to gangrene of the lung. For the chronic pulmonary abscess conditions are not as satisfactory, owing to the denseness of the abscess wall. Besides the above described incision in two stages, extensive rib resection is likewise necessary to mobilize the chest wall. If, in these suppurative or gangrenous affections of the lung, a large pleural exudate exists or the diseased lobe is adherent to the chest wall, differential pressure or insufflation is, of course, superfluous. An isolated bronchiectasis is likewise an indication for pneumonotomy, and frequently, also, for a thoracoplasty. When there are multiple bronchiectases, which is usually the case, they should not be attacked in the direct fashion. I shall refer to this phase of the subject again when I speak of the surgical treatment of pulmonary tuberculosis. After an incision of a bronchiectatic cavity, a bronchial fistula is very likely to develop. This condition is very resistant to surgical treatment. Pneumonectomy or resection of the affected lobe or a part thereof might be attempted, but this is as yet an extremely dangerous procedure. While simple and successful in the animal experiment, resection of the lung has proved fatal in a large percentage of cases in the human being, though Sauerbach, Kuettner, and Robinson report successes.

Pneumonectomy might likewise be indicated in cases of primary malignant neoplasm of the lung or pleura, in secondary involvement of the lung and pleura from tumors of the chest, in ecchinococcus of the lung, and in localized actinomycosis, and this operation has even been suggested in localized tuberculosis. Tumors, to be sure, are usually inoperable when diagnosed, though the *x*-ray and exploratory thoracotomy may bring them more within the sphere of surgery. The medical treatment of actinomycosis has been fairly satisfactory and will probably become more so in the future, while few surgeons take the suggestion of excising a tuberculous lobe seriously. Axhausen reports a successful operation for ecchinococcus of the lung. An ingenious proposition has been made by Bruns and Sauerbruch to produce atrophy and cicatrization of the lung in multiple bronchiectases and tuberculosis. They suggest ligation of the branches of the pulmonary artery. Though Sauerbruch has seen improvement follow this procedure in two cases of bronchiectasis, the operation is still in the experimental stage.

Although not directly dependent upon the differential pressure or insufflation methods, there has developed within the past decade a tendency to treat two diseases of the lungs hitherto belonging to the domain of medicine by surgical measures. I refer to emphysema and tuberculosis. As far back as 1859 W. A. Freund suggested that emphysema was due to a primary, rigid dilatation of the thorax. Upon this theory he has proposed the extrapleural resection of the costal cartilages on both sides to mobilize and narrow the chest wall. The operation has been performed many times and does seem to be of value. Its exact mode of action has not yet been satisfactorily explained. The selection of the cases is very important, the operation is not devoid of danger, and even after temporary improvement the symptoms have reappeared with an increase in their severity. Various surgical measures have been suggested in the treatment of pulmonary tuberculosis. The production of an artificial pneumothorax by

nitrogen, as proposed by Murphy and Forlanini, has been practised in cases where no pleural adhesions exist, and where the disease is unilateral. Many have reported good results with this procedure. Freund has advanced the theory that the frequency of apical tuberculosis is due to a narrowing and immobility of the upper aperture of the thorax on account of a primary shortening of the first costal cartilage. He has proposed an extrapleural chrondectomy of the first costal cartilage to correct this error of development in cases of incipient apical tuberculosis. Kausch and Seidel have had successful results.

A much more radical plan of treatment of tuberculosis of the lung has been developed by Friedrich, following a suggestion of Brauer. He calls the operation "total thoractoplastic pleuropneumolysis." This operation is based really upon the same principle as the induction of an artificial pneumothorax, namely, the production of cicatrization of the diseased lung by compression. The operation is nothing but a more or less extensive extrapleural rib resection and a deossification and mobilization of the chest wall, producing an extrapleural pneumothorax. It is really only applicable in a unilateral affection. It may also be used in multiple bronchiectases. A pad is used during the after treatment to exert pressure on the chest wall. Friedrich and others report satisfactory results, though the operation is by no means free from danger. In a modified form the operation may be applied to the upper lobe alone, the first three or four ribs being resected—socalled apicolysis. In many of these cases local regional anesthesia may be used.

I have already referred to ligation of branches of the pulmonary artery and to pneumonectomy in tuberculosis. As to the utility of surgery in pulmonary tuberculosis, I think we can sum up the situation in a very few words. There may be an occasional instance in which an otherwise healthy patient has a severe but localized pulmonary lesion, say an isolated cavity. Such a case might possibly warrant surgical interference, perhaps a costal pleuropneumolysis of Friedrich. In general, however, hygienic, climatic, and vaccine therapy are so much more rational, have been so successful, and give promise of still further success that I am confident that surgery will always play a very negligible rôle in the treatment of this disease.

Before we leave the lungs and pleura, one word on the subject of empyema. Have these newer methods improved our treatment of this condition? Personally, I do not believe that much advance has been made. I am firmly convinced that the use of differential pressure or insufflation is directly contraindicated in empyema operations, unless the case is clearly of an interlobular form, when it should be treated like a pulmonary abscess. Especially do I believe that these various pressure methods are injurious in the metapneumonic type of the disease, for they can only tend to create further disturbances in the already diseased lung. In localized empyema the use of these methods will only tend to diffuse the pus. The after treatment is not shortened, as some had hoped. I can see no object whatsoever in using these methods, as the lung is already collapsed and the chest cavity has adapted itself to these changed conditions. Aspiration and the injection of antiseptics, for example, formalin, in empyema, I regard as dangerous, unscientific, and unsatisfactory except in the most exceptional cases. Suction drainage after operation has some decided advantages. I must not omit the mention of Beck's bismuth paste in chronic sinuses. This has undoubtedly saved many a patient from an extensive decortication and thoracoplasty. Ochsner is particularly enthusiastic over the use of bismuth paste. The ever present danger of bismuth poisoning must not be disregarded, and too large quantities, too concentrated paste, and too frequent injections should be avoided.

We now come to the surgery of the heart and great vessels. It is claimed that the various pressure methods are a great aid in the suture of the heart wounds, especially inasmuch as 80 per cent. of all heart wounds are complicated by injuries of the left pleural cavity. One can certainly operate on the heart with greater impunity and rapidity if one need not worry about opening the chest cavities. I favor the use of differential pressure or insufflation in these cases though the results in extrapleural operations have been very gratifying. Peck in a recent analysis of 160 cases found 36 per cent. recoveries, with more than 60 per cent. of the fatal cases succumbing to secondary causes, usually infection. As to the actual diseases of the heart, the only one in which operative intervention has been dreamed of has been mitral stenosis. Some years ago Lauder Brunton suggested an incision of the mitral valve to relieve extreme grades of this condition. Cushing, Branch, and others have tested this possibility experimentally, and seem to think well of it. I greatly doubt, however, its adaptability to the human subject. In the first place, the condition of the patients is invariably so unfavorable that any thought of a severe operative procedure is entirely out of the question, and, even if it were not, we could only succeed in converting the stenosis into the very little better insufficiency. Further, a heart adjusted for a stenosis is not at all suited to accommodate a sudden regurgitation, and even should this be possible, when the incision in the valve cicatrizes the stenosis would recur.

No noteworthy change has taken place in the treatment of suppurative pericarditis. A very good suggestion was, however, made by Brauer in 1902 in the treatment of adhesive pericarditis, where, owing to the immobility of the heart on account of its fixation to the chest, marked circulatory disturbances occur. His plan is simply an extrapleural resection of the bony part of the chest wall over the cardiac region, several ribs, and, if necessary, a part or the whole of the sternum being removed, thus giving the heart action freer play. This mobilization of the precordium he calls "cardiolysis." The condition necessitating this operation is rare, but a number of very successful results after this procedure have been reported, notably by Petersen and Simon, V. Beck, Danielsen and Fritz Koenig. Curtillet and Péllissier report a successful case in which the pericarditis was of tuberculous origin.

Injuries to the great vessels are usually rapidly fatal, though if very promptly attended to they may be operated on successfully. Von Eiselsberg has sutured with success a stab wound of the root of the pulmonary vein, and Kuettner has done the same with a wound of the pulmonary artery. Heile has recently ligated successfully the pulmonary vein of the left lower lobe on account of a bullet wound. Injuries to the aorta and its branches, to the venæ cavæ and innominate veins are easily accessible by transpleural routes. Aneurysms of the branches of the aorta may become more amenable to surgical treatment, for proximal ligation is certainly a simpler procedure today than it ever has

been. Recently Lusk has revived interest in the wiring of aortic aneurysm, though it is very questionable if this procedure will ever attain great popularity.

Within the past few years a number of extremely interesting suggestions, based upon experimental work, have been made in regard to the surgery of the great vessels, which I shall now briefly consider. In 1907 Trendelenburg, after numerous successful animal experiments, suggested the extraction of the embolus after embolism of the pulmonary artery, unfortunately a not altogether infrequent postoperative complication in surgery. I shall not enter into the technical details of the operation, which are most ingeniously conceived. The operation has been attempted a number of times on the human with invariably fatal outcome as yet, though a patient of Krueger lived five days and succumbed eventually to a secondary pneumonia. I cannot see that the operation has much justification. Small emboli are by no means invariably fatal, while under the most favorable conditions the operation itself is a most serious menace to life. As a matter of fact, the operation would only be indicated in extreme cases where exitus occurs almost immediately after the lodgment of the embolus. In such a case it would be almost impossible to even get the patient on the table alive, much less off of it. Even if it should be possible to successfully extract an embolus, another is unlikely to follow or a thrombus is likely to form at the original site. Trendelenburg claims that there is a group of cases in which the obstruction is not complete at first, and that the patient may live from ten to sixty minutes after the lodgment of the embolus. Acocrding to him, this type offers the indication for operative interference. Personally, I would rather prefer giving the patient the chance of getting over the condition without operation, though a patient may yet be saved by operative intervention who would otherwise have perished. The operation is done extrapleurally, although the pleural cavity may easily be opened, and then some form of pressure apparatus would be useful.

The marvelous experimental work of Carrel on the great vessels is doubtless well known to all. Nothing but admiration is due the ingenuity and untiring effort of that brilliant experimenter, and from the purely scientific, physiological standpoint his remarkable results are of the greatest significance. From the practical point of view, however, I feel that they will help us but little. In aortic aneurism or coronary disease the condition of the patient is usually such that any thought of a serious operative procedure is out of the question, and the fact that a healthy dog will tolerate an aortic resection or a coronary anastomosis is no argument that a diseased human will. Further, the local conditions are so different that absolutely no analogy can be drawn between the surgical work which has been done on the sound, normal vessels of the dog and that proposed for the diseased, sclerotic and calcareous structures in the patient. You may be able to suture successfully the elastic artery of an animal. I am certain that, even if the patient stood the shock of the operation, you would not succeed with a suture of the friable walls of a diseased aorta. The suggestion of Munro to ligate the patent ductus arteriosus will scarcely receive practical application, as this anomaly gives slight symptoms and offers an excellent prognosis.

The extension of the surgery of the intrathoracic portion of the esophagus has really been the main aim of all the workers in this field. Notwithstanding the most earnest endeavor of numerous surgeons, in spite of really brilliant experimental successes, little has been accomplished practically. Wounds or rupture of this organ in its course in the thorax might be sutured with success. Foreign bodies may be extracted by transpleural operation, but this should only be undertaken if they are inaccessible to competent esophagoscopy, or if they are impacted and cannot be dislodged without the danger of seriously injuring the organ. Benign strictures would only come into consideration for operation if they are impassable. For this condition Fischer has proposed a transpleural cardiotomy and retrograde bougieing. I think that an abdominal gastrotomy might accomplish the same object with less risk to the patient. If the stricture is confined to the lower portion of the esophagus, an esophagogastrostomy—an anastomosis between the esophagus and stomach in the thorax might be considered. Cardiospasm with fusiform dilatation of the esophagus is usually amenable to dilatation with the cardiodilators of Gottstein, Plummer, or Einhorn. Willy Meyer's longitudinal esophagoplication with vagolysis might occasionally be indicated to reduce an unusually large pouch. Intrathoracic diverticula warranting operations are rare. Should one exist it may be excised or an anastomosis could be made between the sac and the stomach according to Lotheissen's suggestion.

The radical cure of esophageal cancer has been the Holy Grail of the thoracic surgeon. Three years ago Sauerbruch collected all the cases in which the attempt at radical excision had been made, and found 20 cases with 100 per cent mortality. Since then many other attempts have been made, but they have uniformly failed, although cases have lived as long as two weeks after operation. I had hoped, eight years ago, when I assisted Sauerbruch in his early experiments and saw the astonishing results of esophagectomy in dogs, that within a very short time the radical cure of cancer of the esophagus would be an established fact. This type of carcinoma is relatively benign, it metastasizes slowly, and prompt diagnosis is usually possible, as early symptoms are the rule. This latter statement is especially true since esophagoscopy and radiography have reached their present perfection. I have become less optimistic, however, in the course of the past years. The esophagus lacks a peritoneal coat and cannot be sutured like the intestine. It is composed of soft muscular tissue and can stand no tension whatever. The carcinoma, even in the early stages, extends for some distance along the tube, and frequently the vagi are involved in the growth. Technical difficulties are nearly insurmountable in most instances, and insufficiency of the suture line, infection, or pneumonia are almost certain sequelæ. I am very much inclined to agree with Sauerbruch that only those cases are really operable in which a small tumor exists at or near the cardiac end. Then a resection may be performed and an esophagogastrostomy done after pulling a part of the stomach into the chest through the diaphragm. If the tumor is higher up a resection may still be possible, but then both ends of the gullet must be closed, as an anastomosis between the two ends is out of the question and an esophagogastrostomy can no longer be done. A gastrostomy, with or without an esophagostomy in the neck, is, of course, needed. The esophagus in

the neck might be eventually connected with the stomach by means of a jejunal loop as proposed by Wullstein and Roux, or by a skin tube, or by both, but these operations border on the fantastic, though Lexer last year actually reported a case in which total esophagoplasty had been successfully performed in this way on account of an impassable cicatricial stenosis. Very recently Jianu, on the basis of animal experimentation, has proposed the excellent plan of forming a new esophagus out of the greater curvature of the stomach. Roepke has performed this operation with success on the human subject. An exploratory thoracotomy is especially indicated in suspected esophageal cancer, and only through its aid will the operable cases be found and will anything be accomplished.

A word on the surgery of the mediastinum. From its anterior portion intrathoracic goiter, enlarged thymus glands, tumors developing from thymus rests or lymph glands—sarcomata, endotheliomata, dermoids—might be removed. Olivier has recently collected the thymectomies from the literature and has found 23 cures in 42 cases. Charles H. Mayo added another successful case a short time ago. Von Eiselsberg has successfully extirpated a dermoid, and Friedrich a so-called "Askanazy glandular tumor" from the anterior mediastinum. The incision and drainage of mediastinal abscesses or broken down glands might also be considered. The intrathoracic portions of the thoracic duct and the pneumogastric and phrenic nerves have not as yet been brought within the domain of surgery.

So far as the diaphragm is concerned, I confidently believe that the treatment of lacerations of the diaphragm and diaphragmatic herniæ will be greatly simplified, now that these can be attacked transpleurally without difficulty. In combined thoracic and abdominal injuries, for example a lung and liver wound, transpleural laparotomy should be the method of choice. Sauerbruch has had two successful cases treated by this plan. For infections of the liver and the subphrenic space the old method of thoracotomy, then stitching the diaphragm to the parietal pleura, and finally incising extrapleurally has not been improved upon.

This finishes a summary that I have tried to make both complete and accurate. I have purposely omitted all but the most passing references to technical details; I have avoided a discussion of incisions, drainage questions and the new instrumental armamentarium that has grown about this branch of surgery, as their consideration is of too special interest and would be out of place here. It is difficult to prophesy as to what the future will bring, but I feel that it will take many years of toil for thoracic surgery to attain the pinnacle that abdominal surgery has reached to-day. Perhaps it will never be attained. The organs of the thorax are of a different character than the abdominal viscera—they are of a more vital importance, physiologically, and of a more delicate mechanism. Then mechanical conditions are vastly more unsatisfactory. Beyond the shadow of a doubt great progress will be made, but from the very nature of things the possibilities of thoracic surgery will always be somewhat restricted. Nevertheless, as I have shown, much has already been accomplished in a comparatively short time, and much more will still be done. It is the duty of all of us to face the problems yet to be solved, not to be discouraged, nor deterred from further attempts by one, or even repeated failures, and to work with all our energies in striving to bring the surgical treatment of the diseases and injuries of the thorax to the highest possible state of perfection.

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## PUBLIC PROTECTION AGAINST MENTAL DEFECTIVES IN PARIS.

### THE WORKING OF THE SPECIAL INFIRMARY CONNECTED WITH THE POLICE DEPARTMENT.

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The Depot Special Infirmary of Paris is, in my estimation, the organization which solves, in the most practical and satisfactory manner, the problems of public protection against the unbalanced elements of society left at large principally because neither the medical profession nor the police authorities and the public have found the formula authorizing them to seclude the unbalanced and criminal-to-be, in order to take care of his condition, to guarantee him, and society as well, against the dangerous reaction of insanity. Paris, through the organization of her infirmary, and by allowing the people at large to be the judges of danger and to be in a very easy way in touch with the organization, has reduced to a minimum the number of crimes and suicides filling her chronicles every year. We must not forget that criminality is a contagion and that many times a wave of crime or suicide strikes a populated center simply because a few have started the example.

The subject necessarily involves us in many details of a dry and uninteresting nature which we must remark and study to appreciate fully the entire results obtained.

The special infirmary of the Depot has been organized to receive all patients afflicted with mental troubles who might be dangerous either to themselves or to the general public. When the doctor of the special infirmary has ascertained that an individual behaving in an extraordinary manner is ill, he sends him to the Clinical Asylum (also called Ste. Anne's Asylum). The depot infirmary is thus only a temporary resting place for patients, who as a rule make but very short stay there, since the authentication of mental troubles is sufficient to have them transferred to Ste. Anne's Asylum.

There occurs, however, some rare cases in which the special infirmary doctor thinks it advisable to keep the patient for a few days, either because he needs supplementary information on the circumstances which led to detention, or suspecting a simulation he wishes to be quite certain that the mental trouble is in reality existent. It is not necessary that all individuals suffering from mental derangement should pass through the special infirmary. For instance, take the three following examples of cases affected by trouble in connection with the domain of psychiatry.

1. When the family or friends notice a marked change in the character, intelligence, habits, or general behavior of a relative or friend, they can have him conveyed to the Clinical Asylum, where one of them has to sign the demand for admission and produce at the same time a certificate from a doctor who has examined the patient and concluded that he should be placed in a lunatic asylum. This is called voluntary confinement.

2. If a patient undergoing any kind of treatment in hospital shows symptoms of mental trouble, the head physician of the hospital makes out a certificate stating the condition of the mind of the patient and the necessity for his admission into a clinical asylum. The chief of the police of the district where the hospital is situated comes then, takes the case under his charge and proceeds with the formalities for his confinement.

3. Anyone creating a disturbance, either at his abode or in the street, and becoming a danger to himself or the public, may be sent to the depot special infirmary, in order to be examined by the doctor.

Of these three cases only the last has to deal with the special infirmary, but it is necessary to bring them into notice in order to show that it is only under certain circumstances that lunatics pass through the special infirmary.

We shall now study the organization of the depot special infirmary, and in order to facilitate this, we shall consider the patient before entering, then we will examine his sojourn there, and see what he has become on leaving it. Finally, we shall consider the transformations and improvements which could be brought about in the working of this establishment.

We shall then have to examine successively: (1) How and under what circumstances a patient is brought into the depot special infirmary. (2) The routine, the conditions of living, and the examination of the patient in this infirmary. (3) What becomes of the patients when leaving the special infirmary. (4) What are the alterations, transforma-

tions, or modifications that would be desirable for the improvement in its organization.

1. There are two conditions under which a patient afflicted with mental trouble can be taken into the depot special infirmary.

First.—A patient on whom a special examination has been made by the police officer, and whom it has been judged advisable to put under observation. This is the most frequent case.

Second.—A patient under treatment in an establishment belonging to the district of the Seine (such as hospital, workhouse, homes, etc.) showing signs of mental trouble during his residence. In these cases, as we shall see later, the doctor in attendance makes out a certificate which enables the police officer to send to the special infirmary. This case is much more rare, and we omitted to mention it in our introduction in order to simplify our subject.

Let us now consider each of these two cases.

1. In the case in which the police officer has made an examination. If the patient is dangerous to himself or to the public security, the police officer is notified. (*a*) If it happens in the patient's own house, then the parents, the neighbors, or the concierge go and inform the police officer. (*b*) If it happens in the public street, the policeman takes the patient to the police station in order to cause no more disturbance and to give the offender the necessary help.

In any case the police officer must make out the following report:

Police Office Dept.
District of the Seine
Ward
Office of District Police
5th division
5th office
.....Section
.....
Official Report concerning the person demented
.....
Urgent
For the Special Infirmary.

FRENCH REPUBLIC.

In the year Nineteen hundred.....
We.....
Police officer especially in charge of the district.... legal police officer auxiliary of the Attorney of the Republic....According to the article..... law of June the 30th, 1838, and the instructions of the circular of the Prefect of Police.
Etc., etc.....

In this official report the police officer gives particulars of his visit and the circumstances which led to it (complaints, letters, report of the police, etc.) then he states his inquiry on the spot, his examination, the statements and evidence received from the neighbors and family and from the concierge, then concludes with the necessity for having the patient taken to the special infirmary of the depot, that he may receive the requisite attentions. He dates his official report, signs it, and has it signed also by the people who gave evidence in his inquiry and the patient is then usually sent to the special infirmary, but not always, and for two reasons: (1) Physical condition of the lunatic may be bad, or (2) physical condition of the lunatic is satisfactory.

Bad Physical Condition of the Lunatic.—If it is a question either of organic injuries due to the progress of the mental illness itself, or of injuries that are self-inflicted (attempts at suicide by firearms, knife, drowning, poison, asphyxiation, jumping out of window, run over, self-mutilation, etc.) there is urgent necessity of giving medical or surgical help to the patient and this predominates over that required by the mental troubles. Under the conditions the police officer sends the patient directly to the hospital and when the more serious injuries have been attended to, then the head doctor makes out a certificate for sending the patient to the Clinical Asylum.

Satisfactory Physical Condition of the Lunatic.—When the police officer has finished his inquiry and written out his official report, he calls on the patient or sends for him to come to his office under some plausible pretext. Whatever may have been the means employed to secure the lunatic, he is conveyed by carriage to the depot special infirmary, accompanied by two inspectors of the police in civil clothes, furnished with the report of the police officer. The lunatic is immediately admitted into the infirmary on presentation of the document; then he is searched, deprived of any object which would be prejudicial to his security such as braces, necktie, handkerchief, belt, etc. We shall see later what becomes of the patient after admission into the special infirmary.

2. The case of a patient under cure in a provincial home. As we said before, the patients cured in ordinary general hospitals are not sent to the special infirmary when they give signs of unsound mind, but they are sent straight to the Clinical Asylum. However, when a patient is cured in a provincial home (such as Nanterre, Villers-Coterets, etc.) that is to say, out of Paris, it is managed in the following way: After the report of the head doctor stating the mental unsoundness and necessity of treatment in a special establishment, the police officer or the mayor of the town makes an inquiry on the spot, draws up a report, and sends the patient to the Special Infirmary or to the Clinical Asylum. In the end the method is the same as that for patients in hospitals, but while hospital patients in Paris are sent straight to the Clinical Asylum, those of the Provincial Homes are sent either to the Special Infirmary or to the Clinical Asylum.

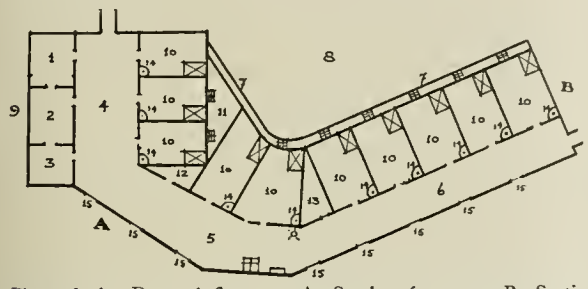
Having now seen how and under what circumstances the lunatic is sent to the Special Infirmary of the depot, we will proceed to investigate his sojourn in this infirmary.

*The Daily Life and the Examination of the Lunatic in the Special Infirmary of the Depot.*—As soon as the lunatic is admitted to the Depot Special Infirmary he is under the authority of the doctor and of the police. If the doctor recognizes the pathological character of the insanity which caused the arrest of the individual, he draws up a report in consequence of which the Prefect of Police takes the necessary measures for the admission of the patient to a lunatic asylum. If, on the contrary, it is a case of an individual who has simulated mental aberration to escape the tribunal, the doctor declares that there is not mental trouble and the culprit is sent to the depot to be brought to trial.

*Infirmary of the Depot; Arrangement of the Building and Rooms.*—In this connection we shall consider: (*a*) The building, the examination room for the patient, and cells. (*b*) The communication of the Special Infirmary with the outside and with other parts of the building. (*c*) Sleeping and feeding of the patients.

Building, Examination Rooms, Cells.—The depot special infirmary is situated in a part of the Prefecture of Police, a basement of the exterior court yard opposite the entrance at 3 Quai de l'Horloge. The building is of no architectural value and presents a sad and gloomy aspect, and being surrounded by the high walls of the other parts of the Palace of Justice, it gets but very little air and light; it is formed of two long corridors joining each other at right angles in front of the entrance. On entering there is on the right a corridor from which open a certain number of cells, destined for the men, and

those reserved for the women. In front is another corridor, on the right of which there are a series of cells for men and the left in succession, the room where archives are kept in which are registered the admission of all persons who have passed through the special infirmary, the doctor's room and the manager's office, the interne (assistant) guardian room is on the first floor. In order to give an idea of the arrangement of the building we have made out a plan which is not of absolute exactitude with regard to dimensions, but which will give a better idea than any written description.



Plan of the Depot Infirmary.—A, Section for men; B, Section for women; 1, Entrance office; 2, Doctors' office; 3, Records; 4, Corridor leading to depot; 5, Vestibule; 6, Corridor leading to section for women; 7, Fore-court; 8, Detention Courts; 9, Attendants' hall, 2nd floor; 10, Cells; 11, Court; 12, Storeroom; 13, Storeroom; 14, Water Closets; 15, Windows.

*Examination Room.*—The examination room in which the doctor visits the patients and makes out the certificates is of a rectangular form, and is rather large, as it has to accommodate, besides the doctors and their medical staff, certain other persons admitted to follow the consultations for the purpose of medical study and practice. This room contains everything that can possibly be required in a psychiatric examination.

*Cells.*—The cells are rectangular rooms, about 5 meters long, 3 large and 4 high. The cubic air contents is about 55 to 60 cubic meters. Each cell is lighted by a barred window with a penthouse outside and guillotine blind; they cannot be opened without the help of the overseer. These windows look out on a covered way which separates them from the prisoners' court where the vagabonds and other persons are kept, who are undergoing punishment or waiting for trial.

The cells contain no other furniture than a bed fixed into the wall with legs cemented into the floor. On the bed there is a rye straw mattress, a bolster of oats, and a sheet folded in two, all covered with a gray blanket like those used by soldiers. In a corner of the cell, near the door, there is a water-closet with automatic valve and provided with hydraulic ventilation for driving away ammoniacal emanations. In the summer chlorine is put in the basin. The walls are bare and painted a yellowish gray. The light is feeble, giving an impression of demi-obscurity.

Some of the cells are for raging lunatics. Then the walls are padded all around to the height of about 2 meters. In other respects there is nothing special in the arrangement and furnishing of these cells.

The Communication of the Special Infirmary with the Outside and with the Other Buildings.—As it is easy to see by the plan the special infirmary is in free communication with the outside world, that is to say, that anyone who wants to enter it for any reason has only to cross the gate of the Quai de l'Horloge and present himself at the infirmary. It is therefore easy to take there a patient who may be suspicious or one whose health would not suffer many comings and goings. Moreover access to the infirmary is facilitated for all daily service of the staff in attendance. The special infirmary communicates with the other buildings by means of the doors at the ends of the corridors. These doors enable persons showing mental trouble to be brought to the depot or those having simulated madness to be sent away from it after medical examinations, thus simplifying the removal of patients from one service to another and preventing useless journeys.

Sleeping and Feeding of Patients.—We spoke about the bedding when describing the cells. If the patient is capable he is obliged to make his bed, but if not, the ward nurse is obliged to clean the cell and make the bed. The food is very simple. At 9 o'clock in the morning the patient gets a loaf of bread (about 800 gr.) which has to last him for the whole day, and some soup; this soup, which is given through the wicket, is served in an enameled iron bowl the spoon is wooden; no glass, plate, fork, knife, or other article whatever is allowed. The patient can eat on his bed or standing up. At half past four they have again soup and a piece of meat weighing about 80 gr. Prisoners for trial have meat only twice a week, Thursday and Sunday, but the lunatics, although they have the same food as the prisoners, benefit by the daily meat diet. Moreover, the doctor can permit the patient's family to send him a more abundant and healthy food. The patient is also allowed, if he has the means, to have his meal brought in; of course, wines and spirits are expressly prohibited; water or tisane to drink are provided.

*Medical Staff.*—The medical staff is composed of a head doctor, an assistant doctor, a second assistant doctor to take the place of either of the other doctors when on leave or obligatory absence, two house doctors, these belonging to the lunatic asylum of the Department of the Seine they assure the medical service day and night, serving alternately; they have to examine and take notes on each new case brought in and make their report to the doctor on service either that day or the day after.

*Administration Staff.*—The administrative service of the depot special infirmary is in two parts. One is for the special care of the lunatic, and resides in the infirmary itself; the other looks after the administration and judicial position of the lunatic and resides in the office of the Prefecture of Police. The staff which has to deal with the lunatic is composed of four men and five women assistants. They must be of good morality and enough experience to be able to look after them properly. The staff which has to deal with the administrative and judicial situation of the lunatic has nothing to do with the patients. They have only to receive and put together all the official reports of the police officers and the medical certificates, together with orders of arrest, based on them and given by the Prefect of Police. It is a purely administrative work having nothing to do with the care given to the patients. This staff constitutes the fifth bureau of the first division.

*The Stay of the Patient in the Special Infirmary.*—Arrival of the patient at the infirmary.—The patients arriving from the police offices and brought to the special infirmary are put into the hands of the *overseer* who, after having read the official report, makes the patients undress, examines them very carefully, and writes on a special book if they find any ecchymoses, wounds, or any other sign of traumatism on their skin. Their clothes are

searched to ascertain if they have any weapons, either offensive or defensive, hidden about them, their jewels taken away and deposited in the clerk's office, and lastly they take away from their clothes everything that could be used for making straps, cords, etc., which might be employed for committing suicide either by hanging or strangling.

Then the patient is dressed again in his own clothes and taken to the cell which he is to occupy. From this moment all his movements will be watched, his abnormal actions, his delirium, his agitation, his sleeplessness are registered in order that the doctor may know exactly the state and the reactions of the patient in his new situation. If his agitation is very intense then the straightjacket is used in order to prevent the organic exhaustion produced by his unregular, incessant movements, and also to prevent him from voluntarily or involuntarily wounding himself. Sometimes it is necessary to tie the patient to his bed to keep him lying down. Lastly in urgent cases the assistant on duty can administer a chloral or give him an injection of morphine.

The patient is almost always alone in his cell, although constantly watched through a wicket in the door, by the attendant; the wicket remains closed when the patient does not require constant supervision.

Patients are admitted at any time of the day, but as a rule they are sent in about 5 P.M. from the police station. For instance, if a drunkard is arrested for causing disturbance in the street he is kept at the police station until he gets sober, but at 5 o'clock, if he is delirious or talks incoherently, he is sent to the special infirmary. It is very seldom that two or three patients are put together in the same cell, then only for want of room, but if this should be necessary it is done on the doctor's advice only and the patients chosen are only those who are calm.

*Visiting and Examination of the Patient.*—Patients are examined twice a day, viz., at 11 A.M. and at 3 P.M. A list of the names of the newcomers is presented to the doctor on his arrival; also a registered report on each of them. Previous search has been made in the archives of the infirmary to ascertain if the patient has ever been brought in before and if so, how often. In the later case the reports on this patient are sent for from the fifth Bureau of the Prefecture of Police. All these documents are submitted to the doctor who finds in them necessary and valuable information for helping him to make out his certificate. It happens that patients are brought in without having been identified by the Commissary of Police through having been struck with amnesia and therefore lost all remembrance of their name and address.

These patients are temporarily classified as "unknown" and their photograph is joined to each of their reports until their identification. The patient is taken to the doctor's office by one or two of the wardens of the infirmary and they assist the patients during their examination and interrogation.

The doctor's examination may present three different cases: 1. The case of individuals having lawsuits, simulating madness in order to avoid prison. If this is found out the doctor makes a special report and the individual is transferred to prison. 2. The case of individuals having had slight passing mental troubles, drunken, epilepsy, etc., which have left no consequences behind, and who have perfectly recovered the normal sense at the moment of their examination. Under these circumstances the doctor can follow one of the three following courses:

(*a*) If the individual can prove his means of earning a livelihood and has committed no crime he is set free at once without any other formality than the medical certificate.

(*b*) If the individual has only had a passing mental attack and is a pauper, the doctor proposes his admission to the Provincial Home at Nanterre, making the demand at the Third Bureau. This is a humanitarian measure for putting the patient out of danger of misery and want and sparing him from law proceedings which might be taken against him for vagrancy or horseplay while under the influence of drink.

(*c*) If at the examination the patient is no longer suffering from mental trouble, but has committed an offense while not in the full possession of his intellectual faculties, he is set free under the threat of law proceedings which may be taken against him for damage which he may have done to certain persons.

When the doctor has to deal with a lunatic two courses are open: (*a*) A patient may show mental trouble, on the nature of which the doctor cannot form a decided opinion; he will then keep him for several days under observation in the special infirmary for reexamination; thus it sometimes happens that a patient has to be kept several days at the special infirmary for the doctor to be absolutely sure about his case.

(*b*) When the psychiatric diagnosis is evident the doctor immediately makes out his certificate and the lunatic ward at the Prefecture of Police sends the patient to the asylum. Of course the doctor of the infirmary has at his disposal every means of clinical investigation which can help him to form his diagnosis as rapidly as possible.

(*c*) Drawing up of the certificate. The doctor's certificates are simply medical aand treat only of the mental troubles of the patient, while the official report of the Commissary of Police treats of the danger that the patient may be to himself and to his neighbors. When the diagnosis is certain the doctor states it, giving the enumeration of the principal symptoms and mentioning at the same time any physical troubles. When the diagnosis is uncertain the doctor gives only a description of the principal symptoms and the medical legal reactions shown by the patient before his entrance or during his stay in the infirmary.

(*d*) Duplicate of the certificate. This expression signifies the order of confinement given by the Prefect of Police, which is based on the certificate made out by the doctor of the depot special infirmary. The medical certificate is given to the infirmary to be copied and entered in the register.

There are two kinds of duplicates. The first is the confinement by order of a lunatic who has been sent to the depot special infirmary in consequence of a report made by the Commissary of Police; this is the most usual as it concerns almost all lunatics.

The second is the confinement by order of a lunatic in hospital or in prison and showing mental trouble. These two duplicates are shown on the following page. They are taken to the Prefecture of Police 5th, First Division, there they are signed by the chief of the office in the name of the Prefect of Police and brought back to the special infirmary, where they will accompany the patients until they leave the infirmary.

FRENCH REPUBLIC

Prefecture of Police
1st Division
5th Bureau
.....
1st Section
No. .....
Order of Confinement of a lunatic
.....
Imprisonment by order
Duplicate of Certificate

Lunatic Service
.....
Paris....(Date)

We Prefect of Police..... under the article 18th of the law of June 30th, 1838, under official report of the ..... made by the Commissary of Police of the ..... concerning ..... born ..... at ..... exercising the profession of ..... and living ..... who was sent to..... the same day to the special Infirmary of lunatics.

In view of the certificate delivered this day by the Dr. ..... in charge of the special Infirmary which certifies that the person named is struck by ..... ..... and consequently in a state of mental aberration that is dangerous to public order or to the safety of others and renders his confinement in an asylum necessary.

We order

The Director of the asylum of Ste. Anne to admit in his establishment surnamed to be treated for the mental trouble from which he is suffering ..... and to keep him there until our further order.

The Prefect of Police.

Signed:

For Duplicate of Urgency
The Chief of the Fifth Bureau

Patient confined for the ..... Time in an asylum of the Seine.

FRENCH REPUBLIC

Prefecture of Police
1st Div.
5th Bureau
1st Section
No.
.....
Confinement by order of a lunatic
.....
Hospitalized or imprisoned
.....
Duplicate

LUNATIC SERVICE

Paris/ the ..... 19— in view of the information received the ..... ..... concerning ..... born ..... exercising the profession of ..... ..... living lately Rue ..... where he was confined (or imprisoned) and who has been transferred to the depot special infirmary of this Prefecture of Police in consequence of his mental state.

In view of the certificate delivered this day by Dr. ..... ..... of the surnamed infirmary from which it results that he is suffering ..... ..... and that consequently he is in a state of mental aberration compromising the public order and safety of others and renders his confinement in an asylum necessary. Under the article 18 of the law of June 30th, 188— we order the Director of the asylum of Ste. Anne to admit in his establishment ..... ..... to be treated for the mental trouble from which he is suffering and to keep him there until further order.

The Prefect of Police

Signed:

For Duplicate of Urgency
The Chief of the 5th Bureau

Legal standing of the patient
.....
Lunatic confined for the ..... time in the asylum of the Seine.
Number of matricule of his last confinement.

*Division of Patients when Leaving the Depot Special Infirmary.*—After the medical examination and the consequent administrative formalities, the situation of the patient is arranged in the following way: (*a*) If it is a case of madness he is sent to a special establishment. (*b*) If it is a case of transient mental trouble he is set free. (*c*) If it is a case of simulation he is either set free or sent to prison, according to circumstances.

Let us examine in detail these three cases:

If it is a madman two courses are possible. When the patient is poor he is sent to Ste. Anne Clinical Asylum. As the infirmary doctor has examined these patients either in the morning or in the afternoon and sent them away in the evening, their stay in the infirmary is consequently for a few hours. Exception, however, is made for doubtful cases, simulated cases, or second offenses, which require a longer time for observation, but in no case are they kept for more than two or three days. Patients are transferred to Ste. Anne between 7 and 8 o'clock P.M. The administration looks after the transport. The conveyance is divided into eight compartments 1 m. 40 in. height, 0/60 wide and 0, 80 centimeters deep, lined with leather on three sides. The fourth side is a looking-glass covered with a solid wire netting to prevent the patient from breaking it. There is a fixed seat for the patient to sit on and owing to the low height he could not stand. Patients are locked into these cells by a safety lock and two bolts and carried in this way to the clinical asylum under the responsible care of the transport warder. Once admitted into Ste. Anne they have no longer anything to do with the depot special infirmary, but are in the keeping of lunatic asylum and the Prefecture of Police.

In the case of a well-to-do patient the family can ask permission of the doctor of the special infirmary to send the patient to a private hospital, which is always granted. The certificate of the infirmary doctor is sent to the Prefecture of Police, who has the man transferred to the place chosen by the family. Although in a private hospital the patient is always under the superintendence of the police and cannot get out without their consent. The transfer of the patient from the infirmary to the private home is always made by the administration and under its responsibility. If no demand has been made by the family the well-off patient is sent to the common asylum, although all his expenses are claimed from his family.

*Transient Mental Derangement.*—In this case the patient is set free after having received the necessary care, but it may happen that, owing to his mental state the patient may have lost his means of livelihood and then he is sent to the Departmental Home at Nanterre, where he is provided with work. When he has gathered together a little money he can leave the house and try his chance of having work outside.

*Cases of Simulated Madness.*—If it is found out that the individual tried to be put in confinement in order to get a shelter from starvation, he is severely reprimanded and then set free. If, on the contrary, an individual arrested for whatever reason has tried to simulate madness in order to avoid the punishment of his fault, he is sent to the depot; two things may happen: The individual has simulated mental trouble after his arrest. In this case he is sent back to the depot or prison where he was awaiting trial and the law proceedings continue against him. The individual simulates mental trou-

bles after having committed a crime outside. He is examined by special infirmary doctor, convicted of simulation, and transferred to the depot.

*Conclusion.*—From the study of all this we may conclude that the working of the special infirmary of the Prefecture of Police is good. Its manner of carrying out the work may seem complicated at first sight, but its regularity is, nevertheless, simplified by the fact that all these various formalities are executed almost automatically. The institution and the organization of this infirmary facilitate the prompt admission to it of all dangerous people on account of mental derangement; its proximity to the depot facilities, the transfer to that building of simulators, and of all those under police investigation, who, during their detention have shown mental troubles. The only points it would be desirable of bringing to a state of greater perfection concern rather the daily working of the infirmary than the institution itself. It would be a great advantage if these old buildings could be better ventilated and that the hygienic rules for the patients should be more strict. In few words: Better ventilation, more hygiene, more cleanliness, and better food. With the exception of these small details and speaking generally we are right in saying that the work of the depot special infirmary is good and its institutions supply a real need in a large city like Paris.

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## HODGKIN'S DISEASE.*

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When there are painless progressive lymphatic enlargements in many parts of the body, often with enlargements of the spleen and sometimes of the liver, with the blood showing no marked alteration, save more or less anemia, we call the affection Hodgkin's disease.

Glandular swellings in various parts of the body had long been noted by clinicians but to Hodgkin, the pathologist of Guy's Hospital, who in 1832 published in the "Transactions of the Royal Medical and Chirurgical Society" a series of cases of enlargement of the lymphatic glands and spleen, do we owe the first accurate clinical description of this disease; but it was not generally accepted as an entity until Wilks, in 1865, described a number of cases and spoke of the affection as Hodgkin's disease. Virchow, Cohnheim, and later Billroth and Trousseau had written of the similarity of the disease to leukemia, even before the announcement of Wilks, and pointed out the essential factors of difference. Even as early as 1828 Craigie described the nature of the glandular change. It was Bonfils of France and Wilks of England in 1856, who, being unaware of the researches of Hodgkin in 1832, published simultaneously and independently a series of cases similar to those described by Hodgkin; and Wilks, then connected with Guy's Hospital, exhibited unknowingly with his own cases specimens from Guy's museum which he later found had been collected by Hodgkin.

*Etiology.*—The factor causing Hodgkin's disease is for all purposes of a clear conception, as much unknown to-day as in the time of Hodgkin. It is seen and accepted that certain conditions and diseases seem to predispose strongly toward the development of the lymphatic enlargements. Some of the patients who have developed Hodgkin's disease, had recently had some acute infectious disease, as measles or scarlet fever, or had suffered much with tonsillitis or nasopharyngeal catarrh.

The disease is much more common in the male than in the female, the proportion being as three or four to one; it occurs more in the young, the age ten to thirty covering most of the cases; those under ten years would represent, according to Longscope, one-fifth of the cases; it is found in all countries and in all climates, but seldom develops in the negro.

*Morbid Anatomy.*—A definite picture can be given of the morbid processes of the disease and although the growth may take on a different appearance and morphologically undergo changes from a secondary infection, still the early reticular changes in the endothelium of the gland, with its distinct capsulation and its always lymphadenoid character, and if metastatic, of glandular growth, keep it within a correlation which entitles it to a description of its own.

*Blood changes* are not many or marked. There is generally an anemia, which is represented in a decrease in the red corpuscular count; the hemoglobin falls, and in the later stages there may be some polynuclear leucocytosis.

*Symptoms.*—The disease as a rule begins with very slight manifestations of any kind. What brings the case under observation is generally the enlarged masses situated on one or both sides of the neck, oftenest in the cervical region, and with these enlargements there may or may not be some ill health; the patient may complain of fatigue, fever and general malaise.

On examination, nodular growths are found on the side of the neck, in the axillary and inguinal regions and in the breasts of the female; the spleen, liver, kidneys and thyroid may be enlarged, and later progress of the disease may indicate the involvement of the retroperitoneal and the mediastinal glands. The pressure from the nodular growths leads to much disfigurement, great embarrassment in breathing, difficulty in hearing and swallowing, bronzing of the skin and neuralgic pains, all incident to an encroachment by the extensive hyperplasia of the lymphoid tissue. The patient becomes progressively anemic, develops fever, sometimes jaundice, and ascites; the dyspnea often becomes very marked and exhausting, and the patient steadily and surely fails.

*Case History.*—B. M., aged 48, Russian, married, had measles and smallpox; up to 21 had good health; then had much gastric and intestinal trouble with vomiting and after some months was treated for tapeworm, of which she was relieved. Between the ages 24 and 41 had nine children and four miscarriages. Menstruation at 14 and ceased at 46. Has suffered for past four years with pains in joints and complains of ear, nose and throat troubles. Is constipated and has palpitation of the heart, and says she has lost weight and is very weak. Her mother is living and is in good health—aged 68; her father died at 63. The glandular enlargements have been present since seven years and have been increasing more the last year.

The pulse is 90, temperature, 98.7 deg.; the patient seems older than her years, is anemic, restless,

*Read before the Medical and Surgical Society of Washington, D. C., December 5, 1912.

continually snorting and clearing her throat; is somewhat deaf and her throat shows partial occlusion of nasopharynx and obliteration of left palatine arch; a swelling the size of large pear is seen beneath and extending backward and downward from the left ear toward the thyroid and thymus glands; it is very tense in portions and has lines of partition; there is another swelling, the size of a walnut, under and back of the right ear; there is a small nodule in the right breast and a movable mass, the size of the kidney, to the right of the umbilicus; the inguinal glands are also enlarged. In her chest and heart nothing of importance is discovered; the liver and spleen are not enlarged. A radiograph shows a tumor mass in the right abdomen, but the shadow cast is not sufficient to be outlined. Uranalysis is negative; Wassermann reaction, single positive; tuberculin reaction, negative; leucocytes, 8.950; differential count: lymphocytes 14, large mononuclear 18, polymorphonuclear 68; erythrocytes, 4,840,000; hemoglobin, 85 per cent.

The *prognosis* is most unfavorable. The glandular swellings may remain stationary for years and then, for some unknown reason often following tonsillitis or some infection, may suddenly and rapidly enlarge.

Hodgkin's Disease.

The *diagnosis* is often difficult unless a complete history of the case is known and a blood examination with a histological examination of the tissue growth is made. Longscope, Simmons, and others have confirmed the findings of Dorothy Reed and placed Hodgkin's disease on a definite histological basis. Reed has shown the proliferation of the endothelial cells and excess of lymphocytes filling the lymph sinuses and later excess of fibrous tissue.

Lymphosarcoma, tuberculosis, syphilis, lymphatic leukemia are often confusing, unless every point is weighed in considering our diagnosis. The course of lymphosarcoma is more rapid and more painful, tends to involve surrounding tissues and to have metastases; the glands show infiltrating fat lobules with numerous round cells, and there is a lymphocytosis in the blood. Splenic anemia is like Hodgkin's disease only in the enlarged spleen and the few blood changes. There is a constant tendency to hemorrhage, especially gastrointestinal, and the lymph glands are never enlarged. On the examination of the blood would rest principally the diagnosis of lymphatic leukemia; in both we may have enlargement of the spleen and lymphatics, but the spleen in leukemia is much larger, and there is a well marked leucocytosis. Tuberculous glands are generally submaxillary, and do not as frequently involve both sides of the neck; they have, as does lymphosarcoma, more tendency to break down and ulcerate; if physical signs are lacking, tuberculin should be tried, or a section of one of the glands made, which would show minute tubercles. The course of syphilitic glands is not so protracted; they have a tendency to grow smaller, and treatment would establish the diagnosis; a Wassermann or luetin test could be made.

*Treatment.*—Permanent improvement, either from surgery or medicine cannot be looked for. The complete removal of the glands or their enucleation is invariably followed by recurrence, either at the former site or in some other region. The giving of arsenic in gradually increasing doses, as recommended by Nélaton and endorsed in the writings of Billroth, is still the practice of to-day, and is one of the very few remedies showing any actual benefit. The *x*-rays should always be tried, as they reduce the swelling and retard new developments; unfortunately on cessation of the treatment the growths recur and treatment has to be again instituted.

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## SCARLET FEVER; IS THE DESQUAMATORY STAGE CONTAGIOUS?

By FRANCIS H. MEAD, M.D., M.R.C.S., Eng.

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About two years ago I was asked to look over the children in one of the public schools in the city of San Diego for a suspected case of scarlet fever. There were a few cases in the city at the time and public attention had been called to the matter. I found a little girl, the child of Christian Scientist parents, in the acute stage of primary desquamation, in which stage she had been at school for five days. I took her to her home and interviewed the parents. No physician had previously seen the child. She had had a fine scarlet rash some two weeks previously and a sore throat and the parents "thought she had possibly had scarlet fever." The schoolroom was carefully fumigated, her desk treated, her books and school paraphernalia removed and burnt. I expected an outbreak among the pupils of the school. Not a single case developed.

A year later I found a Mexican child in another school in almost similar conditions. She had been kept at home for the sore throat and rash, sent to school without any physician having seen her when the desquamation was beginning. Similar precautions were taken. Again, not a single case developed.

It is, of course, out of one's power to experiment with cases, but I subsequently allowed a child under my care to circulate freely among the members of his family, many of whom were children, while in the primary desquamating stage, and to go out, greatly to the indignation of his neighbors. He was not allowed to come in direct contact with other children outside, as far as I am aware. There was no further infection in the home or outside.

There is no doubt that of recent years opinions of the infectiousness of the desquamative stage of

scarlet fever have been undergoing a change. In the article on Scarlet Fever, by Dr. J. H. McCollom in Osler's second volume, there are the following remarks: "The length of time that a patient ill with scarlet fever should be isolated has been the subject of careful study. Some physicians go so far as to say that the desquamation is not infectious, but that the contagium of scarlet fever is in the discharge from the mucous membranes. This is a little too radical an opinion, and is not in accordance with clinical experience. There is no doubt that during the active stage of primary desquamation scarlet fever is infectious. There is very grave doubt if the secondary desquamation is infectious." The English statistics subsequently given in the same article report that in 204 cases of discharge from hospital with "peeling without complication," only two gave return cases. This is an extraordinarily small percentage; 2.7 per cent. of return cases from desquamation is the highest which the English observer, Dr. Simpson, can attain.

To quote from Dr. Chapin's extremely interesting recent work on "The Sources and Modes of Infection": "Most of the disease in other families develops within a few days of the primary case, and is doubtless due to contact infection before the disease is recognized. Between the end of the second week and the termination of the isolation the disease extends to other families in the house in only 0.6 per cent. of the cases, and in most of these it is known that *isolation is not carried out*, and that there is free intercourse between the families." My experience with the cases cited, which exhibited no other lesions except the desquamation when I found them, bears out Chapin's subsequent remark.

"In Providence scarlet fever cases are usually sent home from the hospital in four or five weeks if free from nose and ear discharge. No regard need be paid to desquamation as the experience of English hospitals has shown that no danger is to be feared from that source."

As a means of consulting the highest authority we have on contagious diseases, I laid the subject before the surgeon-general of the U. S. Marine-Hospital Service. The following reply was sent me: "This bureau has no knowledge of any experiments establishing in a definitive manner the contagiousness or non-contagiousness of the scales of desquamation present in cases of scarlet fever. A review of the literature seems to reveal a tendency towards considering them as innocuous. In the absence of definite information on the subject there is a reluctance on the part of health officers to abandon the old quarantine methods based on the disappearance of desquamation. The following statements taken from recent writers may prove of interest: 'It appears from our present knowledge that scarlet fever is a disease that is transmitted by contact and not by fomites; that the scales of desquamation play very little, if any part, in the transmission of contagion, the chief danger lying in the buccal, nasal, and aural secretions; and that the release of each case should be decided upon its merits.' Curtis, p. 428, *Journal, American Public Health Association,* June, 1911.

" 'At present there is a tendency to believe that the scales do not possess great power of transmitting the disease during all stages of desquamation, and especially toward the termination of that process. On the other hand, it has not been proved that the scales are innocuous, or that they become so at any period of the stage of desquamation. Consequently it becomes of great importance to control the dissemination of these scales.'—p. 668, *Journal, American Medical Association,* March 4, 1911.

" 'I am free to confess that I believe in the contagiousness of scarlet fever by means of desquamation, although I consider this source far less dangerous than the discharge from the nose, throat, and ear, or the acute skin eruption. . . . And if the scales themselves do not contain the offending agent, who can vouch in any given case that they have not been contaminated by the virulent and tenacious "germs" containing the discharge from the mouth, nose, and ears?'—Sobel, p. 657, *New York Medical Journal,* October 1, 1910.

" 'The consensus of opinion now is that the exanthem and exfoliation are due to a toxin and that the unfoliated epidermis is probably not infectious. In English hospitals, by paying attention to the care of the mucous surfaces and neglecting the desquamation, the percentage of return cases was reduced from 4.27 per cent. in 1902 to 2.15 per cent. in 1903. The period of detention was shortened from 48 to 34 days.'—Schauman, p. 1338, *New York Medical Journal,* June 25, 1910.

" 'While we have no definite knowledge, so far as bacteriology is concerned, regarding the infectiousness of the desquamative stage, there is abundant clinical proof that the epidemic scales have the power of communicating disease.'—p. 360, Vol. II, Osler's Modern Medicine.

" 'The doubt as to the contagiousness of desquamating epithelium is becoming more generally entertained. Scarlet fever is not only contagious before desquamation begins, but not infrequently after it has completely terminated. It is obvious, therefore, that the infection must reside somewhere in the body apart from the cutaneous surface.'—p. 356, Welch & Schamberg's Acute Contagious Diseases.

"It is hoped that this information may prove satisfactory."

To summarize my own opinion on the matter statistics show that only in a very small percentage of cases, secondary cases of scarlet fever arise from exposure to desquamation. Only a comparatively infinitesimal number of cases thus exposed catch the disease. Where the very few cases have developed from desquamation it is probable that the desquamation was infected from discharges from the nose, throat, or ears. We have not an official statement of quarantine for various diseases. The old-fashioned quarantine for scarlet fever, however, should go, and with no nasal, aural, or buccal complications, and no kidney involvement the time of quarantine for an ordinary case will be cut down to 28 or 30 days.

Union Building.

## THE ASSOCIATED OUT-PATIENTS CLINICS OF THE CITY OF NEW YORK—A SOCIAL FORCE.

By E. H. LEWINSKI-CORWIN, Ph.D.,

NEW YORK.

Ours is the age of getting together and of team work. Great combines of all descriptions, trusts, syndicates, pools, gentlemen's agreements, trade and labor unions, farmers' associations, consumers' leagues, city, State, national, and international soci-

eties, bear sufficient testimony to the fact that the trend of modern life is toward integration and concentration. It is a process of evolution, in the Spencerian sense, and of simple evolution at that, for the intensity of the forces which produce it is so great as to prohibit much differentiation of the resultant aggregate. Hence, justifiable fear of it lest it destroy independence and individual initiative, the precious products of competition.

This fear may also be the reason why two phases of our social life, higher education and charity, drag so far behind the general movement towards combination or cooperation. Personal equation; philanthropic pride; personal, sectional, denominational, religious, or racial ambitions are probably contributory causes of no mean importance.

Of all forms of charity, medical charity seems to be in the most rampant individualistic state. The individualism of philanthropists is in this instance strengthened by the rivalries of the members of the medical fraternity and the medical schools. The existing competition among the hospitals, although wasteful at times, undoubtedly had many beneficent results, absolutely non-existent in the case of dispensaries, which are regarded as step children of the hospitals or to borrow a phrase from the industrial world, as by-products of much inferior value.

*Lack of Recognition of Dispensary Possibilities.*—The dispensary is almost invariably looked upon by the Boards of Managers as the Cinderella of the hospital household. It is rarely well equipped and never cared for very properly and always expected to be self-supporting. Recently one of the hospitals of the city pointed out with pride that its dispensary is not only self-supporting but has made so many thousands of dollars of profit for the hospital. Why such an attitude should prevail it is hard to understand. Obviously not much faith is placed in the efficacy of medical treatment at the dispensary and no recognition is made of the great possibilities of the dispensary in preventive medicine and in public health movement.

*The Dispensary Shortcomings.*—As a consequence low standards of therapeutics and administration were allowed to prevail with great harm to all concerned; the indigent sick, the physicians and public welfare.

The abuse of the dispensary by those who by reason of their economic status are not entitled to gratuitous treatment is an evil of long standing. In December, 1877, the New York State Board of Charities appointed a special committee "to consider and report upon the best means of preventing these abuses."[1] The Committee reported the next year, recommending that a close attention to the rule of geographical limits is most necessary and that it is desirable that the several dispensaries should act in harmony and that by "occasional conferences many of the minor abuses to which medical charities are peculiarly exposed would be most conveniently remedied."

Present conditions are not very different from those of 1877, despite the fact that since 1899 we have on our statute books a law which makes false representation by dispensary applicants a misdemeanor punishable by fine, and in the opinion of the State Board of Charities the law has already accomplished almost all that can be expected of it in this matter. As a result of this as well as the fact that the dispensary clientèle is drawn from all over town the overcrowding in most of the dispensaries is rendering efficient treatment impossible. In a neurological clinic of one of the dispensaries it was figured out that, granting that all of the physicians were on duty for fully two hours daily, that no time was lost, whatsoever, that no two physicians attended one case at the same time, etc., the amount of time given to each patient, under these ideal conditions, was a little over one minute. There is no need to speak of the value of medical work to the patient and to the average physician under such circumstances. If it be added that modern scientific equipment is lacking in very many of the dispensaries and that the physicians are unpaid in a majority of them; that social investigation and follow-up work are almost untried because of its great cost under the present system, or rather lack of any system; that home visiting is practiced on a small scale; we will have a faint picture of the dispensary problem, which urgently calls for an immediate and satisfactory solution and is equally pressing in this city as in every other large city of the country.

The Chicago Medical Society, in a special report issued November, 1910, states the problem in the following series of questions:

"Are the sick poor obtaining really efficient service? Is the system accomplishing its purpose?

"Are there conditions involved in the system which necessarily impair its efficiency? Is it conducted economically, or can important financial economies be brought about, and the service thus be improved?

"Are we in this unsupervised charity work, carelessly building a vaster and vaster pauperizing institution, already in the present and especially destined in the future, to necessarily abort by its enormity and unwieldiness all efficient efforts at caring for the really deserving?

"Is the burden already placed on the medical profession, not to speak of its marked tendency to increase, too heavy for its cheerful and efficient bearing? Is the economic imposition by patients not entitled to free service causing widespread lack of confidence on the part of physicians in the system, and thereby undermining the efficiency of the service? Who should be treated free and who should not? And, in general, how can an efficient service be best conducted and conserved?

"Does it pay, from the humanitarian, scientific, or social-economic standpoint, to spend time, skill, and money on patients whose home surroundings are bound to cause or prolong the disease which we are trying in vain to eradicate by our medical charity? Can general social service methods, for example, home nursing and home helping, be employed more widely as an intrinsic feature of this great charity system, capable of modifying the hygienic and mental and moral conditions which stand between the patient and recovery?"[2]

*Remedies Suggested.*—The problem, as we see, has very many bearings: social, charitable, administrative, ethical, therapeutic, educational, economic, and financial. The field of the dispensary has to be enlarged, higher standards of medical work established, the administration made more efficient, its resources greatly amplified, the principle of restricted numbers and of district lines adopted,[3] the unworthy applicants eliminated,[4] physicians recompensed, treatment carried to the home of patients unable to come to the dispensary, a study of the home surroundings made, social guidance and instructions in hygiene given. The latter may prove to be a great help in dispensary as well as public health work. Dr. Richard C. Cabot found that 41

per cent. of the patients of the Massachusetts General Hospital Dispensary suffered from functional disorders, therefore curable if the cause could be removed. Whether digestive disturbances are due to ignorance of proper diet or cooking or neurasthenia, to overcrowding, bad industrial conditions, etc., cannot be brought to light from an examination under ordinary dispensary conditions.[5]

What can be done in this and other directions has been shown by the Massachusetts General Hospital Dispensary,[6] the Boston Dispensary,[7] and the Association of Tuberculosis Clinics of the City of New York.[8]

*Organization of the Associated Out-Patient Clinics.*—Realizing that the proper solution of the problem can only be made by those responsible for the management of the dispensaries, the Public Health, Hospital and Budget Committee of the New York Academy of Medicine suggested that an association of dispensaries be formed, which would study the elements involved and devise remedies for existing evils. At the meeting called by the Committee in February, 1912, at which twenty-six dispensaries were officially represented, a resolution was passed to appoint a temporary committee to organize the Association. Its organization took place in December of last year with a membership of thirty-two of the most important dispensaries of Manhattan, the organization being temporarily limited to that borough.

*Aims of the Association.*—The aims of the Association are fourfold: (1) The coordination of the work of existing dispensaries and out-patient clinics. (2) The elimination of unworthy applicants for treatment. (3) The promotion of proper standards of treatment. (4) The promotion of economy and efficiency in dispensary management.

As a means for the accomplishment of these ends the Association will first direct its attention to the following objects:

1. The Coordination of the Work of Existing Dispensaries and Out-Patient Clinics. (*a*) The study of the home distribution or residential sources of cases now treated in the clinics of the Association. (*b*) The formation of a plan for the district limitation of the work of those departments of general dispensaries which are organized for home treatment, district visiting, or social service. (*c*) The consideration of the status in the Association of special dispensaries, meaning thereby those dispensaries whose practice is limited to the treatment of certain classes of cases, such as orthopedic dispensaries, eye and ear dispensaries, babies' dispensaries, etc., and also the clinics which are directly affiliated with undergraduate or post-graduate medical schools.

2. The Elimination of Unworthy Applicants for Treatment. (*a*) An inquiry into the methods of investigation and elimination now or heretofore followed by members of the Association and a statement of the results of such methods. (*b*) An inquiry into the practicability of establishing a central bureau of investigation and registration, either in common with existing charitable relief societies or in cooperation with such societies. (*c*) An inquiry into the practicability of the limitation of dispensary treatment, except in emergency cases, to individuals whose circumstances have been previously investigated, and who are registered as suitable subjects for free medical relief. (*d*) An examination of the merits and defects of the existing dispensary law. (*e*) In the absence of a central bureau of investigation and registration, a study of the practicability of establishing in the clinics of the association uniform methods of inquiry into the social and financial status of patients.

3. The Promotion of Proper Standards in Treatment. (*a*) A study of the principle of the limitation of numbers in dispensary practice. (*b*) The formulation of guiding rules to be followed in the limitation of the number of patients in individual departments. (*c*) An inquiry into the need for additional therapeutic equipment. (*d*) The study of the relative need of home visiting and of social service in the different departments of a general dispensary, with a view to the encouragement of development of such work along the lines of greatest immediate need and benefit. (*e*) A study of the number of physicians required and of the hours of service demanded to conduct properly the dispensary work of the city. (*f*) Cooperation with the State Board of Charities, and with the Department of Health in the promotion of proper hygienic standards in out-patient clinics.

4. The Promotion of Economy and Efficiency in Dispensary Management. (*a*) A study of the unit of cost in dispensary treatment. (*b*) A comparison of the results of unpaid and of paid medical work in the clinics of the Association. (*c*) A study of the methods of ordering and filling prescriptions, of the relation between cost of service and dispensary payments, including a consideration of the principle of the nominal dispensary fee. (*d*) An inquiry into the need of additional departments in out-patient clinics.

*Constitution.*—The Constitution does not bind any member by rigid laws. Every dispensary of the city may become a member of the Association and be represented by a delegate. Each member pledges itself to endeavor to conform to such rules and recommendations as may be adopted by the Association. If, however, the application of any rule or recommendation shall prove impracticable in the administration of a given clinic, an explanation of the facts may be presented in writing to the Association at the first opportunity and the acceptance and filing of such explanatory statement by the Association shall be deemed to be equivalent to the granting of an exception to the rule in favor of the clinic in question.

It is expected that before long the Association will embrace all the clinics of the city and with their full cooperation it will be able to apply practically many of its ideals.

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# INDICANURIA AND THE PHOSPHATES.

By JOHN C. WARBRICK, M.A., M.D., M.S.,

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On account of the variation in the amount of urinary chlorides from time to time under certain conditions, and the fact that they may bear some relation to the amount of indican present in the urine, it might be supposed that the phosphates would also have some relation to the amount of indican, for in many instances they have been found to be greatly increased and sometimes reach as high as the maximum daily amount of chlorides, while again in other cases they may be entirely absent.

Since the phosphates form an integral part of the body fluids and tissues, it might be supposed they would be affected in cases in which the chlorides are altered; but this does not seem to be the case, for the chlorides being variable at all times and readily subject to change according to certain conditions, such as diet, exercise, disease, it has been found that the phosphates in the body may or may not be affected when the chlorides are being more stable and not so governable by body conditions.

During the twenty-five examinations made for the chlorides, phosphates, and sulphates, the amount of phosphates in three instances was found to range as high as 15-232.5, much beyond the normal daily maximum amount and far more than the normal daily minimum amount. This was also beyond the normal daily minimum amount of the chlorides, but a little less than the maximum amount. In one instance the amount of phosphates reached as high as the index 14-217, and in two cases they were as high as 10-155 beyond the normal daily minimum amount each time.

Again at three examinations the amount of phosphates was found to be at the index figure 8-124 beyond the normal daily minimum amount.

In nine instances in which the phosphates were not very high in amount indican was present and found to be at a rather high mark, while in five instances where the amount of phosphates was high the register of indican was not very great. Although the phosphates are increased in a number of diseases, such as cancer of the stomach, phthisis, inflammation of the brain, still they seem to have little or no influence whatever in the production of indican.

| | Color | Sp. Gr. | Phosphates | Indican |
|---|---|---|---|---|
| 1. | Light yellow | 1002 | 0–0 | 0 |
| 2. | Reddish yellow | 1006 | 3–46.5 | 0 |
| 3. | Yellowish red | 1010 | 1–15.5 | 10 |
| 4. | Reddish yellow | 1012 | ½–8 | 0 |
| 5. | Reddish yellow | 1018 | 5–77.5 | 0 |
| 6. | Yellowish red | 1020 | 4–62 | 15 |
| 7. | Yellowish | 1020 | 3–46.5 | 10 |
| 8. | Yellowish red | 1020 | 2–31 | 15 |
| 9. | Reddish yellow | 1022 | 12–186 | Faint trace |
| 10. | Reddish yellow | 1022 | ½–8 | 0 |
| 11. | Yellowish red | 1024 | 2–31 | 6 |
| 12. | Yellowish red | 1024 | 5–77.5 | 5 |
| 13. | Yellowish red | 1024 | 5–77.5 | 10 |
| 14 | Yellowish red | 1024 | 1–15.5 | 20 |
| 15. | Yellowish red | 1024 | 10–150 | 5 |
| 16. | Yellowish red | 1026 | 14–217 | 10 |
| 17. | Yellowish red | 1026 | 8–124 | 20 |
| 18. | Yellowish red | 1026 | 8–124 | 10 |
| 19. | Yellowish red | 1028 | 8–124 | 3 |
| 20. | Yellowish red | 1028 | 10–155 | 10 |
| 21. | Yellowish red | 1028 | 15–232 | 20 |
| 22. | Yellowish red | 1030 | 5–77.5 | 15 |
| 23. | Yellowish red | 1030 | 15–232 | 5 |
| 24. | Yellowish red | 1034 | 15–232 | 5 |
| 25. | Yellowish red | 1036 | 1–15.5 | 11 |

# Medicolegal Notes.

**Employment to Treat Another—Compensation.**—Action was brought against an electrical company for professional services rendered by a surgeon and owner of a hospital to a person injured by coming in contact with the company's electric wires. A leg was amputated, and other operations performed necessary to preserve the man's life. When these were nearly concluded a doctor retained by the defendant company to look after its injured employees, and authorized to make arrangements for their care in outside towns when injuries occurred, arrived upon the scene and directed the hospital authorities to give the patient every possible care. This was done at great expense and trouble. Within a day or two after the accident the assistant to the defendant company's president and general manager told the hospital authorities to take every care of the patient, and that the company would see to their compensation. It was held that the company was liable for the hospital charges, the patient having been injured through its instrumentality and its agents with ostensible authority having directed the hospital authorities to care for him. It was not, however, liable for the surgical services performed before any instructions were given by its officers, without proof that the injuries were caused by its negligence.—Rich v. Edison Electric Co. (Cal), 123 Pac. 230.

**Practicing without a License—Religious Beliefs.**—Under an information for practicing medicine for a fee without a certificate, the evidence showed that the defendant professed to treat sick and diseased people, maintained an office for that purpose, and treated patients for the cure and relief of bodily infirmities or diseases by examination of the person and rubbing the parts of the body supposed to be affected, doing this as a business for fees. It was held that he was subject to the provisions of the statute creating a board of medical registration and examination, and regulating the practice of medicine, surgery and osteopathy. The provision in the act that nothing therein referred to shall be construed as interfering with religious beliefs in the treatment of diseases did not exempt him from its operation, although he believed the words of Jesus in regard to healing can be carried out; that from Bible study and supplemental study of psychology and suggestive therapeutics he could to some extent carry out such healing practices; and that it was his duty to do so.—State v. Peters, Kansas Supreme Court, 123 Pac. 751.

**"Illness" in Insurance Application.**—An insured, in her application, stated that she had not been confined to her house by illness or consulted a physician since childhood. In an action on the policy, it appeared that about two years before the application she had been confined to the house by an acute cold, causing suppressed menstruation and a soreness and congestion of the womb, when a physician paid her one visit. It was held that this did not invalidate the policy, as a reasonable construction of the question whether she had ever consulted a physician implies that it should be interpreted as relating to a consultation as to some disease or illness with which the applicant was or had been afflicted, not to some feeling of trivial discomfort or temporary indisposition, not affecting the general health.—People v. Grand Circle (Cal.), 123 Pac. 349.

**Compensation for Professional Services—Evidence.**—A physician sued for professional services rendered by him to a deceased sister of the defendant, who, during her lifetime, was a member of the defendant's family, and also for the amount of a consultation fee paid to another physician, which claim had been assigned to the plaintiff. The case was tried before the court and jury. The issues were whether or not the defendant had promised to pay for the services of the physician, and whether or not the defendant's sister had paid the defendant in full for his services. The plaintiff testified in detail to the number of visits and to the services which he rendered. The value of the services rendered was conceded to be $55, the amount claimed. The defendant testified that he did not promise to pay for these services. His wife testified that she had seen the defendant's sister pay for the plaintiff's services upon each visit. Her testimony was weakened on cross-examination. The trial court left the issues involved to the jury as questions of fact, and instructed them to determine as to the credibility of the witnesses. The jury found a verdict for the plaintiff, which the court at once set aside as being against the weight of the evidence. An appeal was held that the trial court's action was an improper exercise of judicial discretion, the only issue being one of fact, which it was for the jury, not the court, to decide. Levene v. Denker, 135 N. Y. Supp. 592.

MEDICAL RECORD.

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## EPIDEMIC CATARRHAL JAUNDICE.

DURING the past few months a large number of cases of this condition have been observed among children in New York City, and probably in other localities. The experience of the present and of previous winters indicates a marked seasonal incidence of this disease, which, being frequently associated with common colds and symptoms of influenza, has been regarded as a catarrhal manifestation. The simultaneous occurrence of gastro-intestinal symptoms, such as vomiting, diarrhea, anorexia, and abdominal pain, and of a more or less intense jaundice, has suggested that in these cases the underlying pathological condition is a gastroduodenitis, with a resulting occlusion of the common bile duct at its terminus in the papilla of Vater. The occurrence of jaundice in many infectious diseases, notably in pneumonia, strongly suggests a bacterial infection of the biliary passages and of the liver, particularly in cases in which this organ undergoes an acute enlargement. The predilection of the typhoid bacillus for the gall bladder is not an isolated instance of the invasion of this viscus and of its anatomically related parts by pathogenic bacteria.

It is pointed out in an interesting paper on epidemic catarrhal jaundice by Leonard Guthrie (*British Journal of Children's Diseases*, January, 1913) that although sporadic cases of catarrhal jaundice are not uncommon in children, and that although a large number of these sporadic cases occurring at the same time in a given community may convey a false impression of the epidemicity of this disease, nevertheless it must be recognized that actual epidemics of catarrhal jaundice may occur. The epidemic character is determined by the simultaneous outbreak of jaundice among a large number of children in a restricted territory, and often among several children in the same family. A distinction must be made between this disease and epidemic infectious jaundice, described by Weil in 1886. The latter condition differs from the former mainly in the greater degree of severity. Besides, in Weil's disease there are associated with the icterus urticaria, petechiæ, hemorrhages from the nose, stomach, and other organs, fever, enlargement of the spleen, nausea, vomiting, diarrhea, and albuminuria. There is a fatal outcome in from 10 to 60 per cent. of the cases, in which the clinical picture and pathological changes are identical with those of acute yellow atrophy of the liver. Epidemics of catarrhal jaundice in England have always been of mild character, with no fatalities, but in other countries these have been reported. In a Moscow epidemic of ninety-six cases in children between two and four years of age, there were six fatal cases.

There can be no doubt that epidemic catarrhal jaundice is of microbic origin. The conception that this condition is the result of a mechanical obstruction of the bile duct associated with gastroduodenal catarrh is regarded as incorrect, for this obstruction cannot account for the great enlargement of the liver that is present in so many cases. It is suggested that epidemic jaundice, whether of the mild or severe type, is the result of an acute general hepatitis produced by microorganisms or toxins. Various bacteria have been suspected, such as the pneumococcus, the influenza bacillus, and the *Bacillus coli*, the last two of which have been isolated from the liver in two cases in children in which acute yellow atrophy of this organ was present. The analogy between the pancreas and the parotid glands, and the occasional coincidence of cases of mumps and jaundice in the same community, have suggested that mumps, acute pancreatitis, and acute hepatitis may sometimes be "allotropic" forms of one and the same disorder.

It is probable that future investigations of this subject will throw considerable light upon the actual bacterial or other cause of this interesting condition. Present knowledge tends to minimize the importance of the possible mechanical factor in the etiology of epidemic jaundice, and seems to indicate a widespread infection, usually of a mild grade, that exerts its greatest influence upon the liver.

## THE AGGLUTINATION IN SYPHILIS.

AMONG the antibodies developed by an animal in response to an infection the agglutinins have been largely used as important aids to diagnosis. In syphilis an agglutination has been described by several authors but until recently there has apparently been no well-directed effort to ascertain what diagnostic value such a reaction might have in this disease. Albert Touraine* has instituted a searching investigation of the subject and has published some very interesting results of his work. To overcome the difficulty of obtaining pure cultures of the causative organism he has used a fragment of tissue from a condyloma on the genitals of a woman in the active stage of the disease. When such a piece of tissue is removed with the minimum amount of blood or serum, placed in physiological salt solution and examined, the field of the microscope is soon seen to be swarming with spirochetes. On the addition of serum from a syphilitic patient a characteristic agglutination takes place. At first two organisms join end to end, and gradually others add themselves, forming a stellate figure of from six to twenty members. The new organisms approach the group in a hesitating manner but when

*Les anticorps syphilitiques, essais de séro-agglutination de la syphilis. Paris: G. Steinheil, 1912.

within a certain distance the junction occurs with marked suddenness. This characteristic agglutination is distinctly a reaction of living organisms and is entirely different from the confused agglomeration which takes place in a preparation containing only dead spirochetes. The most frequent source of error and the most difficult to avoid was the autoagglutination which took place at times due to the admixture with the tissue of more or less serum from the donor. The author avoided this complication by discarding all those preparations which showed blood platelets, considering these as evidence of the presence of serum or blood.

Touraine tried this reaction on 137 patients and found that it became positive in about ten days after the appearance of the chancre. His percentage of positive results is as follows: Primary syphilis, 83.0; secondary syphilis, 95.1; tertiary syphilis, 90.9; parasyphilis, 75.0; hereditary syphilis, 100.0. Treatment caused the disappearance of the reaction only when prosecuted vigorously.

In spite of the great scientific interest which naturally attaches itself to such a work the test will probably not reach any great degree of clinical usefulness. In the present days of the popularity of salvarsan one would but rarely find a suitable donor, at least as described by this author, and the Wassermann reaction and the luetin test are much simpler in their clinical application. Of course if a satisfactory supply of the organisms could be obtained its use would be attended with less difficulty than would be the case at the present time.

## CANE VERSUS BEET SUGAR.

The fact is more or less generally admitted that the teeth of the present generation are not so good as those of the past. This is palpably obvious in Europe where army statistics show that the teeth of those joining the colors now are decidedly more carious than were those of recruits twenty years ago. Of course, decay of the teeth is no new occurrence but it is suggestive to note that there has been a marked increase in its incidence.

Dr. A. Stayt Dalton, in an article in the *Medical Press and Circular,* Dec. 11, 1912, points out that dental caries appears to have increased *pari passu* with the increase of consumption of beet root sugar. For example, statistics show plainly that since the year 1840, a marked alteration has taken place in the world's sugar trade, and in the habits of people in regard to the use of it. It is noteworthy, too, that the augmented importation and consumption of beet sugar in Great Britain, and in consequence the decrease, particularly, since 1870, in that of cane sugar, has been contemporaneous with a decided increase in the occurrence of dental decay. A good deal of the increase of dental caries may be attributed to the larger consumption of sugar in various forms which has taken place since the introduction of a cheaper sugar. It is questionable, however, whether to this cause alone can be ascribed the really remarkable increase of dental decay which has signalized the predominance of beet sugar. True it is, that the chemical composition of cane and beet sugar is said to be identical; yet there may be differences. Dr. Goulston stated in a paper read before the British Medical Association in Liverpool last July that three leaders in the chemical and physiological world have admitted that it is not inherently impossible for beet sugar to contain a factor which is not present in cane sugar. Although the suggestion of Dalton seems in the highest degree fanciful, it is nevertheless a question not unworthy of serious consideration to ascertain whether beet root sugar has a more deleterious effect on the teeth than cane sugar. It concerns Great Britain more intimately, perhaps, than this country, that is from the economic point of view, but on the other hand, more sugar is consumed in America and even from the purely scientific standpoint it might be as well to try to elucidate the point.

## The Inclusion Bodies in Scarlet Fever.

The recent announcement by the Health Department of Boston that it is prepared to examine blood-films from suspected cases of scarlet fever, with the view of aiding in the diagnosis of this disease, suggests that considerable importance is attached to the so-called Döhle leucocyte inclusions which are almost invariably present in the early days of scarlatinal infection. But these bodies have also been found in many other infectious diseases. A number of observers have reported contradictory results with reference to the incidence of the inclusion bodies and to their diagnostic significance. A careful investigation of this subject has been made by J. Granger and C. Kingsley Pole (*British Journal of Children's Diseases, January,* 1913), with the view of determining the following facts: (1) if the inclusion bodies are present in all cases of scarlet fever; (2) the date of their disappearance; (3) if they are present in diseases which might be mistaken for scarlet fever, *e.g.* diphtheria, measles, tonsillitis, and rashes due to sepsis, enemata, drugs, and intestinal intoxications; and (4) the diagnostic value of these bodies. As the result of the study of a large number of cases, the authors conclude that except in the extremely fatal toxic type of scarlet fever, Döhle's inclusion bodies are found in every true case of scarlet fever during the first four days of illness. The absence of the bodies practically excludes scarlet fever. After the fourth day the bodies appear with lessening frequency, and are absent in most cases after the eighth day. The presence of these bodies in a large proportion of cases of measles, diphtheria, and tonsillitis, makes the inclusion bodies of no value in a differential diagnosis between the above diseases and scarlet fever. In fact, the bodies are found in most diseases caused by ordinary pyogenic organisms. The absence of the Döhle bodies in the case of toxic rashes may aid one in the diagnosis of these conditions. On the basis of their important findings the authors are justified in drawing the conclusion that it is impossible to diagnose scarlet fever from film examinations alone.

## Osteomalacia and the Internal Secretions.

Osteomalacia was one of the first diseases to be brought in causal relationship with anomalies of the internal secretions, but on account of the interlocking character of the latter in the production of pathological syndromes much still remains to be

learned concerning this malady. In a recent number of the *Berliner klinische Wochenschrift* (December 9) Zuntz sums up the recent advances in this province of research. The ovary appears to be able to inhibit the retention of calcium, while so far as known all the other glands of internal secretion have the opposite action. Castration has long been a tried remedy for osteomalacia, but the same end may be attained without mutilating the women if polyglandular preparations are given inwardly. The action of the hormones when given singly, while occasionally brilliant, may be absent entirely. Striking cures, Zuntz says, have recently been obtained with pituitrin, and adrenalin has been tested in forty-six cases with five cures. The administration of ovarian extract appears to antagonize the effects of these hormones under certain conditions. At present the three glands which have some recognized therapeutic power over osteomalacia are the thyroid, the adrenals, and the hypophysis. As the normal or even pathological activity of the ovary is not the efficient cause of the disease, it is evident that some defect in the other structures must be primarily concerned; so that only the uncorrected action of the ovary is manifest. As the disease does not result outright from removal of any one structure it is probable that several are simultaneously involved, and whenever this is the case we have to suspect some deep-seated insufficiency of development.

## News of the Week.

**Hospitals for Indians.**—The Committee on Indian Affairs of the United States Senate has approved an Indian Appropriation bill providing for hospitals and other means for treating tuberculosis among the Indians. The appropriations amount to $307,000.

**Mount Sinai Laboratory.**—It has been decided that the new pathological building for the Mount Sinai Hospital, New York, on which work will be begun about July 1, shall be called the Mount Sinai Hospital Pathological Building and Laboratory, Adolph Lewisohn Foundation, in honor of the donor.

**Decrease in Death Rate.**—For the week ending February 1, the death rate in New York City was 13.98 per thousand, the total deaths being 1,440, as compared with the same period of 1912, when the rate was 16.06, and the total number of deaths 1,593. The number of deaths reported as due to organic heart diseases decreased 69, and to pneumonia, 65. There was a slight increase in the number of deaths dut to diphtheria and influenza.

**State Hospital Commission.**—Gov. Sulzer has appointed Mr. Milton B. Gibbs of Rochester as the legal member of the New York State Hospital Commission, to succeed Col. William C. Sanger, serving until December 31, 1914, at a salary of $5,000 and an additional $1,200 annually for expenses.

**Harvey Society.**—Prof. Theodore C. Janeway of the College of Physicians and Surgeons, New York, will deliver the seventh lecture of the Harvey Society at the New York Academy of Medicine on Saturday evening, February 15, at eight-thirty. The subject of the lecture will be: "Nephritic Hypertension: Clinical, and Experimental Studies."

**Philippine Service.**—The United States Civil Service Commission announces an open competitive examination for men only, for the purpose of filling a vacancy in the Bureau of Science, Manila, P. I., at a salary of two thousand dollars a year. Persons desiring the examination should apply at once for Form B. I. A. 2 to the United States Civil Service Commission, Washington, D. C. Applicants must be between eighteen and forty years of age, and graduates in medicine with in addition at least one year's post-graduate experience in conducting laboratory research work in experimental therapeutics.

**Tuberculosis in Alaska.**—Dr. Emil Krulish of the U. S. Public Health Service, in a report to the U. S. Commissioner of Education, states that at least 15 per cent. of the entire population of Alaska is infected with tuberculosis and that this disease will exterminate the native population in the course of two generations, unless promptly checked.

**University of Georgia.**—The new buildings of the Medical Department of the University of Georgia at Augusta were formally opened by Gov. Brown on January 29. At the exercises, which were attended by a large number of prominent persons, honorary degrees were conferred upon Dr. William M. Polk, Dean of the Cornell University Medical College, New York, and Dr. John A. Witherspoon of Nashville, Tenn., president of the American Medical Association.

**Inter-State Milk Conference.**—Ten States in addition to the Federal Government were represented at a conference held recently at the New York Academy of Medicine under the auspices of the New York Milk Committee. Legislative bills will be drafted in the various states incorporating the recommendations made by the conference, of which the most important are that every dairy cow in the State shall be tested for tuberculosis, and that records of these tests shall be kept; that all tuberculous cows shall be killed, the State to compensate the owner; and that there shall be strict State quarantine to prevent the sale or transportation of any cow known to be diseased.

**Gifts to Charities.**—By the will of the late Dr. Orville Horwitz of Philadelphia, the sum of $15,000 is bequeathed to the Jefferson Hospital of that city, for the endowment of three free beds, one in the genitourinary ward, to be inscribed, "In Memory of Orville Horwitz"; one in the surgical ward, to be inscribed, "In Memory of Phineas Horwitz, late Medical Director and Surgeon General, United States Navy"; and one in the gynecological ward, to be inscribed, "In Memory of Caroline Norris Horwitz."

The National Jewish Hospital for Consumptives at Denver, Col., has received a gift from Mrs. Jacob Greenhut of New York, for the purpose of erecting an addition to the hospital and equipping it with special rooms and apparatus for the treatment of tuberculosis by inhalation of gases.

**Dr. M. Allen Starr** of this city will sail for Egypt on February 18, to be absent until September 1.

**A Study of Diabetes.**—Dr. W. E. Fitch of 355 W. 145th St., New York, writes that he is undertaking a research into the pathology, etiology, and dietotherapy of diabetes mellitus. Von Noorden says "the best treatment for the diabetic is the food containing the greatest amount of starch which the patient can bear without harm," and Dr. Fitch would be glad to hear from any physician who has had a similar or contrary experience.

**Suggested Consolidation of Medical Economic Societies.**—At a meeting of delegates from the various medical economic societies of Greater New York held in the Borough of Manhattan, February

7, 1913, it was decided to present to the following societies a plan of consolidation: Physicians' Protective League of Downtown New York, Medical Alliance of New York, Physicians' Protective League of New York, Yorkville Economic League of New York, Physicians' League of the Bronx, and Physicians' Economic League of Brooklyn, N. Y. These societies now have a combined membership of two thousand physicians.

**Fourth International Congress on School Hygiene.**—The meetings of this congress will be held in Buffalo, N. Y., on August 25 to 30, 1913, under the presidency of President Charles Eliot of Harvard University, and it is expected that delegates from at least twenty-five nations will be in attendance.

**Medical Society Elections.**—Audubon Medical Society.—At the annual meeting of the society, held recently in New York, the following officers were elected: *President,* Dr. Theodore K. Tuthill; *1st Vice-President,* Dr. Robert Emmett Walsh; *2d Vice-President,* Dr. Goodrich T. Smith; *Treasurer,* Dr. W. Ten-Eyck Elmendorf; *Secretary,* Dr. Sidney Furst.

Clarendon County (S. C.) Medical Society.—The following officers were elected at the annual meeting held at Manning on January 29; *President,* Dr. George L. Dickson, Manning; *Vice-President,* Dr. Thomas J. Davis, Summerton; *Secretary-Treasurer,* Dr. Henry L. Wilson, Jordan.

Upper Mississippi Valley Medical Society.—At the meeting held at Wadena, Minn., on January 27, the following officers were elected for the ensuing year: *President,* Dr. William Reed, Deerwood; *Vice-president,* Dr. Michael A. Desmond, Akeley; *Secretary,* Dr. Arthur W. Ide, Brainerd; *Treasurer,* Dr. Paul E. Kenyon, Wadena.

Ramsey County (Minn.) Medical Society.—At the annual meeting held at St. Paul on January 27, the following officers were elected: *President,* Dr. Charles J. Meade, St. Paul; *Vice-president,* Dr. J. M. Armstrong, St. Paul; *Secretary,* Dr. Charles E. Smith, Jr., St. Paul.

**The Late Dr. Tuttle.**—At a special meeting of the board of trustees of the New York Polyclinic Medical School and Hospital, held February 9, 1913, the following resolution was unanimously adopted, and the secretary was directed to request the Medical Record to publish the same:

*Resolved*, That in the death of Professor James P. Tuttle, the board of trustees of the New York Polyclinic Medical School and Hospital has lost one of its most worthy members, and the medical faculty of this institution one of its most successful teachers, who for a quarter of a century has been associated with its medical staff.

Dr. John A. Wyeth writes: "I ask the privilege of paying this slight tribute to the memory of my friend and associate, the late Dr. James P. Tuttle. His career may well serve as an example and an inspiration to all and especially to the younger men, who are standing near the threshold of the life of a practitioner of medicine. Born and reared in a country town in Missouri, having no backing except his faith in himself, he came to this city immediately after finishing an internship in one of the large hospitals of Philadelphia. He paid me the compliment of asking to work upon my staff, and he and I were thus intimately associated for 15 years, until he grew into the leadership in his own selected department of surgery. Of his fame as a specialist I need not speak. His text-book and the technique of many of the most formidable procedures which he developed speak for themselves as to his originality and his great ability. Though never any too strong of body, his indomitable energy enabled him to accomplish much more than many physically more able to achieve. His moral strength and his devotion to duty were his most valuable assets, earning for him the confidence of his friends and the respect of all. His illness, so patiently and so bravely borne, was for the last few years a great loss to the Polyclinic, which his genuis helped to build. His death is a grief to all of us, and to me, acutely personal. Our long association only served to bind us more closely together, and the grave but accentuates an affectionate friendship which began years ago when he was my pupil and assistant."

**Obituary Notes.**—Dr. Albert Clinton Aldrich of Somerville, Mass., a graduate of the Harvard Medical School, Boston, in 1883, a member of the American Medical Association and the Massachusetts State and Middlesex County Medical Societies, and assistant physician at the Charlestown State Prison, died suddenly on January 29, aged 56 years.

Dr. W. W. P. McMillen of Decatur, Ind., a graduate of the Medical College of Fort Wayne, Ind., in 1878, and a member of the Indiana State and Adams County Medical Societies, died at his home on January 15, aged 66 years.

Dr. George Edmund Reynolds of Hayward, Cal., a graduate of the University of California, Medical Department, San Francisco, in 1877, and a member of the American Medical Association and the California State and Alameda County Medical Societies, died at his home after a short illness on January 11, aged 56 years.

Dr. Daniel William Hayes of Brownville Junction, Me., a graduate of the Medical School of Maine, Portland, in 1897, and a member of the Maine State and Piscataquis Medical Societies, was instantly killed in a rear-end collision between trains on the Canadian Pacific Railroad at Onawa on January 21, aged 42 years.

Dr. Newton P. Hunter of North Lewisburg, Ohio, a graduate of the Eclectic Medical College, Cincinnati, in 1883, died suddenly at his home on January 20, aged 66 years.

Dr. J. E. Massey, Sr., of Rock Hill, S. C., a graduate of the University of Maryland, School of Medicine, in 1871, died at his home after a long illness on January 20, aged 64 years.

Dr. William Jacob Wagner of Toronto, Canada, a graduate of the Toronto School of Medicine, in 1870, died at his home after a long illness on January 10, aged 63 years.

Dr. Louis B. Balliet of Allentown, Penn., a graduate of the Department of Medicine, University of Pennsylvania, in 1854, and the oldest active physician in his section of the State, having practiced continuously for fifty-five years, died at his home on January 28, aged 81 years.

Dr. Alfred Irving Morse of Boston, Mass., a graduate of Tufts College Medical School, Boston, in 1910, formerly an interne at St. Mary's Infant Asylum and Lying-In Hospital, and more recently connected with the United States Marine Hospital, Chelsea, died at the hospital from septic poisoning contracted in the course of duty, aged 27 years.

Dr. Helen A. Goodspeed of Worcester, Mass., a graduate of the Eclectic Medical College of the City of New York in 1870, died at her home recently from diabetes, aged 69 years.

Dr. Daniel B. Cliffe, retired, of Franklin, Tenn., a graduate of the University of Louisville, Medical Department, in 1842, died at his home from pneumonia on January 22, aged 90 years.

Dr. Robert D. E. Follweiler of Allentown, Penn., a graduate of the Baltimore University School of Medicine, Maryland, in 1898, died at his home on January 27, aged 39 years.

Dr. William F. Decker of Philadelphia and Newfoundland, Penn., a graduate of the Jefferson Medical College, Philadelphia, in 1878, died at his home in Newfoundland of penumonia on January 26, aged 57 years.

## Correspondence.

### TUNING-FORK TESTS.

To the Editor of the Medical Record:

Sir:—A recent article in the Medical Record by A. B. Bennett, Jr., M.D., contains certain inaccuracies which it seems to me should be corrected.

1. The upper limit which Dr. Bennett gives as 48,000 d.v. is conceded by modern investigators to be too high. The upper limit of hearing is certainly not above 25,000 d.v. and recent investigations by means of the monochord, which is apparently a more accurate instrument than the Edelmann whistle, would place the upper limit at not to exceed 20,000 d.v.

2. His third proposition that "interference with the perception apparatus causes loss of the high tones" while generally true, particularly so of slow degenerations of the auditory nerve, has many exceptions; *e.g.* the nerve deafness resulting from cerebrospinal meningitis not infrequently leaves a large island of hearing near the middle of the range of hearing, while the low tones are destroyed.

3. "Normal ears hear twice as long by air conduction as by bone conduction." This proposition may be true for certain forks and at certain ages, but as a general proposition it is not exact. With advancing age bone conduction is shortened; the author takes no account of this factor.

4. His sixth proposition is: "When the perception apparatus is diseased bone conduction is diminished and the relative time for air conduction is lengthened." The first part of this proposition is true, the second part should rather read that the time for air conduction and bone conduction are both shortened.

If the author will consult the "Bericht der Kommission zur Ausarbeitung einer einheitlichen akumetrischen Formel," by Jörgan Möller, in the transactions of the Sixteenth International Congress of Medicine, Budapest, September, 1909, page 285, he will find a much better formula for recording the results of his tuning-fork test than the one given in his article. To sum up the whole matter, tuning-fork tests are of very little use in prognosis; they are of a great deal of use in diagnosis. But when the diagnosis of the condition is made, then the prognosis is easier, for we know that most cases of the middle ear type of deafness not due to otosclerosis, may be improved to some extent by treatment, and that deafness due to disease of the auditory nerve is but rarely improved by treatment. As a rule, the cases of nerve deafness that appear to be improved as a result of treatment, upon careful examination will be found to be complicated by a certain amount of middle-ear deafness and it is the middle-ear deafness that improves on treatment.

In this connection I may be permitted to observe that it seems to be the opinion of otologists working in our large eastern clinics, that tuning-fork tests are of little or no use. Thus I found in one of the largest ear clinics of Philadelphia but three or four tuning forks and an old fashioned Galton whistle. With this outfit it is absolutely impossible to determine either the upper or the lower limits of hearing. Small wonder then that in this clinic no case of otosclerosis had been diagnosed for seven years. In another large clinic in the same city, the physician stated that the tuning-fork tests were made by the admitting clerk. After considerable effort, one tuning fork was found in this clinic. After this demonstration I was not surprised that the attendant did not know what I meant by otosclerosis. In one of the largest clinics of New York City the physician informed me that tuning-fork tests were valueless. His chief, overhearing the conversation, told me that they had a set of Edelmann forks but did not know how to use them. It is to such ignorance of tuning-fork tests that we owe the lamentable spectacle of patients with otosclerosis going to otologists for weeks and months of treatment until their money is all gone in a useless effort to improve an incurable condition. If this letter is the means of directing more accurate study to tuning-fork tests, it will have accomplished its purpose.

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### OUR LONDON LETTER.

(From Our Regular Correspondent.)

Insurance pledge rescinded—campaign continued by B. M. A.—other committees opposing—compromise dangerous—first victim of panel scheme—obituary.

London, January 24, 1913.

The representatives of the British Medical Association were unable to conclude their discussion on the 17th, and adjourned until the next day, on which, therefore, the vote was taken for releasing from the pledge those who had signed it. In accord with the general anticipation the release was carried by 115 to 35. This seems to have been the best course under the circumstances. The members had been landed in an impossible position by their incompetent leaders, and another compromise threatened to wreck the Association. The meeting saw this, and the necessity of adopting some constructive policy. Accordingly it passed a further resolution instructing the council to take all necessary steps to watch and protect the interests of the profession by getting, where possible, representatives on the advisory and insurance committees, and statutory recognition of local medical committees; also by taking every opportunity of pointing out defects in the act and in the regulations, and endeavoring to secure their removal. The next resolution—adopted without discussion—was that acceptance of service outside the practitioner's own district, involving change of residence for the purpose, would be regarded as detrimental to the honor and interests of the profession. Then, with one dissentient, an emphatic protest was entered against the discreditable methods of the government in compelling unwilling service on terms against the public interest. Finally the meeting declared the act to be unsatisfactory, and where men still hold out the council should give them every assistance in its power. This was unanimously carried amid loud applause.

The result of this decision has been a daily addition of names to the panels, and yesterday it was officially announced that the number of those who have signed on to the panel for London is 998.

Immediately after the representative meeting the London committee met to consider its position, and decided to continue the campaign in the capital. The same evening it therefore issued a letter asking practitioners whether they intended acting on the panel, either willingly or unwillingly. They have received sufficiently encouraging replies and are supported in a policy of resistance by public meetings in different districts to determine them so far to maintain their hostile attitude and carry on the campaign in London, Middlesex, and perhaps other of the Home counties, but in these they will probably find they must seek support from those on the panels, and it is thought this will not be denied.

But it must not be supposed that this committee represents fully the profession, or even the British Medical Association. It will doubtless have considerable influence in agitating for amendments to the act and inducing those on the panel to seriously consider whether they will continue after the expiration of their three months trial, on April 14. There are men optimistic enough to think that a general resignation at that date would still defeat the government. How can such unanimous action be hoped for in face of the failure of the 27,000 to hold together? Different groups or, as their opponents prefer to call them, factions, are already forming committees to promote their various wishes. Some of them frankly oppose the British Medical Association. Others favor some special proceeding. One proposes to form a medical union on the lines of trade unions to defend the rights and privileges of the profession both in town and country. Considering how strongly the methods of trade unionists have been repudiated whenever they have been alluded to, it seems unlikely that this group will make much progress, although it has B. M. A. members among its promoters.

Another organization, mentioned in former letters, is called the National Insurance Practitioners Association and has this week issued a long statement emphasizing the necessity of its existence and stating that its arrangements are frankly experimental and provisional. It offers assistance to panel practitioners, acting individually or collectively, in efforts to secure such privileges as the insurance committees can want. They will work in cooperation and not in opposition to other bodies. They are considering suggestions for simplifying the records required by the commissioners and will convene a conference to collect and focus opinions and decide on a line of policy. Questions are mentioned respecting existing medical institutes and social income limits as deserving of early attention.

Other groups or factions are meeting to talk and some may be heard of further, but they are too numerous at present to do anything, unless combine.

Considering that up to date the wily chancellor has won all around many are disposed to accept defeat and make the most of the reorganization of the profession which is involved. The leaders of the B. M. A. threw away their only chance when they consented to a conference with a view to compromise. They held the pledges of 27,000 practitioners—the whole profession if you allow for those who had no direct interest in the dispute and a few hundreds who were unable or unwilling to return the voting papers. They had stated their terms, they believed them to be reasonable and right. Yet with practical unanimity on their side they consented to confer and talk. Compromise is always wrong when the question is one of right. They should have refused to deviate a hair's breadth from the terms and replied to every proposal—we have our mandate—and no power to alter it. The Chancellor would have been helpless. He wanted 10,000 practitioners and could not have found 1,000.

The Socialist papers denounced what they pretended to be a strike. It was no such thing. The public could have gone on just as before with their advisers—who would only have declined Mr. George's terms. It seems a pity that politics played so great a part in the contest. But the Socialists have always held that a State medical service would be the easiest step towards their ideal. Now they have done so much they might stay their abuse. There seems no reason why their organs should still indulge what looks like mere spite.

The "first victim" to the Act has been the subject of many paragraphs; an inquest was held on a man who died from strangulated hernia and who had applied to a panel doctor two days previously. He was supplied with medicine but no examination was made, the doctor being overwhelmed with work filling up the schedules required by the commissioners. This clerical work is said to have been imposed at the instigation of statisticians, some of them medical officers of health, who seem to think the treatment of the patients as less important than the collection of their statistics for them. The coroner hoped he might not have another case so sad and the jury condemned the government for imposing such clerical work on the doctors. Counsel in the case said it appeared to him that Mr. Lloyd George meant to run the Act on the doctors' money, collecting it as decided, weekly, and making up the accounts quarterly, paying it no one knew how long afterwards.

Dr. Howship Dickinson, who died on the 9th inst., exercised for a long period a remarkable influence on the profession. He was a Cambridge graduate and held all the offices at St. George's Hospital, retiring as consulting physician as well to the Children's Hospital. At the Royal College of Physicians he held all posts except the presidency. He had been president of the Royal Medical and Chirurgical and of the Pathological Societies. He was an all-round physician, able and learned in all branches, a constant clinical worker at his hospital and a very able teacher. He began his career with pathological work, and side by side with his clinical instruction insisted on such knowledge in every case. To profound acquaintance with medical theory and practice he added an abundant flow of wit and humor, making him an ideal consultant in difficult cases. But his great influence was further due to his straightforwardness and love of simple truth. His book on "Renal Diseases" is no doubt well known to you, for he was made a Fellow of your Academy of Medicine, but he made many contributions to societies and journals and his literary style made it a pleasure to read them.

Dr. George Alexander Gibson, Senior Physician to the Edinburgh Royal Infirmary, died on the 18th inst., after a long illness, at the age of 59. He was M.D. and D.Sc. Edinburgh and became an honorary graduate of St. Andrews, Dublin, Harvard, and McGill. For about ten years he edited the *Edinburgh Medical Journal*. He was also editor of "A System

of Medicine," 1901, and in 1905 he published "Nervous Affections of the Heart," being his Morison lectures on that subject, but he had published a work on cardiac diseases in 1898. He was F.R.C.P. Edinburgh, and it is said the presidency would certainly have been offered him but for his illness. He had a large consulting practice, his opinion being greatly valued. He had been an examiner at several universities and here we knew him as Inspector of Examinations for the General Medical Council.

Dr. G. G. Bantock died on January 15 at the age of 76. He had retired for several years after a successful career as a gynecologist, having been president of the society of his specialty and consultant to the Samaritan Hospital as well as other institutions. He wrote on "Ruptured Perineum," on the "Use and Abuse of Pessaries," and contributed to the societies and journals on similar subjects.

Dr. Charles Carter, who went out to the Balkans as a member of the British Red Cross Mission, died on January 18 of typhoid at Uskub, where he was working among the soldiers suffering from the outbreak. He was buried with military honors, the director of the Servian Army Medical Department attending the funeral with the prefect, the whole of the Consular body, the Red Cross members, and numerous officers, soldiers, and others.

Another Red Cross victim of the war is Miss Barnes, who has died also from typhoid at Salonika, where she had been working with characteristic devotion.

## OUR PARIS LETTER.

(From Our Regular Correspondent.)

CONGRESS OF SURGERY—CICATRICIAL STENOSIS OF THE ESOPHAGUS—RADIOLOGY OF THE GASTROINTESTINAL CANAL—COXA VARA—TRANSFUSION OF BLOOD—ANTITYPHOID VACCINATION.

PARIS, December 1, 1912.

THE twenty-fifth Congress of Surgery was held in Paris from the 7th to the 12th of October in the large amphitheatre of the Medical School, under the presidency of Delorme, Medical Inspector of the Army. The first subject that came up for discussion was "The Diagnosis and Treatment of Cicatricial Stenosis of the Esophagus." Moure of Bordeaux and Girisez of Paris read the opening papers. The diagnosis of cicatricial stenosis of the esophagus is based upon the previous history, auscultation, the use of the sound, esophagoscopy, and radioscopic and radiographic examinations. The most important symptom is a progressive dysphagia. Among the secondary symptoms the most striking are vomiting, regurgitation, salivation, emaciation, and cachexia. In the treatment there are two indications: (1) the dilatation of the stricture, and (2) the removal of the fibrous cicatricial tissue. If the stricture is permeable but not dilatable, circular electrolysis may be employed. If the stricture is impermeable through the natural channel, even with the aid of endoscopy, it is necessary to resort to retrograde catheterism following gastrostomy. If the stricture is completely impermeable the only resource is a simple gastrostomy. Injections of fibrolysin or of thiosinamine have not as yet demonstrated their value in these cases.

The second subject that came up for discussion was "Radiological Exploration in Surgical Diseases of the Stomach and Intestine." The papers were read by Béclère of Paris and Mériel of Toulouse. The *x*-ray examination of the digestive tract is rendered possible by the administration to the patient of salts of bismuth, and particularly of carbonate of bismuth. The other salts, chiefly the subnitrate, may produce toxic effects. Radiographic study may enlighten one concerning the topography, morphology, and motor functions of each of the segments of the digestive tract. The *x*-ray examination of the stomach shows that the situation and the form of the stomach do not correspond to the anatomical descriptions. Important facts may be revealed regarding the presence of ulcer or cancer of the stomach. In the case of the duodenum it is possible to be informed regarding displacements, ptoses, and ulcerations of this organ. Duodenal stenosis is characterized by three signs: the abnormal and persistent filling of the duodenum, and the presence of peristalsis and antiperistalsis in this organ during the process of filling. Errros of interpretation are difficult to avoid. For this reason it is necessary to vary the tests, to carry them out in different positions, and always to supplement them by clinical signs.

"Coxa Vara" was the next subject that came up for discussion. Papers on this topic were read by Kirmisson and Froelich. Coxa vara is an affection of the hip characterized by a lesion of the epiphyseal cartilage during the period of growth, causing a downward displacement of the head of the femur. The pathology has been the subject of considerable discussion. The condition may be the result of an excessive strain during adolescence upon an incompletely developed cartilage. The treatment should be in the first place preventive. The displacement should be reduced as completely as possible, in such manner that the tendency of the femoral head to move backward should be counteracted. Reduction should be effected under chloroform, and the limb should be encased in plaster of Paris in such manner as to be held in a position of abduction and outward rotation. If the displacement is not very marked it may suffice to maintain extension combined with a medium degree of abduction, which position may be attained with the use of Hennequin's apparatus. Frequently curative treatment requires an open operation such as an oblique subtrochanteric osteotomy, which is superior to an osteotomy of the neck. Resection of the head and pinning the femur are exceptional procedures.

The "Transfusion of Blood" was one of the most interesting subjects that came up for discussion. A paper on this topic was read by Guillot and Dehelly of Havre. By means of a special canula they are able to transfuse blood directly from the radial artery into the internal saphenous vein. Martel of Paris presented a paper on the "Surgery of the Skull and Spinal Column." The "Transplantation of Ovarian Grafts" was discussed by Voronof of Nice, who awakened considerable interest. Martigny of Montreal and Jayle of Paris also spoke on this subject.

The next Surgical Congress will be held in Paris in October, 1913, under the presidency of Professor Kirmisson. The following subjects will come up for discussion: The open method in the treatment of ankyloses; the surgery of the pelvic colon, and the treatment of cranial wounds caused by minor projectiles.

The "Results of Antityphoid Vaccination" was the subject of the paper read before the Academy of Medicine by Professor Vincent, who referred to the remarkable results obtained with the use of this method in a recent epidemic of typhoid fever in

the city of Avignon during the months of June, July, and August, 1912. This epidemic was particularly severe. The first cases began to appear in June, and the epidemic reached its height in July and August. The disease spread throughout the city. Out of a population of 49,000 there were nearly 1,500 cases, with 64 deaths. The epidemic spread to the military garrison of 2,000 men. Following a number of conferences that were held as to the advisability of practising antityphoid inoculation, a total of 1,386 vaccinations were effected, that is, among two-thirds of the garrison. These escaped being infected with typhoid fever, which, however, spread among the members of two regiments of infantry and engineers who had not been vaccinated. Both vaccinated and unvaccinated individuals had lived together under the same conditions, had eaten at the same mess, and had drunk the same water. All of the cases of typhoid fever were observed in individuals who had not been vaccinated. The mortality was particularly severe. The history of this epidemic furnished a remarkable demonstration of the efficacy of antityphoid inoculation. This procedure should be resorted to in the protection of members of families and schools and the inhabitants of cities, whenever the menace of typhoid fever arises. Children, soldiers, and nurses should be inoculated. By this means it will be possible to rescue from typhoid fever a large number of individuals.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*January* 30, 1913.

1. A Consideration of Seventy-six Operations in Which Lane Bone Plates Were Used. W. Bartlett.
2. Unilateral Hematuria in Chronic Nephritis. P. E. Truesdale.
3. Studies in Speech Disorder. W. B. Swift.
4. Clinical Studies on Feeding in Infantile Malnutrition. C. H. Dunn.
5. Intraventricular Hemorrhage of the New Born. A. C. Eastman.
6. Toxicity of Bile with the Report of an Unusual Case. W. E. Ladd.

1. **The Open Treatment of Fractures.**—W. Bartlett reviews the results obtained in the treatment of seventy-six cases of fracture in which Lane bone plates were used. He states that the indications for open treatment are the following: (1) When a leg case must be gotten out of bed early. (2) Old cases of non-union or *extreme* malunion. (3) This treatment is desirable in all fresh widely open fractures if shock be past. (4) Chronically infected cases in which the bones lie bare. All compound wounds, whether suppurating or not, are to be packed and allowed to granulate. Generally speaking, the patient must always be a good surgical risk.

2. **Unilateral Hematuria in Chronic Nephritis.**—P. E. Truesdale reports a case of this condition occurring in a woman seventy years of age. He notes that Fowler, of Washington, made interesting and valuable comments on the literature up to 1905, reporting a case under his own observation, from the results of which he summarized as follows: (1) The onset of the hematuria was spontaneous and without apparent cause. It was not associated with any other urinary disturbance. (2) The hemorrhage was profuse and continuous. It had persisted for four years in spite of repeated attempts by various means to control it. (3) The hematuria was unilateral. (4) Repeated examination of the urine failed to show any evidence of nephritis. The presence of albumin in the urine was accounted for by the blood present. No casts were ever found. There was never an interval when the urine was free from blood. (5) On exploring the kidney it appeared normal except for the markedly granular appearance of the surface. Nothing was found microscopically to explain the hemorrhage. The operation was followed by an immediate cessation of the hematuria. Convalescence was rapid. The patient's general condition improved. (6) Histological examination of the kidney showed a chronic interstitial nephritis of a moderately severe grade, in which the hemorrhagic tendency was well marked. Albarran divided the nephritic hematurias into three clinical groups, as follows: (1) The hematuria appears along with other unmistakable symptoms of nephritis. (2) The hematuria precedes the evolution of nephritis possibly for years. After a longer or shorter period other signs of nephritis appear. (3) Hematuria is the only symptom. It is spontaneous, without apparent cause and is not modified by exercise or repose. The patient goes about his work as if nothing were wrong for days, months, or years.

4. **Infantile Malnutrition.**—C. H. Dunn points out that the majority of cases of the clinically indigestion type of malnutrition are due to a simple intolerance of fat or casein, and that the undigested fat or casein acts simply as an irritant, and produces malnutrition simply through deficiency of absorbed nourishment. There is no evidence, in this type of case, of any more far-reaching food injuries exerting a toxic influence on metabolism. The cause in this indigestion type is equally likely to be fat or casein; if the former, a low fat and high proteid is the proper treatment; if the latter, a split proteid. There are probably cases of severe intolerance of both fat and casein, which can only be successfully treated by breast milk. The examination of the stools for fat or casein is a means of diagnosis of the greatest possible value in this type of case, enabling the physician to direct the treatment properly from the start. This type of chronic intestinal indigestion is common in actual practice.

### New York Medical Journal.

*February* 1, 1913.

1. The Curability of Cervical Cancer of the Uterus. LeR. Broun.
2. The Newer Teachings of Diseases of Gastrointestinal Canal. V. M. I. Knapp.
3. Medical Education: An Unsolved Problem. I. Dyer.
4. Typhoid Fever: Its Milk Free Treatment. W. N. Johnson and C. C. Watt, Jr.
5. Pulmonary Tuberculosis and Peripheral Nervous System. J. L. Pomeroy.
6. Scarlet Fever. W. L. Somerset.
7. Prescribing Glasses. D. F. Harbridge.
8. Meatotomy. E. G. Ballenger and O. F. Elder.
9. A Case of Apoplectic Malaria. B. Kaufman.

4. **Milk-Free Treatment of Typhoid Fever.**—W. N. Johnson and C. C. Watt report their results in the treatment of sixty-five cases of typhoid fever during the recent epidemic at Germantown, Pa. The dietetic treatment, on which the greatest reliance was placed for the results obtained, and which in the author's opinion was responsible for the very low percentage of cases with diarrhea, distention, and hemorrhages, and for the absence of perforations, consisted of broths, soups, gruels, gelatin, eggs, sugar of milk, and butter. Milk was absolutely eliminated, except in the convalescent stage. Great reliance was placed on gelatin, which was given almost *ad libitum*. According to Kemp, the ingestion of 7.5 per cent. of the total heat requirement of the organism in the form of gelatin spares twenty-three per cent. of the body's proteid. There is a total of 2,800 calories required by a man of 154 pounds weight (Chittenden); 210 calories in gelatin are necessary (one gram of gelatin contains 4.1 calories), so about fifty grams of gelatin, or about 1.5 ounce, are necessary. This amount in one quart of water gives a five per cent. solution, and can be flavored with lemon, vanilla, orange, or sherry, and sweetened with sugar of milk, and be given in divided doses during the day—between other feedings. Gelatin lessens the tendency to hemorrhage, in the author's opinion, and was largely accountable for the freedom in these cases from this serious complication. If venous thrombosis occurs, gelatin should be stopped. The gruels (barley, rice, and oatmeal) may be made of different

consistency. It is well to begin with a thin gruel (strained) and note the effect, and gradually thicken it if well borne. There were only four deaths in this series of cases.

5. **Pulmonary Tuberculosis and Peripheral Nervous System.**—J. L. Pomeroy notes that symptoms from disturbance of the peripheral nervous system occur not infrequently in pulmonary tuberculosis. The clinical picture presented is often confusing and at times of misleading diagnostic nature. It does not seem to be generally understood that even at the earliest one may find as a part of the symptomatology of this disease disturbances in the nervous system simulating rheumatism, neuralgia, or myalgia. There may be shoulder joint pain; or pain in the arms, on the chest, in the abdomen, in the back, or in other parts of the body. Schmidt, in 1899, described a peculiar painful area under the clavicle over the affected apex. This was to be demonstrated by pressing the finger tips down into the supraclavicular space. He called this *unilateraler Plexus Druck Schmerz*, and found it a quite constant sign or symptom in early tuberculosis. He attributed this symptom to adhesive inflammation at the apex of the lung, which involved the brachial plexus. Herpes zoster is a frequent symptom of pulmonary disease. Erythema nodosum is not uncommon in pulmonary tuberculosis. Obstinate sciatica, painful back, occipital neuralgia, painful toes and heels, *morbus digiti* (dead finger) are among the many curious complications met with in the clinical course of pulmonary tuberculosis. Many of these cases show actual evidence of neuritis, absent or exaggerated knee jerks, a changed skin sensation, tenderness along the course of the nerves, and muscular changes.

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## Journal of the American Medical Association.

*February* 1, 1913.

1. Medical Sectarianism. J. B. Nichols.
2. A Recurrent Neuroblastoma of the Scapular Region. D. Symmers.
3. Melanotic Sarcomas Resulting from the Irritation of Pigmented Nevi. H. K. Gaskill.
4. Antityphoid Vaccination in Children. F. F. Russell.
5. Edema and Nephritis. Further Experiments Proving the Invalidity of the Colloid-Chemical Theory. A. R. Moore.
6. The Colloid-Chemical Theory of Water Absorption by Protoplasm. A Third Response to Some Criticisms. M. H. Fischer.
7. A Sign Indicative of Chronic Appendicitis. C. D. Aaron.
8. Protection and Repair of the Perineum. G. Baughman.
9. Early Paresis. Importance of Its Recognition; Differential Diagnosis; Medicolegal Considerations. A. Gordon.
10. Sex Instruction in School. P. Zenner.
11. Involvement of the Ovary in Epidemic Parotitis, With a Report of Two Cases. H. Brooks.
12. Arteriovenous Anastomosis. Successful Reversal of the Circulation in All Four Extremities of the Same Individual. B. M. Bernheim.
13. Experiments on the Cultivation of the Virus of Poliomyelitis. Fifteenth Note. S. Flexner and H. Noguchi.
14. The Serum Treatment of Tetanus After Symptoms Have Developed. F. van der Bogert.
15. A Rapid Method for Colloidin Sections. M. Buchsbaum.
16. Ganglionic Glioneuroma of the Optic Nerve. G. C. Ruhland.

3. **Melanotic Sarcoma.**—H. K. Gaskill reports a case of melanotic sarcoma rapidly developing from a pigmented mole of the left foot which had been treated as a wart and had been subjected to considerable irritation. After an operation for its removal metastases appeared at various points on the leg and later on the trunk as high as the third rib and there developed the cancerous cachexia, edema of legs, abdominal ascites and general emaciation. The patient succumbed about seven months after the operation; no autopsy was allowed. The author insists on the importance of viewing with suspicion cases of this type of melanotic nevi, irregular in outline, waxy, smooth, frequently only slightly elevated and of a dark purplish or black color, and emphasizes also the importance of extensive operative measures if these growths show a tendency to extend.

7. **A Sign in Chronic Appendicitis.**—C. D. Aaron calls attention to a diagnostic sign which he has found exceedingly valuable in deciding when and when not to recommend operation for chronic appendicitis. In many cases he has been able to induce a referred pain or distress in the epigastrium or left hypochondrium, or in the umbilical, left inguinal, or precordial region by a continuous firm pressure over the appendix at McBurney's point. Many patients on whom an appendectomy has been performed fully recover from their apparent digestive disturbance. The digestive symptoms are caused by an irritation of the nerves, which reflexly induce a perversion in the secretion of gastric juice. In view of the difficulty of diagnosis of cases of chronic appendicitis without frequent recurring attacks this symptom is of special value; moreover it will explain many cases of gastric and intestinal disease for which the appendix is responsible. McBurney's tender point may be found in many cases of appendicitis though not in all, and this referred pain on pressure is regarded as a valuable sign in the diagnosis of chronic appendicitis itself.

9. **Early Paresis.**—A. Gordon states that while the clinical picture of paresis is characteristic in its advanced stages, the same cannot be said of the early period of the disease. The beginnings are insidious and always progressive. The earliest psychic manifestation is the slow irregularly progressive dementia which is naturally first observed in cultured individuals. Memory is usually affected early in the disease. The patient shows defects in his work, mistakes in figures and in writing; with these there may be seen neglect of personal appearance and oddities in behavior and irregularity in habits. The character and disposition are changed. There may be apparent a neurasthenic depression or a hypermanic exaltation and perversion of the moral sense. The defective memory, attention, observation, judgment, and disposition constitute the most important psychic alterations in the early stage. There are three types of bodily manifestations that not infrequently announce the oncoming paresis—apoplectic and epileptic seizures and attacks of aphasia. Vertigo is another manifestation. Another early bodily symptom is pupillary inequality which the author considers almost pathognomonic. The characteristic speech and tremor are infrequent in the early stages. The author places special stress on the lymphocytosis in the cerebrospinal fluid, the Noguchi precipitation test and the Wassermann reaction. In case of cerebral syphilis there is more difficulty, but the character of the progressive dementia is different and the presence of headache and local symptoms often aid in the diagnosis. In chronic alcoholism and in lead-poisoning syndromes occur closely simulating paresis, but if the Wassermann and other tests mentioned are absent and the symptoms disappear after the withdrawal of alcohol the differentiation can usually be made. In lead encephalopathy the dementia seems to dominate the clinical picture from the outset.

13. **Cultivation of the Virus of Poliomyelitis.**—S. Flexner and H. Noguchi report that they have succeeded in cultivating on artificial media the virus of infantile paralysis. They employed for their experiments tissues from the brain and spinal cord of human beings who died of epidemic poliomyelitis, and of monkeys the subjects of the experimental disease. Part of the tissues had been preserved for many months in 50 per cent. glycerin solution and were free from ordinary bacterial contamination, as were the fresh tissues. The cultivations were conducted both with Berkefeld filtrates and tissues in substance. The culture mediums consist, first, of sterile, unfiltered ascitic fluid or of brain extract to which fragments of sterile rabbit kidney and a layer of paraffin oil have been added, and of these plus 2 per cent. nutrient agar-agar in proportions of 1 to 2. The first mediums permit of a slow growth not visible to the naked eye, while the second (which are unsuitable for obtaining the initial growth) yield, after several days, visible minute colonies clouding the tubes. The cultivations are conducted under anaërobic conditions, and the colonies do not ascend to the summit of the deep

layer of solid medium. The minute colonies are composed of globular or globoid bodies, averaging in young cultures 0.15 to 0.3 micron in size. The bodies appear in a variety of arrangements: single, double, short chains and masses. Often they appear embedded in a material of different refractive index. In older cultures certain bizarre forms have been noted. The cultivated bodies stain a pale reddish violet in Giemsa's solution, and bodies of identical appearance have been demonstrated by Noguchi, also with Giemsa's solution, by a specially devised method in films prepared directly from the nervous tissues. Monkeys have been inoculated with the cultures. Two series of inoculations have been made and a third series is in progress. Cultures from human tissues in the third, and from monkey tissues in the fifth generation have caused typical experimental poliomyelitis in the monkey. The findings at autopsy and the microscopic appearances of sections of the spinal cord, medulla, and intervertebral ganglia were characteristic of the disease. From the nervous tissues of these animals other monkeys were successfully inoculated and pure cultures recovered.

## The Lancet.

*January* 25, 1913.

1. The Treatment of Inoperable Cancer. Sir Alfred Pearce Gould.
2. The Etiology of Endemic Goiter. R. McCarrison.
3. The Treatment of Meningitis of Otitic Origin. W. Milligan.
4. On a Case of Adenomyoma Uteri. J. B. Hellier and M. J. Stewart.
5. Hypertrophic Stenosis of the Pylorus in Adults. H. G. Barling.
6. Malaria in India and the Birth and Death Rate. W. H. Kenrick.
7. A Preliminary Communication on the Pathogenicity and Virulence of Bacteria. F. H. Thiele and D. Embleton.
8. The Jugular Pulse. H. W. Verdon.
9. A Case of Hair Cast of the Stomach; Gastrotomy; Recovery. L. Storey.
10. Necessity of a Better Classification of Epileptics. W. Alexander.

**Treatment of Inoperable Cancer.**—Sir Alfred Pearce Gould discusses this subject under the two headings: (1) the general treatment of cases of inoperable cancer, and (2) the special treatment of cancer other than by operation for its removal. In the general treatment the importance of physical and mental rest is emphasized. Strict cleanliness must be observed. The diet should be simple, easily digestible, and varied. Alcoholic stimulants of all kinds are to be avoided. The regular action of the bowels must be attended to. The following palliative operations are referred to: Gastronomy is a most valuable procedure in cases of malignant stenosis of the gullet. In the case of irremovable cancer of the colon or rectum, colostomy is to be performed if there is marked obstruction, severe pain, or free hemorrhage. Cystostomy is sometimes of value in cancer of the bladder or prostate. Gastroenterostomy in cases of irremovable pyloric stenosis is generally attended with great benefit and notable prolongation of life. Neurectomy for the relief of severe pain in properly selected cases has a place in surgery. Diathermic coagulation as a means of removing sloughing and ulcerating growths without pain and without hemorrhage is superior to all forms of curettage or cauterization. Among the non-operative measures the author speaks first of the *x*-rays. By the use of these in cancer of the breast he has seen foul ulcers cleaned, and some of them have healed up entirely. The following cases are reported by the author as having responded favorably to the action of radium: adenocarcinoma of the abdominal wall, malignant growth of the superior maxilla, tumor of the parotid gland, sarcoma of the femur, and a malignant growth in the right groin.

2. **The Etiology of Endemic Goiter.**—R. McCarrison concludes that thyroid enlargement can be experimentally produced in man within a few weeks by the administration of the suspended matter separated by filtration from goiter producing waters. Thyroid enlargement cannot be so produced when the suspended matter is boiled. The goiter produced in this way must almost certainly be due, not to the mineral but to the living component of the suspended matter. While it cannot be said to be definitely proved by these experiments that filtration through a Berkefeld filter wholly deprives the water of its goiter-producing properties, water so treated does not appear to be capable of causing goiter in man within a period of fifty-five days. The results of these experiments and the observations the author has already quoted indicate that the living excitant of goiter exists in greatest abundance in the deposit at the bottom and sides of water-channels, tanks, wells, and other receptacles of goiter-producing water. The following are the characteristics exhibited by experimentally produced goiter in men: (1) It usually appears about the fifteenth day of the experiment. (2) It shows a marked tendency to fluctuate in size. (3) It reaches its point of maximum size between the twenty-fifth and thirtieth day of the experiment. (4) The enlargement of the gland is not great, nor is it progressive under the conditions of the experiment. (5) It is accompanied, as a rule, with certain subjective symptoms of throbbing in the neck and feelings of fulness and discomfort. (6) It may completely disappear under the conditions of the experiment. Soil is also a vehicle of the living contagion of goiter. Limestone and lime-bearing rocks are most commonly associated with the disease. These porous rocks form the normal habitat of the organic substances that cause the disease. What, then, the author asks, are the ideal conditions for the development of goiter? They are to be found in a country district with an agricultural population living on a porous soil, which soil contains much organic matter and by virtue of its porosity or slope admits of the ready passage of organic matter into the unprotected streams and wells that are the water-supply of the people. It is in mountainous countries where limestone rocks abound that these conditions are most frequently found in combination. Consequently, goiter is pre-eminently a disease of the hills, and its relationship to the soil is clear.

7. **Pathogenicity and Virulence of Bacteria.**—F. H. Thiele and D. Embleton have found as the result of their investigations that ferments form an important normal mechanism of defence against bacterial invasion. The ferments performing this important function are: (*a*) the normal panenzyme, (*b*) the slightly differentiated specific enzyme, (*c*) the thermolabile specific coenzyme or amboceptor, and (*d*) the thermostable specific coenzyme or amboceptor. These last two supplement and accelerate the action of the ordinary enzyme. The action of the ferment is to bring about proteolytic digestion of the bacteria. Exotoxins and endotoxins are bacterial protoplasm and are not primarily toxic *per se*, but only become so when acted upon by the ferments. The action of the ferments on the bacterial protoplasm is to produce toxic early proteolytic digestion bodies. These bodies, besides being toxic to the animal, are also aggressive in the sense of Bail—*i. e.* are antiphagocytic. The action of this toxic substance, besides being aggressive, is to produce (*a*) in large amounts, death; (*b*) in lesser amounts, fall of temperature; and (*c*) in small amounts, fever. This substance is the cause of death in all bacterial infections. The virulence of a bacterium is dependent upon the power of exuding around itself a zone of its cytoplasm, which remains in position and acts as a protective shield. The production of a zone of ferment equilibrium in this shield protects the bacterium itself from the penetration of the ferment. The shield thus acted upon is also aggressive to phagocytosis. Pathogenicity is due to (*a*) the virulence of the bacterium, and (*b*) the relative activity of the ferment to the bacterium. Thus, the authors hold, one should say that immunity is due to the ferment action and phagocytosis—*i. e.* it is cellulohumoral.

## British Medical Journal.

*January 25, 1913.*

1. A Report of the Work Carried Out at the Radium Institute From August 14, 1911, to December 31, 1912. A. E. Howard Pinch. Appendix Report of the Chemicophysical Laboratory. W. L. S. Alton.
2. The Diagnosis and Treatment of Cancer of the Rectum. W. E. Miles.

1. **Report of the Radium Institute.**—A. E. Hayward Pinch describes the various forms of apparatus employed at the Radium Institute of London, these forms including flat varnished applicators, capillary glass tubes filled with radium sulphate, and radium emanation collected in glass tubes or dissolved in distilled water or weak saline solution. The screens employed as filters for the different rays consist of aluminum, silver, or lead. Very different results are obtained with epitheliomata affecting the glabrous skin as opposed to those involving mucous surfaces. Epitheliomata of the face, trunk, or extremities, if flat and superficial and accompanied by little or no ulceration, give satisfactory results when treated with quarter or half strength apparatus, screened with 0.2 mm. of lead, the exposures varying from six to twelve hours' duration, spread over a period of three or four days. The retrogression of the growth is quickly brought about and little or no scarring results. Ulcerating epitheliomata without much adjacent infiltration, require treatment with quarter or half strength apparatus applied unscreened for a total exposure of two to six or eight hours, spread over a period of four or five days, and repeated after an interval of six weeks if necessary. A destructive reaction follows, but the result is usually quite good, and there is but little cicatricial contraction. Ulcerated epitheliomata with great infiltration require prolonged treatment with heavily screened apparatus emitting "ultra-penetrating" rays. Exposures of thirty to sixty hours given during one week, and repeated in five or six weeks' time are best; but if the growth shows signs of rapid extension the borders should be given a vigorous treatment with unscreened apparatus. Epitheliomata of the tongue and of the buccal, gingival, and pharyngeal mucous membranes are almost uniformly disappointing in their ultimate response to radium therapy. Temporary improvement is not infrequently seen, and this sometimes goes as far as disappearance of the original lesion; but the treatment has practically no effect in preventing or delaying the appearance of metastatic deposits in the cervical glands and elsewhere. The rate of growth of the infected glands can often be retarded by the prolonged and persistent use of the "ultra-penetrating" rays. If the dose given be a large one, the glands sometimes break down and discharge a milky-white fluid through a small sinus, and it is remarkable that ulceration of glands thus treated rarely occurs. Considerable difficulty is experienced in giving satisfactory exposures within the oral cavity, as patients are often unable to tolerate the presence of applicators in their mouth for the necessary length of time, and should the reaction be at all pronounced the congestion of the tissues occasions great discomfort. There is the further danger that a severe reaction may act as a stimulus to the original growth, increase its size, and hasten metatasis.

In cases of inoperable malignant disease of the uterus radium will often bring about results which cannot be attained by any other known method of treatment. The hemorrhage is arrested, the discharge is diminished in amount and rendered inoffensive in character, the ulceration is healed, and the pain is greatly relieved. The rate of growth is checked, sometimes completely arrested, and the surrounding infiltration and induration are so much lessened that in a few instances cases previously declared to be inoperable become operable. The treatment is best carried out by the introduction of a tube containing 50 to 100 mg. of radium, screened with 2 mm. of lead and 3 mm. of rubber into the cervical canal, or, if this be not practicable, into the posterior fornix, a large flat strong applicator screened with 2 mm. of lead being placed on the abdominal wall over the fundus of the uterus. The exposures should be prolonged, and should be from thirty to sixty hours' duration, spread over a period of from five to ten days. The series of exposures should be repeated at intervals of not less than six weeks. The action of radium is, however, only local, and though it may, and often does, check the rate of growth, yet in most cases dissemination will sooner or later occur, and the disease spread to parts beyond the effective range of radium. In carcinoma of the rectum and of other parts of the lower alimentary tract, radium therapy not infrequently proves of considerable value, but it is extremely difficult to say what are the factors which determine or contribute to the success of the treatment. Speaking in general terms, the application of radium results in the arrest of hemorrhage, the healing, partial or complete, of any ulcerated surface, a diminution of the amount of the discharge, less pain, and a retardation of the rate of progress. In some instances more striking changes manifest themselves. The growth shrinks in size, undergoes a fibrous transformation, and becomes much less fixed to the underlying tissues, so that a carcinoma which before radium treatment was regarded as inoperable can be easily and completely removed. A few patients manifest an unusual degree of susceptibility to radium when applied within the rectum, and a relatively short treatment of eighteen to twenty-four hours with heavily screened radium is followed by a severe though transient proctitis. The routine method of treatment in rectal cases is the introduction, through an operating sigmoidoscope, if necessary, of 50 to 100 mg. of radium screened in 2 mm. of lead and 3 mm. of rubber. It is maintained in position by a stem of soft silver wire, which is bent at an acute angle at the anal orifice, and fastened by strapping and a T bandage in the fold between the buttocks. Each exposure is from six to twelve hours in duration, and is repeated daily until a total treatment of thirty to sixty hours has been given. The series should be repeated after an interval of six weeks.

The results of radium therapy in the treatment of cancer of the breast are, on the whole, encouraging, and this is especially the case when the primary growth is of the sclerotic rather than of the medullary type, when the secondary deposits occur in the skin lymphatics and lymphatic glands, and there are no internal metastases. Radium should never be used as a substitute for operative interference, but when the case is inoperable it will do much to relieve pain, promote the healing of ulcerated surfaces and check the growth of the secondary deposits. In not a few cases it will bring about the almost complete absorption of superficial carcinomatous nodules and infected glands. Instances have been noted in which the physical signs were strongly suggestive, if not positively indicative, of carcinomatous deposits in the lungs, and the prolonged application of from thirty to forty hours of a large quantity of radium screened through 2 mm. of lead has brought about an apparent resolution. In rapidly growing cancers of the encephaloid type radium can do little but relieve pain. The postoperative lymphatic engorgement of the arm on the affected side is sometimes distinctly benefited by the application of a heavily screened tube of 50 to 100 mg. of radium placed at the apex of the axillary cavity, an exposure of twenty-four to thirty hours spread over five days being given. Rodent ulcers constitute of all forms of malignant disease the one which is most amenable to the action of radium. Untreated rodent ulcers not exceeding 2 cm. in diameter, and not affecting mucous membrane, cartilage, or bone, almost invariably yield to one exposure of one to three hours' duration with a full strength applicator unscreened.

### Berliner klinische Wochenschrift.

*January* 20, 1913

**Nystagmus in Febrile Diseases.**—Von Czyhlarz investigated a series of febrile affections for the presence or absence of nystagmus. While the research was in progress Beck and Biach published a monograph on the same subject, their work having been done under Professor Chvostek. The results in the two series of observations show an essential agreement. There can be no doubt that febrile nystagmus is of frequent occurrence. But while the other Vienna men found nystagmus absent in tuberculosis (except the miliary form) and typhus, the author found that there was nystagmus late in the course of typhoid, and persisting well into convalescence. He also found the phenomenon in ordinary pulmonary consumption with high temperatures, but it is much less common than one would be led to expect. Nystagmus appears to be especially common in fevers which come on suddenly—erysipelas, influenza, pneumonia, articular rheumatism. The febrile type appears to stand in some relation with a toxic type, noted, for example, in acute cinchonism and acute alcoholism; and is itself doubtless of toxic origin.

**Blood Finds in Tuberculosis**—Rabinowitsch discusses fully the subject of the paradoxical occurrence of tubercle bacilli in the blood of subjects of all kinds, including the apparently healthy. She traces the subject historically, even as far back as Virchow's time, when in 1891 he discussed the mobilization of bacilli in old foci, which could lead to a bacillemia. This mobilization was attributed to the action of tuberculin. Studies of blood after injection of tuberculin seemed to antagonize Virchow's belief. Naturally the occurrence of bacilli in the blood in general miliary tuberculosis was never at any time in dispute, because it furnished the sole rationale of that affection. Only in quite recent years has the claim been made that the bacilli may often be found in the blood of known tuberculous and other subjects without any apparent clinical significance. Some Japanese investigators have asserted that bacilli are present in the blood of any individual who gives a positive von Pirquet reaction. The discovery of the bacilli in the blood of subjects who may actually be pronounced free from tuberculosis has naturally plunged the entire subject into a temporary chaos.

**Unilateral or Bilateral Strumectomy?**—Tietze's unilateral operation is a total extirpation, while his bilateral procedure is a bilateral resection. Comparing both series of operations in his own clinic with each other and with the results of other operators he concludes that unilateral extirpation is the smoother procedure in every way from the technical viewpoint. The parathyroid and recurrent nerve of the operated side need not be compromised. Hence whenever one side is chiefly involved, the indication for unilateral extirpation is clearly present, the isthmus being divided. Bilateral resection, however, has a field in diffuse bilateral goiter, wedge-shaped pieces being excised and the organ then sutured. The lower poles and the isthmus are left intact.

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### Münchener medizinische Wochenschrift.

*January* 21, 1913.

**Botulism.**—Schumache reports an episode of botulism attacking six persons, the *Bacillus botulinus* having been successfully demonstrated as the cause. A man and wife were taken with colic in the night, but went to their work as usual. They were soon compelled to return home on account of prostration and vertigo. The colic had not led up to diarrhea or vomiting. Dysphagia next set in with hoarseness and dyspnea. During the first day there also developed bilateral ptosis, which was the forerunner of numerous other eye symptoms—mydriasis, diplopia, paralysis of accommodation. There was persistent constipation with retention of urine. One physician diagnosticated diphtheria by reason of the associated hoarseness and dyspnea, and complete inability to swallow. These symptoms were, in fact, the threatening part of the disease. There was no constitutional reaction in the ordinary sense, as temperature and pulse were normal throughout. Pilocarpin gave some temporary relief. The man died on the sixth day with clear sensorium. Autopsy within 24 hours showed marked congestion of the internal organs, fluid state of blood, and edema of lungs, which last had apparently caused death. Diphtheroid membrane was present in the throat. The mother of the patient died a similar death, having presented paralysis of deglutition and speech disturbances. The patient's wife, already mentioned, recovered after having presented the same train of symptoms. She was left with speech disturbances and slight paresis of the right hand. Three children of the family were ill, but recovered. The author now proceeds to establish the nature of the malady, which was clearly one of wholesale poisoning, or infection. Rabies was first readily excluded, as was mushroom poisoning; poisoning by the atropin group and by hemlock (sometimes mistaken for parsley) could also be excluded. Diphtheria had been thought of only in connection with the first victim because of the paralysis of the eye and throat. But one condition remained for consideration, to wit, botulism. All had eaten of raw ham which had a bad odor and taste, and had on that account been given to the dog. Four members of the family who did not partake of this ham escaped the disease. Further, some of the ham had been cooked and eaten by one child who had not touched the raw ham. She remained well. One child may have owed his life to his school teacher who had told him never to eat ill-smelling meat. The dog, who ate between one and two pounds of the raw ham, was but slightly indisposed. Some of the meat remained and was variously tested. A filtered infusion poisoned mice without fail when simply eaten. Search was now made for bacilli and the *B. botulinus* was obtained in pure culture. In theory this affection should be amenable to serum therapy, as it represents a pure toxicosis like diphtheria and tetanus, a fact which has long been recognized.

**The Hypophysis and Diabetes Insipidus.**—Simmonds relates a case history which shows beyond doubt that a lesion of the hypophysis can produce persistent polyuria. The organ, now known to possess three, instead of two separate portions, exerts an unusual variety of functions. Only the anterior portion is concerned with skeletal growth. The posterior lobe, long believed to be inert, was eventually brought in relationship with metabolism and the genital glands. Finally, the third, or middle lobe, or interlobular portion, first isolated by Schäfer, stands in definite relationship with the renal blood vessels and cells. While acromegaly and adiposogenital dystrophy have been sometimes accompanied by diabetes insipidus, the present case seems to be the first isolated example of the latter and was evidently determined by a cancerous metastasis.

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### Deutsche medizinische Wochenschrift.

*January* 9 *and* 16, 1913.

**Calcium Metastases and Calcium Gout.**—Schmidt concludes that calcium overloading of the blood may alone lead to deposits in the sound tissues. This has been shown by Tanaka's researches and many forms of human calcium metastases in skeletal disease (without presence of nephritis). There also occur metastases without skeletal absorption, but in these as in the majority of all cases one expects to find the nephritic component. In cases without nephritis and without skeletal disease one is forced to

assume not the existence of a primary tissue dyscrasia but an altered solubility of calcium in the blood just such, in fact, as occurs secondarily in kidney disease. In classic cases with both osseous and nephritic participation the author believes that the chief factor still lies in the altered solubility, the other factors being only contributory. In most cases of primary nephritis and bone disease one does not see calcium gout. While the tissues in which the metastases occur do not appear to be the seat of any primary dystrophy, there are other elements of predisposition—some organs are physiologically predisposed, as the lungs, gastric mucosa, kidneys, blood-vessels, etc. It is conceivable that in pathologic states such predisposition will be increased.

**Protozoa Finds in Swimmers' Conjunctivitis.**—Huntemüller and Paderstein report numerous finds of Chlamydozoa—an alleged cause of trachoma, in the discharges of patients with so-called "swimming tank conjunctivitis." In not all cases was there a history of exposure in these public tanks, but the resemblance was unmistakable. In most cases the clinical picture was one of acute trachoma, and there was a history of use of the public tanks very shortly before the lesions appeared. This condition was first noted many years ago, and the cumulative or pseudoepidemic incidence was set down purely to ordinary trachoma. The series of cases now described by the authors show the same cumulation of incidence and trachomatous picture and the same history of the swimming tank exposure. But the first of these tank epidemics (about 1899) was found after following up the cases to be a relatively harmless affair. The so-called trachoma bodies had not then been described. Now the first step was naturally a search for them. This the authors instituted thoroughly, including inoculation experiments on monkeys. It was decided that the finds very closely resemble those of manifest trachoma. Yet in view of the mild clinical course one cannot determine whether swimming tank conjunctivitis is a mitigated trachoma or simply a mild affection belonging to a common family group.

**Nongonorrheic Ophthalmia of the Newly Born.**—Credé-Hörder describes this affection as follows: The eyelids adhere; the palpebral fissure and continuous surfaces are reddened; the upper eyelids are moderately swollen; the secretion is purulent or seropurulent; conjunctiva as a whole is injected; cornea clear. Hence we see here no difference whatever from a beginning gonococcic conjunctivitis of good prognosis. The microscope, however, shows no gonococci but instead some other pathogenic germ or germs—Gram positive diplococci, pneumococci, or the colon bacillus. Since conjunctivitis from these causes is long known, the chief lesson to be learned refers to their incidence at birth and the obligation of an accurate diagnosis in all cases. For all these conditions are relatively harmless and furthermore their presence carries with it no stigma.

**Present Status of Functional Renal Diagnosis.**—Henius briefly sums up the methods of diagnosis now in vogue. Authors differ considerably in regard to the determination of urea and the chlorides. Some hold this to be relatively unimportant, or as giving only untrustworthy results. With such differences of opinion as to essentials we may pass on to cryoscopy, in which field, however, we find precisely the same discord—one school regarding it as practicable and valuable, the other as worthless, with intermediate shades of opinion. The third resource—elimination of coloring matters, including chromocystoscopy—has the support under one form or another of the majority of specialists, but Rovsing, who is one of the leading advocates of ureametry as a resource pronounces it of no value at all, while Casper, a champion of cryoscopy, is lukewarm as to its usefulness. The phloridzin test has partisans and enemies. The most recently introduced test—phenolsulphonephthalein—seems thus far to have only a few adherents. The other resources in use need not, Henius says, even be enumerated. The author sums up his general review of the subject by stating that our knowledge in this province is only in its initial stages.

**Prostatic Elements in Urethrorrhea ex Libidine.**—Pfister refers to the slight ropy discharge from the urethra which follows erections of the penis and was once believed therefore to be dependent in some way on pressure differences resulting from expansion of the collapsed urethra, or else is a necessary step in rendering viable the spermatozoa. The fact, however, that the phenomenon occurs in the absence of erection—especially in old men—in the presence of subjective sexual excitement, led to the introduction of the term urethrorrhea ex libidine. The old belief that the secretion is of prostatic origin seemed to have been disproved by extended microscopic studies. Pfister, however, finds prostatic elements present, at least in certain cases. A well preserved man of 62, who became sexually excited in the presence of newly made female acquaintances, suffered from a urethral discharge, which contained as formed elements only corpora amylacea from the prostate. The latter organ was found to be normal, and defecation spermatorrhea was readily excluded. The discharge, from its mucous component and negative character, was evidently from Cowper's and Littré's glands. The problem was how to account for the presence of the corpora amylacea without other formed elements from the prostate. The most plausible supposition was that these had entered the prostatic urethra directly, not through the prostatic ducts, or at least only at the exits of the latter. The association was therefore fortuitous—two conditions existing side by side, to wit: the urethrorrhea ex libidine and atony of the prostate. The coexistence of these two conditions, in men of advancing years, Pfister says, has been remarked by Markuse.

**Hemicanities in Hemiplegia.**—Loeb relates an interesting case of this association which, however, can only be classed as freakish behavior. Graying of the hair, moustache, etc., of one-half of the head and face after a paralytic stroke is so extremely infrequent that no significance can be attached to it, save as a document to the belief that sudden graying is possible, which many deny. From this and a few other observations some light may possibly be shed on sudden blanching of the hair, not only *en masse* but in patches, the latter phenomenon being not so rare.

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**Acute Vascular Lesions Produced by Pneumococci.**—T. P. Sprunt and J. A. Luetscher note that mice dying several days after injections of pneumococci, both living and dead, frequently show at autopsy large intrathoracic hemorrhages. The histological study of the thoracic organs indicates that there occurs in each case a sharply circumscribed, acute degeneration of the wall of some large vessel, usually the ascending aorta or one of the pulmonary arteries. This degenerated portion is torn out by the pressure of the blood with an almost complete disappearance of the vessel wall, leading to a gross hemorrhage. A similar change is occasionally found in the walls of the veins which contain cardiac instead of smooth muscle. The authors have found this lesion only in mice which had been recently inoculated with pneumococci. Negative cultures at autopsy, the lack of inflammatory reaction, and the occurrence of the conditions after injection of dead pneumococci suggest that the cause may not improbably be a toxic degeneration of the vessel wall brought about by the poisons of the injected organisms.—*Journal of Experimental Medicine.*

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### THE INSURABLE INTEREST.

The question of the insurable interest of the beneficiary is one which is usually worked out between the company, the agent and the applicant. When, however, circumstances appear in the case which create doubt or arouse suspicion, the examiner will usually be in a position to assist the company in clearing up the matter through his familiarity with the characteristic traits, habits, conditions of life and general surroundings of the applicant.

A contract for life insurance should be supported by a legal insurable interest which means that the beneficiary should have a lawful interest in the continuance of the life of the insured and not merely a monetary or speculative interest in the event of his death. The beneficiary should be dependent on the insured for support, or the insured should be indebted to the beneficiary for an amount sufficient to justify the sum insured, or the beneficiary should have some other substantial interest in the life of the insured. A satisfactory explanation should be called for whenever these requirements are not clearly and properly fulfilled.

The most common departures from the course of legitimate insurable interest may be divided into the following classes:

*Insurance on Wives in Favor of Husbands.*—An innate prejudice exists against the man who permits insurance to be issued on the life of his wife for his benefit except under certain circumstances. The husband usually regards himself as the provider for and the protector of his family, and the idea of any profit accruing to him through her death is repugnant even to the extent of being reimbursed for the necessary expenses of her sickness and burial. The reluctance of the companies to writ policies with the husband as beneficiary is not, however, entirely due to this sentiment; it is based upon significant statistics which show that the mortality among women insured in favor of their husbands, as a class, is greater than that among insured single self-supporting women, or women who took out insurance before marriage. It is suspected by many insurance men that some of this increased mortality is due to occasional absence of that care and protection which every husband should throw about his wife during illness, and that anxiety over the possibility of her death is softened in such cases by the prospects of the monetary compensation to come.

On the other hand, insurance on the wife's life may be quite legitimate and beyond criticism, and the companies are ready to issue policies as soon as this fact is made clear. These exceptions may be described as follows:

(a) A woman may be the beneficiary of an estate in trust, the income of which goes to some other person than the husband at her death. This income may be ample to allow comforts and luxury, and it is quite proper under such conditions for her to provide some means by which the husband can continue the same way of living in case of her prior death.

(b) A woman may have a separate and distinct income of her own and possess the desire to make the burden of her husband as light as possible. The husband will not have to pay the premiums and does not necessarily take any part in the transaction. The company should take steps to convince itself that the wife has the means to pay for the insurance.

(c) The husband may be an invalid and the wife anxious to provide for his support, if she should die first though in good health when the policy is issued. The wife in such a case is the provider to some extent, if not entirely so, and there will usually be no objection to the issuance of the policy unless the husband is afflicted with tuberculosis or some other infectious disease.

(d) The husband and wife may be partners in a business in which the death of either one would leave the survivor without the assistance of certain skill and ability of the partner or financial aid. Joint insurance on husband and wife has been found to be unprofitable, but there will be no hesitation on the part of the company to issuing individual insurance to either one or both with the wife or husband as beneficiaries, provided the inspection and commercial reports are favorable.

*Insurance on Minors in Favor of Parents.*—Insurance on minors is usually encouraged by the parents with the idea of teaching them the importance of saving and thrift. Enthusiasm on the part of the officers of the company in approving insurance for the purpose is, however, dampened when the beneficiary named in the application is the father or mother who will also pay the premium. It can not be forgotten that minors, even when they arrive at the ages of from 15 to 20, are still under the care and protection of their parents and depend upon them in the case of illness or accident, and insurance on such conditions is not altogether based on good principles. No company should write such a policy until it has instituted strict inquiries into the character and circumstances of the family.

The minimum age at which insurance will be written is usually placed at 15 years in order to prevent speculation as far as possible. When the minor is self-supporting and pays the premium, the question of speculation is practically removed.

*Insurance on Parents in Favor of Self-Supporting Children.*—If a man or woman of fairly advanced age is able to and intends to pay the premium, there is no special reason for refusing insurance, provided the age limit, which varies from 60 to 70 in the different companies, has not been passed. It should be kept in mind, however, that the premiums for ages above 60 are necessarily high, and that a careful inquiry as to the motives for paying so large an amount and the financial condition of such applicants is quite necessary.

Unfortunately, a great many men and women in advanced years of life have allowed themselves to be used as objects for speculation by selfish and unnatural children or designing sons-in-law who have paid the premiums themselves. When further explanations and a searching inspection establish this intention to speculation, or an inability of the applicant to pay the premium, the risk should be summarily rejected.

*Corporation Insurance.*—This form of life insurance is becoming more popular and calls for policies of large amount. There has been doubt in some quarters as to the wisdom of accepting these impersonal risks, but the experience of the largest and best advised companies has demonstrated that business of this character is legitimate and profitable if the inspection and commercial reports are entirely favorable.

The insurance is usually taken out on the life of some individual connected with the corporation,

whose ability, skill or influence is so valuable an asset that the welfare of the concern largely depends upon it. His value may be in the form of specialist in that particular line of manufacturing or business, inventor, originator, or in his executive ability. Capital has been invested in the enterprise chiefly on the strength of this man's unusually important services and would suffer in the event of his death.

In considering the issuance of insurance for this purpose, the companies must secure convincing proof in regard to the responsibility of the corporation, the soundness of its financial condition, the character of its officers and promoters, and the actual value of the insured to the concern.

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**Diabetes Mellitus and Life Insurance Examinations.**—F. Parkes Weber states that it is well known that not every case in which sugar is discovered in the urine should be refused for life insurance. He refers to the possibility of the temporary absence of sugar from the urine of diabetic patients, when undergoing medical treatment, becoming a source of serious error from the insurance point of view. Every one knows that in slight cases the sugar in the urine may be got rid of by suitable diet; and the use of certain drugs, such as aspirin and calcium iodide, has been said occasionally to have a similar effect. But it is not quite so generally well known that in grave cases of diabetes mellitus, in which sugar cannot be completely got rid of by ordinary dietetic methods, it may occasionally be temporarily banished by the employment for a day or two of (more or less disguised) starvation methods. Thus, in a young woman, aged 23 years, under the author's care in 1909 at the German Hospital of London, the sugar in the urine was reduced by careful dieting to about 70 grams for the twenty-four hours. On September 10 the diet was temporarily limited to 200 to 300 grams of olive oil in the day, with as much water as was wished for, and a codeine phosphate pill (which the patient had been taking three times a day) was continued. As a result of this disguised sarvation method sugar completely disappeared from the urine on September 12, and on September 13 the author ordered a return to the special diet for her diabetes. On the next day the urine contained 4.5 per cent. sugar again. During the days of exclusive olive oil diet the patient did not feel hungry or as if she was being starved. Once or twice she felt a little nausea, owing to the oil, but she looked well and had her usual somewhat florid complexion. She lost only about 4 pounds in body weight. She was not emaciated, and on the whole gained weight while she was in the hospital. This case was one of grave diabetes mellitus, but surely a life insurance examiner, had he examined her when the sugar disappeared, might have been deceived. The reaction for diacetic acid was indeed positive, but in the absence of sugar the examiner would hardly have tested the urine for diacetic acid. Other "hunger cures" or "starvation cures" can similarly temporarily remove the glycosuria. Thus, at the Edinburgh Medico-Chirurgical Society, December 15, 1909, F. D. Boyd brought forward a case of severe diabetes mellitus in which a single "hunger day" caused complete disappearance of glycosuria for twenty-four hours, the sugar reappearing afterwards in only small amount. G. Guelpa of Paris refers to the case of a man who was refused for life insurance on account of diabetes. The result of Guelpa's treatment by starvation and purgation was that on the evening of the second day of treatment the urine no longer reduced Fehling's solution. On the third day the man presented himself for a life insurance examination, and no obstacle to his acceptance could be found. In grave cases sugar may sometimes vanish from the urine on a trial of von Noorden's "oatmeal diet."—*British Medical Journal,* January 11, 1913.

**Albuminurics in Relation to Life Insurance.**—Dr. Soot Skirving, in a paper presented before the New South Wales branch of the British Medical Association, speaks of the attitude taken by him as Medical Referee toward applicants whose urine examinations showed albuminuria in varying degrees. Insurance societies, until recently, have looked somewhat askance on albuminurics in general, but he in his year's work has arrived at a distinction in these cases, dependable on several factors, such as age, previous condition of health, and family history.

These albuminuric cases are broadly divided into two classes—functional and organic. The factors determining functional and not organic albuminuria are as follows: (1) Absence of any recent cause for nephritis, such as the exanthemata, diphtheria, or a clear history of ordinary antecedent acute nephritis with its classical signs. (2) Absence of any of the ordinary stigmata of chronic renal disease, especially cardiovascular changes. (3) The fact that the proponent is under 25 and presents a healthy, wholesome appearance. (4) That the urine is of a good or even high specific gravity. (5) That the amount of albumin is very slight or moderate in amount—that it is not constant, *i.e.* that it is often absent at certain hours of the day, and frequently its appearance is influenced by food or by cold. (6) That the microscopical examination of the urine reveals no important suggestive abnormality. (7) That the blood pressure is not unduly high.

The impossibility of determining all these points in one urine examination of an albuminuric is realized, so three tests, about six hours apart, covering twelve hours, are made, and in frequent instances the urine is examined microscopically, and the blood pressure recorded.

If the above facts, taken generally, are favorable, and the applicant is under 25 years of age, he is accepted at the rate for age. If the applicant is over 25 and under 30, acceptance is advised at select rates or with moderate loading. Over 30, cases are often deferred or accepted with a heavier loading. As before mentioned, the family history, previous state of health, and age of the applicant have a strong bearing on the ultimate outcome of these cases. Each case must be judged on its own merits. In a synopsis of 156 cases presented, showing albuminuria, a little over 2 per cent. were women; 112 ranged from 16 to 25 years; 17 at 15 years or under, and 27 over 25 years.

Skirving, for all ordinary purposes, employs the time-honored Heller's cold nitric acid contact test, and Esbach's test, always remembering the possible presence of nucleo-albumin or urates. From the business or actuarial viewpoint, the admission of these functional albuminurics to the benefits of life insurance is advisable, as the greater majority turn out well. As to the financial success gained by the present attitude of the writer's company toward these cases, only time can show; but much evidently depends on the keenness of diagnosis of the medical examiner.—*Australasian Medical Gazette,* November 2, 1912.

# Book Reviews.

THE COURSE OF OPERATIVE SURGERY. A Handbook for Practitioners and Students. By Prof. Dr. VICTOR SCHMIEDEN, Privatdozent of Surgery in the University of Berlin, Assistant in the Royal Surgical University Clinic. With a Foreword by Prof. Dr. A. BIER. Second enlarged edition. Translated and edited by Arthur Turnbull, M.B. (Glasg.), M.A., B.Sc., Demonstrator of Anatomy in the University of Glasgow. Price $4.00 net. New York: William Wood and Company, 1912.

THIS volume represents more than the usual translation of a foreign work. The freedom from vague statements and relics of the German idiom indicates quite as well as his own statement the translator's entire familiarity with the actual performance of the operations described. To the American surgeon the book could not be and is not offered as a treatise on operative technique, but as a guide and handbook for students and practitioners taking a course in operative surgery in the laboratory it leaves little to be desired. The entire range of operative procedures is covered in a most complete and practical manner. There is no elaboration of methods or of details of technique, nor portrayal of unusual operations, and the directions are simple and explicit. Furthermore, much obsolete matter commonly found in such textbooks is most gratifyingly absent. The operations described are the simple standard ones, and represent the practice of Prof. Bier's clinic. While this is in some details at variance with American methods, the fundamental principles governing each operation are so well emphasized that objection can hardly be made. It is interesting to note in this connection that a surprisingly large number of the operations described are of American origin and are duly credited to their authors. The quality of the text is borne out and enhanced by the character of the illustrations. The 354 drawings and reproductions of photographs used to portray topographical anatomy and the details of technique or steps in the operations are uniformly good. One can not consider, however, that the inclusion of some 81 cuts of instruments, many of them of obsolete pattern, is a valuable addition to the book. In keeping with the excellence of its contents the book itself is thoroughly well made and printed and merits a wide acceptance.

PRACTICAL EUGENICS. By WILLIAM J ROBINSON, M.D., President American Society of Medical Sociology, etc. Price $0.50. New York: The Critic & Guide Co., 1912.

THE title of this book leads one to expect some exposition of how we may set about to improve the human race. In this, however, the book is disappointing, for the author limits himself to urging his belief in the dissemination of knowledge of the means for the prevention of conception, and of the use of venereal prophylactics. The author is very earnest, but throughout the book there is a certain coarse vein, and lack of appreciation for moral training and guiding ideals. This is to be regretted because the author takes a very sane view of the question of heredity, being quick to recognize the social and economic phases.

SLEEP AND THE SLEEPLESS. Simple Rules for Overcoming Insomnia. By JOSEPH COLLINS, M.D., Physician to the Neurological Institute of New York. Price $1. New York: Sturgis & Walton Co., 1912.

THIS work is written on popular lines, its aim being to aid those who are afflicted with sleeplessness to cure themselves, and accordingly ample information with regard to the means to be pursued to gain this end is given. It is essentially a book for the layman, and although founded upon the latest scientific knowledge and data, technical terms are avoided. Dr. Collins uses a direct and concise style of writing and his choice of language is, generally speaking, apt and well considered. In the first chapter, however, he makes a statement at the accuracy of which some would cavil. He says that old age comes upon us sooner than in the days of yore, whereas, it is the opinion of authorities that nowadays the span of life in a general way has lengthened and seems to be lengthening. Referring to the influence of the will over the mind and senses the author points out that the capacity to sleep can be acquired by effort in the same way as the capacity to think concretely or to run without getting out of breath. He also wisely draws attention to the fact that insomnia is a relative term. As in eating and exercise and many other actions which bear upon health the personal equation must be always considered and thus the amount of sleep that suffices for one individual would be in another productive of misery and a disorder of nutrition which might lead to disease. After emphasizing the point that a person's surroundings should be conducive to sleep, the treatment for the cure or, at least, the relief of insomnia is discussed. Dr. Collins pins much faith on baths and hydrotherapy of various kinds and indeed deals with the whole treatment of insomnia in a sufficiently thorough manner. The chapter on opiates and narcotics is especially well put and restrained. The book is peculiarly well adapted for the layman and is a pleasing mixture of science, history, quotation, literature and treatment.

STUDIES IN CANCER AND ALLIED SUBJECTS. Pathology. Conducted under the George Crocker Special Research Fund at Columbia University. Volume II. The Columbia University Press, New York, 1912.

FOUR volumes of studies in cancer are promised by the research workers of the George Crocker Fund: the first to contain a general report on the present status of cancer knowledge, the second to deal with pathology, the third with biology, surgery, biological chemistry and clinical pathology, and the fourth the anatomy. The second volume has now appeared, while the other three are said to be "in preparation." It consists of twenty-seven articles, the authors being Isaac Levin, M. J. Sittenfield, Robert A. Lambert, Frederic M. Hanes, Robert T. Frank and A. Unger. Levin and Sittenfield have worked mostly on animal cancer, studying its laws of growth, transmission and immunity in white rats. In additional articles Levin discusses etiology of human cancer, cancer among the American Indians, the hormone theory of the causation of cancer, etc. Lambert and Hanes have grown "in vitro" pieces of transplantable animal tumor and have studied the conditions of such growth and the possible light it may throw on cell life in general. Frank and Unger present an experimental study of the causes which produce the growth of the mammary gland. These numerous studies are preceded by a general introduction written by William G. MacCallum, in which he discusses the general questions of the cancer problem and points out the lack of real progress toward the solution of the problem, many of our most modern theories being little different from those proposed long ago. However, MacCallum acknowledges that "the last ten years have contributed marvelous things," and hopes that "the next ten years may tear aside the whole veil."

This general statement of the contents of the volume serves to show what creditable amount of work has been done in the short time of the existence of the Crocker Research Fund. Its value certainly deserves the sumptuous fashion in which the articles have been gathered for publication.

LES SPOROTRICHOSES. Par M. M. DE BEURMANN, Medecin de l'hôpital St. Louis, à Paris, et GOUGEROT, professeur agrégé à la Faculté de Médicine de Paris. Avec 181 figures dans le texte et 8 blanches hors texte. Price 20 francs. Paris: Librairie Félix Alcan, 1912.

THE authors of this large volume on sporotrichoses are creators as well of almost all our knowledge of the subject. It is their labors of the last decade that have resulted in uncovering the etiology, the pathology, and the treatment of a group of affections which have previously been taken for manifestations of syphilis or of tuberculosis. With a wealth of detail the authors picture and discuss the various skin and internal lesions of sporotrichoses and especially the fairly simple clinical and laboratory methods of diagnosis of these diseases.

The book is a model monograph and the importance of the subject to anyone who may meet with intractable skin lesions or obscure cases of visceral disease is such that the accquisition of the volume should be a duty. The excellence of the work of the two French authors makes the reading of it a great pleasure as well.

THE HUNTERIAN LECTURES ON COLOR-VISION AND COLOR-BLINDNESS. Delivered before the Royal College of Surgeons of England on February 1, and 3, 1911. By Prof. F. W. EDRIDGE-GREEN, M.D. Durh., F.R.C.S. Eng., Beit Medical Research Fellow. Price $1.50 net. New York: Paul B. Hoeber, 1912.

THE Hunterian Lectures of 1911 are two in number and form a volume of 76 pages. The first lecture deals "with the theory and facts of color-vision," the second "with the detection of color-blindness from a practical point of view." Professor Edridge-Green has evolved a theory of color-perception and of color-blindness largely his own, which he discusses in detail. The evolution of the color sense is discussed. To enable one to fully comprehend the reasoning of the author one must make a careful study of the subject. The lecture on the detection of color-blindness is quite complete and is excellent. To all who are engaged in the study of or in the detection of color-blindness a perusal of Professor Edridge-Green's Hunterian Lectures will be of value.

The Soul and Sex in Education, Morals, Religion, and Adolescence. Scientific Psychology for Parents and Teachers. With a Chapter on Love, Marriage, Celibacy, and Divorce. By Josiah D. Buck, M.D. Price $1.25. Cincinnati: Stewart & Kidd Company, 1912.

This book is to some extent an attack on the methods of the Roman Catholic Church in her endeavor, according to the author, to discredit and break down the free schools of this country. Dr. Buck upholds strongly free education and declares that without it scientific knowledge cannot but suffer. The book is uninteresting.

Neurasthenia Sexualis. A Treatise on Sexual Impotence in Men and Women. For Physicians and Students of Medicine. By Bernard S. Talmey, M.D., Former Psychologist to the Mothers' and Babies' Hospital and Gynecologist to the Yorkville Hospital. With Nineteen Drawings in the Text. Price $2. New York: The Practitioners' Publishing Company, 1912.

The subject of this little work, even when discussed by medical men for medical men, requires very careful handling. When such a work is of a semi-popular nature as is the one before us extreme care is needed in compiling the facts and setting them forth so as to be of real use. Although we do not think the book is necessary, nevertheless one may gather from it some useful knowledge.

The Orientation of Buildings of Planning for Sunlight. By William Atkinson, Fellow of the Boston Society of Architects. Price $2. New York: John Wiley & Sons. London: Chapman & Hall, Ltd., 1912.

This book is written with a very excellent purpose, that of setting forth the principles which ought to govern the planning of buildings with respect to sunlight. It appears to have succeeded in its object, the chapter dealing with the orientation of hospital ward partitions being especially worthy of attention.

Nutritional Physiology. By Percy Goldthwait Stiles, Assistant Professor of Physiology in Simmons College; Instructor in Physiology and Personal Hygiene in the Massachusetts Institute of Technology, Boston. Illustrated. Price $1.25 net. Philadelphia and London: W. B. Saunders Company, 1912.

It is rather difficult to classify this small volume on nutritional physiology. It certainly makes no pretence to scientific completeness, and the popular style in which the facts are presented suggests that it is designed for high school and freshman classes in the college. It is not a book which should be given to a medical student. The contents also are not entirely devoted to what one might strictly consider nutritional physiology, as there is a chapter on the circulation of the blood with simple mechanical illustrations. A serious defect is the entire absence of references to original articles. Many textbooks are named in an appendix, but this method does not replace for the student direct reference to the work of those who have really contributed something to physiology and chemistry.

Der jetzige Stand der Krebsforschung. Von Prof. Dr. Georg Klemperer, Direktor des Instituts für Krebsforschung der Königl, Charité und des Städt, Krankenhauses Moabit, Referat, erstattet in der Generalversammlung des Deutschen Zentralkomitees für Krebsforschung am 18 Mai, 1912. Price 2 marks. Berlin: August Hirschwald, 1912.

The general interest in the study of cancer which is manifested by a large number of laboratory workers is revealed in this review of the present status of cancer investigation. Unfortunately the author has amiably included almost everything which has been published recently, without expressing his own opinion as to the weight which should be given to any individual factor. No one believes the designing quack who cures cancer by the application of herbs, but there are lesser quacks in the medical profession, and even in laboratories, who announce cancer cures with the same shamelessness as the unlicensed practitioner. So, too, there is a very great lack of appreciation of the manifold fluctuations which occur in the growth of animal tumors; how apt they are to regress spontaneously under comparatively slight influences. Many of the so-called cures by vaccination with either crushed cells or autolytic products are due to the use of animals whose tumors tend on the slightest interference with the general health of the creature to undergo spontaneous regression. Klemperer quotes right and left from just such reports, and does not state what he must know, that they lack any confirmation or any scientific probability. The little pamphlet, then, must be regarded merely as a résumé of everything which has been published recently, and it thus lacks the value which it would have had had the author expressed himself freely as to what he himself believes.

A Manual of Instruction in the Principles of Prompt Aid to the Injured. Including a Chapter on Hygiene and Disinfection. Designed for Civil and Military Use. By Alvah H. Doty, M.D., Late Health Officer of the Port of New York, Late Major and Surgeon Ninth Regiment, N. G. N. Y. Fifth Edition. Price $1.50. New York and London: D. Appleton & Company, 1912.

This work is a concise but complete account of the principles of prompt aid to the injured and the present edition, the fifth, has been brought thoroughly up to date. All relating to the subject has been included and advice is given for rendering first aid to those who meet with accidents in nearly every possible circumstance. Moreover, useful hints are given as to how to relieve certain affections which attack suddenly, as apoplexy, epilepsy, hysteria, and so on; also how to proceed in cases of poisoning. The chapters dealing with hygiene and disinfection are especially valuable, that on disinfection giving the latest views on that much debated question. The book is freely embellished with numerous cuts and diagrams illustrative of the text and provides a valuable vade-mecum for the practitioner and layman in matters concerning first aid, hygiene, and disinfection.

Further Researches Into Induced Cell Reproduction and Cancer. Vol. II. With Illustrations. The John Howard McFadden Researches. Price $1. Philadelphia: P. Blakiston's Son & Co., 1912.

This volume continues the elucidation of the theory that cell proliferation is directly brought about by chemical agents set free by cell death and is in line with the views expressed by H. C. Ross in his first book on "Induced Cell Reproduction and Cancer." This volume contains eight articles, two giving the results of attempts of experimental production of tumors by inoculation of "auxctics," or agents responsible for cell proliferation; one gives a comparison of division figures in lymphocytes, induced by "auxetics" and the classic mitotic figures; the rest discuss cancer produced in pitch workers and the behavior of certain ova and protozoa under the influence of "auxetics."

In our review of the first volume we have given a résumé of the theory promulgated by H. C. Ross and his co-workers and have noted the little credence it has met with among other students of the cancer problem. However, Ross continues to bring further data in proof of his theory of cell proliferation, and the fortunes of research are such that no man's opinion should be denied a hearing, however incredible they may seem at the time. No less an authority than Sir Ronald Ross supports his brother's views and in any case control experiments in other laboratories should be instituted to test the validity of these views and separate the chaff from the grain.

J. W. Cropper and E. H. Ross are H. C. Ross's co-workers in the present volume.

Text-book of Anatomy and Physiology for Nurses. By Elizabeth R. Bundy, M.D. Member of the Medical Staff of the Woman's Hospital of Philadelphia; Gynecologist New Jersey Training School, Vineland; Formerly Adjunct Professor of Anatomy, and Demonstrator of Anatomy in the Woman's Medical College of Pennsylvania; Formerly Superintendent of Connecticut Training School for Nurses, New Haven, etc. Second Edition Revised and Enlarged with a Glossary and 215 Illustrations, 42 of which are printed in colors. Price $1.75. Philadelphia: P. Blakiston's Son & Co., 1913.

The author of this work has done wisely in combining Anatomy and Physiology in a single volume; further, the choice of subjects for special study by nurses has been judiciously made. The book is not too large, it is well illustrated, and contains enough Anatomy and Physiology for most nurses. The index is too meager to be of much use, such important subjects as brain, blood, eye (and many others) not being entered. In the preface we are told that this new edition contains special information on the development, repair, and functions of bones; but the index gives no clue as to where this information can be found. With a new index this volume should prove acceptable to nurses, as it is vastly superior to many of the books written for this class of readers.

The Mosquito. Its Relation to Disease and Its Extermination. By Alvah H. Doty, M.D., formerly Health Officer of the Port of New York. Illustrated. New York and London: D. Appleton and Company, 1912.

This small book will serve to popularize knowledge of the mosquito and the necessity for organized effort to destroy its breeding places. The author should have emphasized how very practicable it is to exterminate mosquitos by taking advantage of the larval period since all that is required is to clean or destroy all breeding places only once in every ten days.

# Society Reports.

## PRACTITIONERS' SOCIETY OF NEW YORK.

*251st Regular Meeting, Held December 6, 1912.*

THE PRESIDENT, DR J. W. BRANNAN, IN THE CHAIR.

**Centenarians and Nonagenarians.**—Dr. W. GILMAN THOMPSON read this paper (see p. 277.)

Dr. ABBE said that what interested him most was the statement about cancer. He could recall that this was the fact in his own experience. Cancer was rare among the very old. The type of skin cancer which started as a keratosis and went on to epithelioma was explained by the theory that the cells were worn out and their self-control was lost. But it occurred in middle life. In old people it seemed to him we found repair just as active in their body cells as in young people. Bones often united very well in old people.

Dr. BACON said that he was very much impressed about the old people in the State of Maine. He went down to Cape Cod every summer and there a person was not considered old until he got to be about ninety. People there seemed to live a long time and maintained their faculties until the end.

Dr. JAMES said he did not hear the early part of Dr. Thompson's paper and he did not know what suggestion he made about opium. He was impressed with the fact that in his experience old people were sometimes benefited by opium. One old man over one hundred suffered with a condition of general misery and pain without any definite disease. He was very much benefited by opium.

Dr. BRYANT said this contribution was very interesting indeed. It was pretty generally believed that old age itself contributed more than anything else to the incidence of cancer. One might think that because people of old age had in their bodies frequently isolated tissues out of commission there might be consequently more cancer manifestations among them. Strangely he had not had very much experience with old age in the practice of surgery. He was, however, familiar with two or three persons who had attained great age, and he was struck with the statement that old people contentiously thought that they knew how to take care of themselves, but he was not impressed with the notion that old people alone were to be thus characterized. He had in mind a quite vigorous old man who was accustomed to lie down on the floor for a resting spell. He was in his 93d year and was reasoned with because it might expose him to draughts. He refused to heed advice about it and did as he wished; he contracted pneumonia and very promptly died. He had, of course, seen cases of occlusion of the vessels giving rise to gangrene, but very often this was associated with some element of infection.

Dr. THOMPSON in answer to a question by Dr. Brannan said that he had left out all those who did not die of some specific condition. There were many who simply seemed to die of no demonstrable disease.

Dr. GIBNEY presented some *x*-ray negatives in a view box—showing an extraordinary instance of fragilitasossium in a man 49 years of age. The case was seen by him two days before and the letter asking for advice contained a good history which was as follows: he had been suffering the last year from broken bones and wished to have Dr. Gibney's advice, the history of his case was briefly: In July, 1897 he fractured his left femur by a slight fall from a bicycle; in January, 1909 he slipped on the ice falling against a step and fractured his right humerus at the shoulder joint. On November 11, 1911 he slipped on a wet rock and fell, fracturing his left femur at the neck, and his left humerus. On April 10 he was up and taking a few steps with crutches. On the 14th while trying to rise from a chair on the sound leg his right femur snapped. On July 13 his doctor was lifting him from his wheel chair to the bed and while in his arms his left femur cracked slightly at the old 1897 junction. The *x*-ray showed a very thin, compact tissue while the cancellous was honeycombed, appearing in some instances like bone cysts, but the great extent of this honeycombed appearance throughout all the bones subjected to the *x*-ray, suggested a general involvement, indeed he had broken two ribs in addition to the other fractures and while repair had been very good he was afraid to bear his weight on his limbs and they must be protected by apparatus. He had never had a Wassermann test. The urine showed an abundant supply of calcium oxalate, the indican in slight excess, acid reaction, specific gravity 1018, urea 1.5 per cent., solid parts per 1,000, 41.94. Nothing else of importance. He had spent a good deal of his time out of doors. His vocation had not been a wearing one; bowels reported to be regular; appetite always good. It had been arranged that he should go into the Rockefeller Hospital for further study.

Dr. ABBE said that the subject of bone cysts had been lately illustrated by Cole and Morgan and Jones in the *Archives of Röntgen Ray*, April, 1907. They did not seem to have any reference to syphilis. There was everywhere an absence of lime salts in these *x*-rays of Dr. Gibney's patients. This would suggest a line of treatment, the giving of salts of lime.

**Carcinoma of the Choroids.**—Dr. KNAPP presented two ophthalmoscopic drawings. The first was of a case of metastatic carcinoma of the choroid. The patient, a woman of forty-two years of age, had been operated upon two years previously for carcinoma of the breast. This condition had returned in the cicatrix. The sight in the right eye became blurred about four months ago. With the ophthalmoscope, the characteristic picture of a metastatic tumor of the choroid could be seen. Hirsch, of Prague, in a recent study of these cases, states that the patient usually lives seven months after the appearance of the metastasis in the eye. In this case the patient lived seven and a half months.

**Retinal Changes in Adolescence.**—The second patient, female, aged twenty, had lost one eye from recurring hemorrhages of the vitreous. The other eye seemed normal, except, on examination with dilated pupil, round yellowish areas were found contiguous to the retinal veins in the periphery of the fundus. The case was presumably tuberculosis. Dr. Knapp asked whether in other parts of the body periphlebitic lesions were observed in a course of a tuberculous process.

Dr. ABBE suggested that if Dr. Knapp had another case of cancer of the choroid the patient should have an oophorectomy done, Beatson's operation. He had had two patients of that type in whom the nodules had disappeared after the removal of the ovaries.

Dr. KNAPP said that these cases came into his hands for eye treatment only.

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## THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

*Stated Meeting, Held December 12, 1912.*

DR. WILLIAM SHANNON IN THE CHAIR.

**Protein Milk as a Means of Correcting Digestive Disturbances.**—Dr. HERBERT B. WILCOX and Dr. C. M. HILL presented this communication, in which they related their experience with protein milk. They stated that various observers had differed widely in their methods of preparing protein milk and as a result there were widely divergent percentages of fat and caloric values in the mixtures designated "protein milk." The preparation which they had used had a fat content of less than one per cent. The incentive to their study was the conclusion reached by Dr. John Howland in 1910-11 at Bellevue Hospital when protein milk was used as a routine diet for nearly all patients in the infant wards of the hospital. The conclusion which was reached at that time was that the value of protein milk depended upon its use as a corrective; that it was not to be considered as a fit means of prolonged nourishment, its period of usefulness being limited to the first seven or ten days of the dietetic treatment. In any acute digestive disturbance low fats and sugars were certainly indicated, while higher percentages of protein than they had hitherto believed advisable were now known to be well borne, and indeed actively beneficial. About 400 infants were given the protein milk as a substitute for other milk mixtures. The ages of these infants varied from prematurity to twelve months, and they were given the milk in most instances during their entire stay in the hospital, a period averaging one month. The results were most gratifying in that the children recovered from the acute evidences of their digestive abnormality, but they were usually unsuccessful in their attempts to make them gain in weight. This fact, coupled with the evidences which they had that cases of gastric indigestion, colitis, non-infectious diarrhea, and simple digestive incapacities responded with unexpected promptness led them to begin the use of protein milk as an initial corrective alone. They had deviated from the principles laid down by Finkelstein and Meyer only in the lower fat content of their mixture. They felt that the need of low fats was of first importance in treatment. They had found no need of preceding the protein milk by tea or cereal decoctions as other investigators had done. This preliminary took Finkelstein and Meyer three days and involved a great initial loss in weight. They had found

no objection to the use of protein milk in combination with other foods. They had used it with benefit in combination with plain milk mixtures, breast milk, and some solid foods. They believed that the use of the protein milk over many weeks was unnecessary and oftentimes injurious. Finkelstein and Meyer had experienced great difficulty in getting their cases changed from protein milk to other foods and advised strongly against its use with any of them. This paper showed that: 1. Protein milk was best given without a preliminary course of tea or cereal decoction. 2. That it was efficacious in all acute and chronic infections of the gastrointestinal tract. 3. That it was equally suited to fermentative and putrefactive processes. 4. That it was better given in combination with other foods than alone except for a short initial period. 5. That children on it could without danger be quickly swung over to plain milk mixtures. From May, 1911, to November, 1912, 261 children suffering from a variety of digestive disturbances were given protein milk. The large majority remained in the ward over three weeks, or long enough to justify definite conclusions as to the result. These children varied in age from prematurity to nine years. Before instituting the protein milk diet in many instances plain milk mixtures were tried for comparison. These cases were divided into three broad groups as follows: 1. Acute infections of the gastrointestinal tract, evidenced by vomiting, bad stools, and fever. 2. Apparently non-infectious indigestion due to previous nutritional abuse. 3. Simple diarrheas, namely, those in which the infants could not be given food strong enough to produce a gain in weight without accompanying gastric or intestinal overactivity. In general it might be said that protein milk was better suited to children over rather than under three months of age. Of 256 children, 72 were three months or less and of these 41 or 56 per cent. did well: 97 were from four to seven months of age and of these 76 per cent. did well; 62 were from eight to twelve months, of whom 85 per cent. did well; 25 were one year of age or over, of whom 72 per cent. did well. Among these there were many suffering from very severe digestive abnormalities. In 44 cases a trial of diet other than protein milk was first made. The improvement resulting from the use of protein milk in acute intestinal infections, as evidenced by fever, frequent bloody mucous stools, was more striking than in any other conditions. Of 44 cases of severe intestinal infections of longer duration which they had failed to correct by plain milk modifications, 70 per cent. were cured when changed to protein milk. As a means of controlling vomiting protein milk had also proved of value. Among their cases there were very few having gastric symptoms unassociated with evidences of intestinal derangement. In 74 instances, however, vomiting was the predominating symptom; of these 30 were put on plain milk modifications and 80 per cent. did well; the 20 per cent. failing to respond to this treatment were put on protein milk and all promptly recovered. Children were frequently seen who tolerated only enough food to keep their weight stationary and in whom any further addition to the dietary produced evidences of digestive overstrain. In such cases the addition of protein milk increased the food tolerance and this applied equally to fats, carbohydrates, and proteins. The indication for protein milk seemed equally clear whether the indigestion depended primarily upon fat or carbohydrate incapacity, bacterial fermentation, or putrefaction. Protein milk was not, however, a general panacea nor could it be considered the only means of controlling digestive abnormalities. It had been their experience, however, that those indigestions which did not respond to the usual methods of treatment would respond much more readily to the protein milk. Formerly every child on admission to the hospital was given castor oil as an initial purgative; now it was only the more severe cases that were given this vigorous initiation. There was reason to believe that diarrheas due to gas bacillus or bacillus disentericus or other bacterium might as logically and more easily be corrected by protein milk than by the purely bacterial starvation methods. The buttermilk which they had used was made from pasteurized milk containing 1.75 per cent. fat. To one quart of this was added one ounce of buttermilk from some reliable dairy. This was allowed to stand for twelve hours at a temperature of 70° to 80° F., being thoroughly beaten at intervals of two or three hours and then placed on ice until needed. Each day buttermilk was made from that of the preceding day, a smaller amount of stock being needed as time went on. To make the junket two quarts of pasteurized milk and two Hansen junket tablets were used. The mixture was allowed to stand twenty minutes at a temperature of 100° F.; the precipitated casein was then strained through gauze, washed in water, and forced through a fine sieve several times by means of a potato masher. The sieving was facilitated by adding buttermilk to the curd and was continued until the curd was broken into fine flakes. One grain of saccharin and one quart of water were added and the whole was thoroughly beaten to form a suspension. Protein milk thus made consisted of fat 0.8 per cent., sugar 2.4 per cent., proteid 2.8 per cent. The caloric value was 8.5 per ounce. This mixture must not be heated too quickly nor above 90° F., or tough masses of casein were likely to form. The corrective period divided itself into four parts: 1. That in which protein milk alone was given. 2. That in which protein milk plus malt sugar was given. 3. That in which much protein plus a small amount of plain milk was given. 4. That in which the protein milk was largely replaced by plain milk. The usual duration of the first stage varied from two to fourteen days. As soon as the digestion showed some improvement the malt sugar was added. They had found the dextrin maltose preferable. It was their aim to make the first period during which the protein milk alone was used as short as possible. The time necessary for the entire correction period averaged 12 days. In no case was any untoward result noticed from mixed protein milk and plain milk feedings. Protein milk was used with benefit in combination with cane, milk, and malt sugar, plain milk, and breast milk. Dr. Wilcox reviewed the history of a number of cases which illustrated the statements made in the paper.

**The Double Function of Fats and Carbohydrates in Nutrition and Their Different Nutritive Properties.**—Dr. Henry Dwight Chapin read this paper in which he showed that mere caloric value alone did not furnish a sound basis for a dietary for infants but that other factors played a rôle of considerable importance. He summarized his study by stating that fats and carbohydrates served two distinct purposes in nutrition which were equally important. They furnished energy which, when expended, liberated heat, and they also supplied water to the cells in such a manner that it diluted the cell contents and reduced their osmotic pressure so as to produce an automatic flow of nutriment to them from the more concentrated blood, as soon as it was needed. Fats were more effective producers of metabolic water than carbohydrates. Metabolic water produced from fats weighed more than the original fat and resulted from a combination of the hydrogen of the fat with the oxygen of the blood. Metabolic water derived from carbohydrates was a residual product obtained by splitting the carbohydrate and weighed about two-thirds as much as the original carbohydrate. In milk, the natural food of rapidly growing young animals which required much metabolic water to promote growth and cell nutrition, fat supplied the greater part of the metabolic water. In hen's eggs it supplied practically all of it. The amount of heat or the number of calories excreted was a measure of the food that was being burned but did not show how much was needed for growth. The energy or caloric needs of the body did not depend upon its size nor weight but upon its activity. The number of calories a food would yield was not an indication of its nutritive value. The caloric requirements of the body to maintain it intact depended upon the amount of energy expended. The number of calories the food which was to supply these requirements should yield depended upon its caloric value after deducting the number of calories needed for its digestion and assimilation. The amount of energy needed for the digestion of a food depended largely upon its physical condition. From these conclusions Dr. Chapin drew the following practical observations:

1. It was quite evident that an overemphasis had been placed upon the caloric value of foods, particularly as far as the nutrition of the infant was concerned. 2. The infants needed little food for its energy except as this was expended in the digestion and assimilation of the food. 3. Their natural food was highly specialized in composition and in digestive properties and was peculiarly suited to them. 4. Milks of various animals varied in composition and digestive properties directly with the variation of the type of the animal. 5. A proper estimation of foods, in a last analysis, depended upon digestive suitability and capacity to produce true growth and proper development.

Dr. B. Raymond Hoobler said he wished to present a chart covering the nitrogen metabolism of several children fed on protein milk. From these figures it was shown that in cases on such food the nitrogen intake was considerably higher than that usually fed to children. Though the intake was higher the absorption was excellent, 95 per cent. being absorbed, which was the same as

in a normal child. The retention of nitrogen gradually increased from day to day until supposedly the nitrogen need of the child was fully met; then the retention remained at a level, being sufficient to meet the protein need for growth. Dr. Hoobler also presented certain results bearing on the feeding of large quantities of protein as gathered from experiments made under the supervision of Dr. Holt and published in the *American Journal of the Diseases of Children*, November, 1912. The results had a distinct bearing on the various factors which caused the stools to change from a diarrheal type at the beginning of the protein milk feeding to the smooth, pasty, yellow stools which appeared after four to six days of feeding with the protein milk. These factors were: 1. There was a marked lowering of the acidity of the stools. 2. There was a marked reduction in the free fatty acids present in the stools. 3. The amount of fat in the form of soluble or insoluble soaps was much increased. 4. The amount of water lost from the body through the stools was greatly reduced. 5. The retention of mineral salts was greatly increased. All of the above factors favored the production of a change from frequent green watery stools to the smooth, pasty, yellow stools which appeared after from four to six days feeding on protein milk.

Dr. Graham Lusk said that the nutrition of the body depended upon furnishing food for maintenance, repair and growth. All of these factors appeared in the baby. The baby at the breast took food sufficient for his maintenance and about 15 per cent. in addition, which later he added to his body for growth. Instinct furnished the guide for this amount. In experiments upon adults it was remarkable that the amount of bread taken by an individual was practically constant from day to day, seldom varying more than twenty grams. Here also instinct furnished the guide for nutrition. If the baby was not nourished at the breast it was a matter of luck whether he got sufficient support for his organism. The foods administered to him were proteids, fats, and carbohydrates. Protein was made up of a great many structural units called amino-acids. These amino-acids were in number as many as the letters of the alphabet and their possible arrangement as manifold as were the words in the dictionary. The protein was broken in the intestinal tract into these several amino-acids and entered the blood in the form of amino-acids. These served to build up the varying portions of the machinery of the cells and became active portions of the machinery of cell life. There was wear and tear upon the protein constituents of the cells even in babyhood and it was therefore necessary to administer in the food sufficient protein to repair this wear and tear, and, in addition, to give enough to furnish new protein building stones for the constructive growth which was inherent in the protoplasm of the young of all species. Besides protein, however, material must be furnished to supply energy for the maintenance of the movements of life. This material was given in the form of fats or carbohydrates. There was no question but that fat might supplant carbohydrate in the nutrition of children if that were deemed necessary. Fat, on the contrary, could not supplant carbohydrate entirely because under circumstances of an exclusive fat-protein dietary acidosis appeared. It was necessary to consider the caloric requirements of the infant when a proper dietary was to be devised. This should contain during the first three months 90 calories per kilogram of body substance. In experiments which Dr. Howland had performed in his laboratory they had seen that an infant might eliminate 15 calories per hour, hour after hour, after taking a usual milk mixture. Food itself in ordinary quantities might somewhat increase metabolism. By the addition of protein to that the protein content of the milk was doubled causing an increase in the heat production of the child from 15 to 19 calories per hour. This increase was due to the specific dynamic action of protein. This was caused by the stimulation of the protoplasm through the action of certain amino-acids. It was stated that the heat value of foods was largely lost through the work expended in the digestion of the foods. However, one should remember that the breaking down of protein into amino-acids, or of fat into fatty acid and glycerin in the intestine, was not accompanied by the evolution of heat. Furthermore, if agar agar were given there was no increase in metabolism notwithstanding a great activity on the part of the intestinal tract. Benedict had shown that cathartics which strongly stimulated the intestinal tract had no effect at all upon the heat production in the organism. So the *Darmarbeit* of Zuntz as a causative factor of the increased metabolism after food ingestion must be abandoned. In Dr. Hoobler's chart two points might be observed, the addition of protein to the body not only depended upon the formula representing the composition of the milk ingested, but also upon the protein content of the organism. A large quantity of protein would be absorbed by cells whose protein supply had been depleted, whereas with the same diet a much smaller quantity of protein or perhaps none at all would be deposited by an organism whose protein content had reached a certain condition of optimum saturation. In the second place Dr. Hoobler had stated that in one of the children there was marked protein retention during a period of under nutrition and this was accompanied by a gain in weight. Dr. Hoobler's results could easily be obtained if muscle tissue were added to the body, even though tissue fat were used at the same time for the maintenance of the energy requirement of the organism. Dr. Chapin had spoken in regard to the importance of metabolic water. He, himself, had estimated that if a man of seventy kilograms net weight should produce a hundred calories of heat per hour, and this one hundred calories of heat were derived exclusively from carbohydrates, then, in the oxidation of this carbohydrate, 0.24 of a gram of water would be produced each minute. That would mean the production of three milligrams of water per kilogram of body weight or three parts of water per million parts of body weight. Since the volume of blood circulated once per minute bearing, perhaps, foods brought from the intestine, it hardly seemed possible that metabolic water amounting to three milligrams per kilogram could in any way be influential in the exchange of food between the blood and the tissues. It seemed as though the osmotic pressure of the food stuffs within the blood would be the determining factor in their passage from the blood stream to the cell.

Dr. Samuel S. Adams of Washington, D. C., said that Dr. Wilcox and Dr. Hill were to be congratulated upon the success they had obtained and particularly upon the large number of patients they had to deal with in the use of protein milk. Those who had had less experience could not speak upon the subject in such an authoritative way. The value of the report lay in the fact that the work was carried on in a class of patients with whom all were familiar in institutions where they got the very worst cases. They had tried at the Children's Hospital at Washington various treatments for gastroenteric diseases and had come to the conclusion that the severe heat and intense humidity influenced the varying mortality among infants. The Finkelstein method was followed as prescribed by the author, but the results were not such as led them to continue it long. There was great difficulty in inducing the babies to take the food. In looking over the records of children who had suffered from badly deranged digestion he had found that from eighteen to twenty-four ounces of milk mixtures were taken, but that when the babies were given protein milk, four, five, or eight ounces only were taken in twenty-four hours. The method was abandoned because of the high mortality. The cases were not selected. It seemed to him, however, that they were soon going to get better results in these cases, although they were still about as far from solving the problem of infant feeding as they were years ago. Dr. Adams asked about the mortality in institutions this year as compared with previous years and if the results from this form of treatment made any better showing. He said that in typhoid fever ten or twelve years ago the child was placed in a bath with the water at a certain temperature and excellent results were obtained; he had not ordered a bath for a patient with typhoid fever for five or six years, and the results had been better than when the baths were given. Last summer was less hot and humid and as a result the Children's Hospital showed a mortality less than for the preceding year. Dr. Adams said he had been especially impressed by what had been said regarding the therapeutic measures employed.

Dr. John Lovett Morse of Boston said he had been very much interested and entertained by Dr. Wilcox's paper, but he did not know what to say about it. He believed that Dr. Wilcox was an honest man and that he must accept his figures, but he had not seen such results in Boston with such a form of treatment. He could not see why the same form of food should affect one sort of bacteria in one way and another in another way, that was, why it should antagonize fermentation in one case and putrefaction in another. In cases of dysentery caused by the gas bacillus or allied organisms it should do good, but ought to be harmful in those caused by the dysentery bacillus which produced toxic substances from proteids. Dr. Morse said he was much interested in Dr. Chapin's paper and was indebted to him for the points he had given in regard to the use of calories. He was especially in-

debted to him for another argument in favor of fat as the infant's food.

Dr. Linnaeus Edford LaFetra said that he had been using the protein milk for three seasons, having begun it in the Babies' Hospital in 1910. His experience indicated that in severe cases of dysentery with mucus and blood in the stools, whether the result of fermentative changes or not, the protein milk was the best means of dietetic treatment that he knew of. In infants with high fever in nine out of ten cases the improvement would be very striking after the administration of protein milk for three days. He had frequently been struck by the good results obtained with this milk without regard to the type of bacterial infection. The living Bulgarian Lactic Acid Bacilli must have part of the credit for the improvement in the true dysenteric and putrefactive cases. Moreover, the protein milk increased the tolerance for other foods. This was a point that should be emphasized. At Bellevue Hospital there were instances in which infants could not take even breast milk without diarrhea and substituting protein milk for two or three feedings daily arrested the diarrhea and the breast feeding could be resumed later. The protein milk might be given with advantage in combination with other foods. He quite agreed with Dr. Wilcox in his conclusions, and especially that in the preparation of the protein milk for therapeutic purposes skimmed milk should be used. Dr. Chapin had done great service in calling attention to the fact that the calories in a food might not be at all a measure of the nutritive value of the food to the infant.

Dr. Godfrey R. Pisek said that this question of Finkelstein's method of feeding should be thoroughly threshed out, and he believed that it should be regarded only as a therapeutic measure. After using it for three or four days one could return to the breast or other feeding and get good results in a large number of cases. He believed that Dr. Wilcox was quite within the bounds in all of his conclusions. What he had said compared well with the experience of others who had used the protein in milk for a number of years.

Dr. Rowland G. Freeman said that like all receipts for infant feeding Finkelstein's milk had a limited application. Its advantages lay in the fact that it contained lactic acid bacilli in a far more palatable form than buttermilk. Its disadvantages were that it contained too much fat for many cases of diarrhea, less sugar than most children could digest, while of the protein it discarded the lactalbumin of the whey which was the most easily digested proteid, especially for infants under three months of age. Modifications of the original receipt by using skim milk or adding sugar would eliminate some of these objections. It was particularly valuable in cases with offensive stools, but often better results were obtained by feeding lactic acid bacilli in another form and then using a modification particularly adapted to the case. In regard to Dr. Chapin's paper, he believed that the estimation of the caloric values was most important, especially as a guide against underfeeding.

Dr. Charles Gilmore Kerley said that he regretted that he had not heard all of the papers. He had found protein milk a useful addition to the diet of children with diarrhea. It could be digested before skimmed milk could be tolerated and was of much use as a means of supplying the substantial nourishment when that was badly needed. Dr. Kerley felt that sugar and milk fat was accountable for not a few of the disorders of older children, a condition brought about by defective oxidation of the carbohydrates and fats. The disorders had a peculiar tendency to be cyclic in character and were represented in cyclic vomiting, recurrent bronchitis, eczema, and periodic so-called bilious attacks.

Dr. Herbert B. Wilcox, in closing the discussion, said that Dr. Adams' difficulty in getting these children to take this food might have been due to the paucity of nurses to oversee the feeding of the bottles. The child could not be left to take the bottle alone. The nipple would surely plug up and the baby become exhausted or discouraged before he had finished his meal. As to their mortality, last year it had been 34 per cent., while the year before it was 46 per cent. This decrease could not be said to be due to the protein milk alone as the death rate varied in great measure in proportion to the number of premature infants admitted and with climatic conditions. Dr. Morse's remarks were practically those he had made a year ago on the subject. They had done no bacteriological work on these patients. The report dealt with protein milk as an aid in the treatment of indigestion and was not a study of intestinal bacteria. It did not seem to him that a bacteriological examination was necessary in order to determine with what digestive abnormality they were dealing. The determination of the presence of fermentation or putrefaction should certainly be possible from the ordinary examination of the stools. Their cases were by no means all treated alike, but they all got protein milk. They got it as an adjuvant to a diet otherwise carefully modified to meet the particular needs of the case in hand.

**Election of Officers.**—*Chairman,* Dr. Henry Dwight Chapin; *Secretary,* Dr. Royal Storrs Haynes.

## SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Twenty-fifth Annual Meeting, Held at Old Point Comfort, Virginia, December 17, 18, and 19, 1912.*

The President, Dr. J. M. T. Finney, of Baltimore, in the Chair.

(*Concluded from page 229.*)

**The Embryogenic Relationships of Tumors of the Kidney, Suprarenal, and Testicle.**—Dr. Louis B. Wilson of Rochester, Minn., said the basis of his paper consisted of a study of the pathological specimens obtained at operation and autopsy in the Mayo clinic and a study of the human and comparative embryology of the urogenital system. The writer summarized the results of his observations as follows: *Renal Tumors:* (1) Of 92 tumors studied, there were three pelvic papillomas, 4 carcinomas, 1 squamous celled epithelioma, 1 adenoma, 1 fibroma, 7 sarcomas, 1 Wolffian tumor, 3 embryomas (Wilms' tumors), and 71 mesotheliomas. (2) The renal pelvic papilliomas and carcinomas apparently arose secondarily to chronic irritative processes of the adult pelvic epithelium. (3) The rare squamous celled epithelioma probably was a neoplastic development from the embryonic inclusion within the renal pelvis of ectoderm which had found its way into the lower end of the primitive excretory duct by way of the cloaca. (4) The embryomas of the renal cortex composed of renal and other tissues and occurring in young children were, according to Wilms, derived from inclusions of the lateral embryonic plate within th caudal portion of the nephrogenic cord in the early embryo. (5) The most numerous tumors of the renal cortex, the so-called hypernephromas or Grawitzian tumors, were apparently mesotheliomas derived from nephrogenic vesicles which had failed in the early embryo to form a tubular connection with the renal pelvis. (6) Most of the few true sarcomas of the kidney developed primarily in adult tissue of the renal capsule and involved the cortex secondarily. (7) The renal cortex was also frequently the site of inclusions from the mesonephros and rarely of inclusions from the suprarenal gland. Rarely, if ever, did either of these inclusions in the renal cortex form malignant tumors. *Adrenal Tumors:* (8) Of the 3 primary tumors of the adrenal studied, 1 was an adenoma, and the other 2 hypernephromas arising from the adrenal cortex. (9) Primary malignant tumors of the adrenal were either round-celled sarcomas or more frequently hypernephromas arising from the adrenal cortex. (10) Adrenal hypernephromas frequently induced abnormalities of sex and strength. (11) Tumors of the adrenal, in whatever stage of their development, bore no histological resemblance to most mesotheliomas (so-called renal hypernephromas). *Testicular Tumors:* (12) Of the 21 tumors of the testicle, all of the 10 which it was possible to study in histological detail were teratomas. (13) So far as could be determined, the history and histology of these 19 cases were in harmony with Ewing's hypothesis that teratomas of the testicle arose from sex cells whose normal development had been suppressed. (14) The difference in time of development of the embryonic crop of genitaloid cells and the next generation which appeared at puberty might account for variations in structure and *tempo* of the testicular teratomas.

**Prostatectomy, with Special Reference to the Sequels.**—Dr. James E. Moore of Minneapolis stated that the unsuccessful results of prostatectomy had not been as faithfully reported as the successful ones. The mortality after the upper and lower operations was practically the same in good hands, but the trend of the surgical world at the present time was toward the upper operation. Every surgeon should be proficient in both. Neither operation was a fit one for novices to experiment with, because both were serious major operations accompanied by some mortality. In the upper operation, instead of cutting through the mucous membrane in the floor of the bladder, it was better to crowd the finger into the internal meatus until the mucous membrane broke and follow through this opening with the enucleation of the prostate, as taught with the author and first published by L. L. McArthur. Con-

servatism should control these operations, but it was not conservative to postpone operation until organic changes had taken place in the bladder and kidneys. Every general practitioner should realize that when he was first called to relieve retention from enlarged prostate he was assuming a grave responsibility, because infection at this time might end fatally in spite of the surgeon's best efforts. Enlarged prostate was easy to diagnosticate, but an operation should never be recommended simply because there was enlargement. A patient should never be introduced into catheter life without first having had the advantages of prostatectomy urged upon him. Old age was not a contraindication to the operation. The results following prostatectomy were not always satisfactory even in suitable cases. Patients frequently returned to the family physician after having been operated upon in very little better condition than before the operation, and sometimes worse. Impotence followed the operation in a certain percentage of cases, and nntil we knew just what caused the impotence we would be unable to prevent it. It was probably due to disturbance to the nerve supply. Gangrene of the bladder was an occasional sequel, to be prevented by handling the tissues as gently as possible. Careful search for stone should be made at every operation, because many times they had been overlooked. They undoubtedly formed after the operation in some cases. This should be prevented by emptying the bladder of blood clots and all detritus. When the bladder was in a reasonably good condition the cystoscope might be used to advantage, but with a badly infected bladder it did more harm than good, and catheterization of the ureters was unwarranted. With improvement in our technique urinary fistulæ were much less frequent than formerly, but were still an occasional sequel in cases that required unusually prolonged drainage. In cases of atony of the bladder the patient should be told that he would probably have to continue the use of the catheter after the operation, but that catheterization would be much easier and more comfortable. Incontinence or dribbling was an occasional sequel after both operations, due to injury to the sphincters or their nerve supply. To prevent this sequel the sphincters should be entered as little as possible, and in the upper operation more careful closing of the wound should be performed. The tendency in the upper operation was toward the more complete closing of the wound. While present day prostatectomy was one of the most beneficial operations at our command, the number of failures and sequels was too numerous. Might not less radical measures be better, such as removing the third lobe and dilating the prostatic urethra through a suprapubic opening, which was accompanied by neither complications nor sequels?

**Fat Hernia.**—Dr. Joseph Ransohoff of Cincinnati reported seven cases. According to his conception, certain characteristics accompanied the primary fat hernia: (1) A true fat hernia was a protrusion of a preperitoneal fat mass or lipoma through one of the ordinary hernial apertures. It followed the course pursued by an ordinary hernia. (2) When a peritoneal process was found within such a hernia, it was always difficult to find because of its small lumen. Such a process when present, in a minority of his cases, was secondary to the fat hernia and probably resulted from traction. The ordinary contents of a hernia were not found and could hardly enter into the narrow serous tube within the fat mass. (3) The onset of a fat hernia might be sudden, like that of the ordinary type of hernia with preformed sac. In three of the cases recorded the history of sudden onset was very clear and the proportion of cases too large to be charged to inaccuracy of observation on the part of the patient. (4) The diagnosis of fat hernia was far from easy. Although not reducible, they were capable of a seeming reduction in a fair proportion of cases. (5) An impulse on coughing could usually be obtained, since the hernia could receive the brunt of the increase of intraabdominal pressure like an ordinary reducible hernia. (6) In very rare instances symptoms of strangulation might result from torsion of the fat hernia. (7) The treatment of fat hernia differed in no way from that of the ordinary type. It was probable that these cases would only be recognized as fat hernias during the operation, therefore, measures for radical cure would be instituted, such as those in vogue for the ordinary forms of hernia.

**Experimental Devascularization of the Intestines with and without Mechanical Obstruction.**—Dr. J. Shelton Horsley and Dr. C. C. Coleman of Richmond, Va., contributed a joint paper in which they reported twelve experiments, all on dogs, done under full anesthesia in which segments of intestine from the lower ileum, varying from two to five inches, were devascularized by cutting the attachments of the mesentery close to the bowel. In all except one the omentum was wrapped around the devascularized segment. In five instances the segment was obstructed by tapes at each end. Two of these dogs died from gangrene and perforation of the loop. One died after three days without perforation; one lived thirteen days, and the other lived fourteen days. In seven dogs a loop of intestine was devascularized without being obstructed and the omentum wrapped around the segment. None of these dogs died as a result of the operation. The authors concluded that either no toxic substance was formed in the devascularized loop or segment of intestine which was unobstructed, or else this substance, if formed and excreted, was not absorbed by the normal mucosa. They emphasized the fact that in dogs at least a loop of bowel when separated from its mesentery and unobstructed might be nourished by wrapping the omentum around it.

**Acute Hematogenous Infection of the Kidney.**—Dr. J. M. Mason of Birmingham, Ala., read a paper on this subject in which he reported three cases and summarized as follows: "1. Acute hematogenous infection or septic infarct of the kidneys is of comparatively frequent occurrence, and is often overlooked. 2. Serious injury to or disease of one kidney acts as a predisposing cause. 3. While nephrectomy is demanded in the fulminating type, early diagnosis and operation will permit of decapsulation with incision and drainage of infarcts in certain of the milder cases, thereby saving some kidneys which would require removal if treated later. 4. The relation of movable kidney to the development of septic infarct offers an indication for nephropexy worthy of consideration. 5. When exploration in acute supposedly abdominal conditions fail to reveal lesions sufficient to account for the symptoms present, the possibility of septic renal infarct should be borne in mind and the condition of the kidney ascertained before completing the operation."

**Head Injuries.**—Dr. Ap. Morgan Vance of Louisville reported eight cases.

Case I. Patient, twelve years before operation, was struck on the head with a shovel, followed by the development of epilepsy. Operation twelve years later at the site of injury consisting of the removal of a good sized button, resulting in complete recovery. There were no further epileptic seizures. The patient died of pneumonia ten years later.

Case II. Patient, forty-five years old, became paralyzed two days before operation ,and gradually lapsed into complete coma and developed paralysis, beginning on the left side and extending to the whole body, including the face. Sensation on the left side was entirely absent, and greatly diminished on the right. Bowels and bladder paralyzed; eye reflexes absent. Operation: Upon shaving the scalp the head showed a curious condition. The whole scalp was edematous and the right half presented the appearance of angioma, the veins were so greatly dilated. A piece of bone the size of a ten cent piece was removed and the opening then enlarged to the size of half a dollar. The dura was incised, the brain explored with suction needle, and one-half ounce of fluid obtained. Wound was closed without drainage. Complete recovery. This condition resembled very much what is designated by two or three authors as "wet brain."

Case III. Boy, aged ten, head injury in street car accident. Scalp torn from both sides of the skull. Loss of the parietal bone. Scalp cleansed, parts adjusted and separate dressings applied. Twelve days later, with the patient in good condition, another doctor was called to soak the dressing off, which the speaker declined to do. The uncovered meninges became infected, and the boy died three days later.

Case IV. Injury of the skull in the right perietal region, patient being struck on the head by a baseball. Decompression operation nine weeks later, with removal of a good-sized button. Complete recovery, with no recollection by the patient of the accident.

Case V. Boy, aged ten, sustained extensive compound, comminuted fracture of the skull. The mastoid region and the area back of and above the ear were crushed. Operation consisted of removal of several pieces of bone, the scalp being sutured without drainage. Complete recovery.

Case VI. Epilepsy, with loss of speech and power of locomotion following an injury to the head. Examination revealed depression over the left brow and temporal region. Operation consisted of removal of a large piece of bone without subsequent drainage, followed by complete recovery.

Case VII. Pistol wound at the junction of the frontal with the parietal bone, large enough to admit one's thumb. Operation consisted of removal of fracture with some brain matter as well as fragments of bullet, followed by complete recovery.

Case VIII. Pistol wound through the roof of the mouth, a little anterior to the junction of the soft with the hard palates, the bullet going entirely through the brain. No operative measures were carried out at this time. Mouth sprayed with antiseptic fluids and liquid nourishment given. At the end of six weeks the bullet was removed, together with several pieces of the skull. This was followed by complete recovery.

**The Surgery of the Single and Horseshoe Kidney.**—Dr. Charles H. Mayo of Rochester, Minn., stated that developmental abnormalities of the genitourinary system were the most frequent. Of this group irregularities of the circulation of the kidney were the most common. Their own autopsy records had shown in a single year as high as 4 per cent. of cases presenting gross anomalies of the kidney and ureter of surgical importance. That it was necessary for the surgeon to thoroughly understand these anomalies was obvious, from several points of view. A knowledge of the early development of the genito-urinary system made intelligible the resultant anomalies and various pathological conditions. We saw the possible development of congenital, cystic kidney resulting from a failure of certain portions of the secreting renal tissues to become united with the collecting portion. Wilson had called attention to the probable development of the so-called hypernephromata as neoplastic growths from similarly unattached secreting portions of the kidney. Among 36 cases of gross renal and ureteral anomalies observed in their clinic during five years, 7 were found incidentally to other abdominal operations, 12 were of the horseshoe type, and 6 of the single or asymmetrical type. Of 649 operations on the kidney and ureters during this period of five years, there was an average of one serious anomaly associated with disease in every 26 cases. In the horseshoe form 90 per cent. were fused at the lower pole. At the point of union there might be only connective tissue (in 15 per cent. of the cases). Usually the fusion consisted of renal tissue and varied from a small area to the full width and thickness of the kidney. Ninety per cent. of cases were fused in front of the great vessels. The most common disease affecting horseshoe kidney was hydronephrosis which might later develop into pyonephrosis. This hydronephrosis occurred in moderately young individuals, while pyonephrosis and lithiasis were usually seen in middle age or later. Tuberculosis was rarely seen. More horseshoe kidneys were found in women than in men, and more single kidneys in men than in women. When the kidneys were fused by heavy renal tissue, symptoms might undoubtedly be present. Rovsing recently published cases in which the diagnosis was confirmed at operation. Despite the diagnostic data which had been given, as a rule the condition would not be recognized before operation. Braasch indicated, in addition to the cystoscope and radiograph, the great assistance of pyelography with colloidal silver injections. The lesson to be learned, when we did not have absolute data as to the condition of both kidneys, was to always explore the other kidney, usually through a separate incision, before the removal of a tumor of the kidney or the removal of a diseased kidney. In abdominal surgery, where the type of the presenting tumor was questionable, the kidney should be palpated before removal of the tumor. In some instances transperitoneal incision was indicated. The lateral incision described by W. J. Mayo would suffice in most cases. At operation the possibility of horseshoe kidney must be kept in mind, especially whenever difficulty was experienced in delivering the lower pole. This occurred in the writer's last case, where pyonephrosis of half of the horseshoe kidney was present. The renal tissue, nearly the size of the normal kidney, passed in front of the large vessels. After examination of the blood supply, the fused portion was divided and sutured with catgut. In a case of horseshoe kidney, which was not otherwise pathological, Rovsing relieved the pain and general symptoms by division of the isthmus.

**A Cheek Defect and Its Repair by Plastic Operation.**—Dr. John Staige Davis of Baltimore reported the following case: Male, aged 16. Defect 6.3 centimeters in diameter, involving the whole thickness of the right cheek. Probably caused by cancrum oris, which occurred as a typhoid complication two years previously. The surrounding soft parts were infiltrated with scar tissue. The tongue was adherent to the lower border of the defect. There was inability to open the jaws. To close this defect a flap was necessary, which should fulfill several conditions. It should have enough thickness to fill the defect without causing a depressed scar after healing was complete. It should be formed of tissue which would conform in appearance to the surrounding skin externally, and take the place of the mucous membrane of the mouth. A rectangular flap 7.5 x 16 centimeters, of whole thickness of skin and subcutaneous fat, was raised from the right arm. The pedicle was in the mid-deltoid region. The flap was folded on itself and the distal end sutured to the pedicle and underlying muscle, thus bringing raw surface to raw surface and forming a flap with fat within, and the whole thickness of the skin on front and back. This was half flat on a wire frame. Two weeks later the tongue was freed, the arm was raised and the flap was sutured into the upper two-thirds of the defect. The arm was held in position by a plaster cast. The pedicle was amputated after eleven days, and eleven days later the remainder of the opening was completely closed. Several attempts were made to relieve the fibrous ankylosis of the jaws, but without success. By this method of treatment the defect was filled by a pad of tissue with the whole thickness of the skin on both sides. The circulation of the flap was assured before transplantation was begun. Most of the shrinkage had taken place before it was transplanted. There was no unsightly scarring of the cheek or neck. The area from which the flap was secured was healed by Thiersch grafts by the time the flap was ready for transplantation. On the whole, the result was very satisfactory.

**The Diagnosis and Treatment of Renal and Ureteral Calculi.**—Dr. John B. Deaver of Philadelphia reported sixty cases of renal and ureteral calculi. Attacks of typhoid preceded the onset of symptoms of stone. A catarrhal condition of the pelvic and ureteral mucosa was the chief predisposing factor in the formation of kidney and ureteral stones. The initial symptoms were attacks of renal colic, trauma, falls, blows, or kicks over the kidney area. Repeated attacks of colic were more frequently due to stones in the ureter. Location, type, frequency of attacks and points of reference of same indicated the site of the stone. Physical examination in cases of aseptic and uncomplicated renal and ureteral calculi gave no assistance in diagnosis in one-half or more of the cases, but was of more assistance in renal than in ureteral cases because of the presence of a palpable mass in a percentage of cases. The diagnosis was much facilitated in difficult cases by the use of pyelographic methods. Tenderness and muscular rigidity were the most important physical signs. Microscopic hematuria immediately following a severe attack of colic was suggestive of stone. The skiagraph was the most valuable means at our disposal in the diagnosis of urinary calculi. In five of his cases the *x*-ray failed to find the stone, which in three instances was found at operation in the ureter once, and in the kidney twice. The use of waxed tipped catheters was said to be in these rare cases the court of last appeal in diagnostic procedure, but the speaker relied entirely on the clinical history. The most frequent causes of ureteral obstruction were either physiological or anatomical. Before attempting any operation it was necessary to satisfy one's self as to the functional activities of the renal tissue, to be assured that the reserve force of the healthy, or, at least, diseased kidney was sufficient to sustain the renal function in the event of the necessity of nephrectomy, which could not always be foretold. Stones situated in the lower terminal (2.5 cm. of the ureter) were removed transvesically. In renal calculus the kidney was exposed and, if possible, delivered through an oblique loin incision; the stone was palpated and an incision made over it and the stone removed with forceps. In nine instances palpation failed to demonstrate the presence of stone. In five of these it was correctly located with the needle. Needling was a practical, harmless, and valuable procedure in cases in which palpation failed. The total mortality in the operated cases of this series was 6.5 per cent.

The following papers were also read: "A Fetal Type of Cecum in the Adult," by Dr. W. C. Borden, Washington, D. C.; "President's Address: Surgical Judgment," by Dr. J. M. T. Finney, Baltimore, Md.; "Identity of the Cause of So-Called Post-Operative Hyperthyroidism and Post-Operative Wound Fever, and the Method of Controlling Both, with Lantern Illustrations," by Dr. Geo. W. Crile, Cleveland, Ohio; "Gastric and Duodenal Ulcers, with Special Reference to the Method of Operative Procedure Employed," by Dr. Frank Martin, Baltimore, Md.; "The Operative Complications of Prostatectomy," by Dr. Francis Hagner, Washington, D. C.; "The Pseudo-Peritoneal Caul of the Colon," by Dr. John W. Long, Greensboro, N. C.

**Pseudoperitoneal Cauls of the Colon.**—Dr. John Wesley Long of Greensboro, N. C., considered the nomenclature of the subject, analyzing the terms, adhesions, membranous pericolitis, veils, pseudomembranes, etc., which were ordinarily applied to the condition described. He showed that we often used very inexact terms in speaking of the membranous formations found about the colon. He proposed the term "pseudoperitoneal caul" as being descriptive and withal correct. Caul means a thin serous membrane, and was especially applied to peritoneal mem-

branes as the layers forming the great omentum. The membranes in question were evidently of peritoneal origin and by the testimony of the majority of writers they were a new formation, therefore pseudo; hence the term, "pseudoperitoneal caul of the colon." There were four chronic conditions found in the right iliac fossa, namely, chronic appendicitis, Lane's kink, Jackson's membrane, and cecum mobile, all of which had much in common as to etiology, pathology, and symptom complex, and were difficult to differentiate clinically. Of this group the writer laid stress on the pseudoperitoneal cauls of the colon, and believed them to be largely of infectious origin, though he did not deny the influence of developmental errors, splanchnoptosis, and intestinal stasis. Dr. Long showed a drawing, with lantern slide picture, of a typical case of pseudoperitoneal caul of the colon (Jackson's membrane) which was embodied in a paper that he read before the American Association of Obstetricians and Gynecologists in 1896, and published in the *International Journal of Surgery* in December of the same year.

**Officers.**—The following officers were elected: *President,* Dr. John Young Brown, St. Louis, Mo.; *Vice-Presidents,* Dr. Ap Morgan Vance, Louisville, Ky., and Dr. Lomax Gwathmey, Norfolk, Va.; *Treasurer,* Dr. Le Grande Guerry, Columbia, S. C.; *Secretary,* Dr. William D. Haggard, Nashville, Tenn.

Atlanta, Georgia, was selected as the place for holding the next annual meeting, in December, 1913.

## Books Received.

*The* MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

DIE KRANKHEITEN DES VERDAUUNGSKANALS. By Dr. PAUL CONHEIM. 275 pages; paper; price, 8.60 M. Carl Marhold, Publisher, Berlin.

KRIMINAL-ANTHROPOLOGIE. By Dr. L. M. KOTSCHER. 1,267 pages; paper. S. Karger, Publisher, Berlin.

LE DIAGNOSTIC ET LE TRAITEMENT DES CANCERS INOPERABLES. By Dr. JOSEPH THOMAS. 158 pages; paper. A. Maloine, Publisher, Paris.

MEDIZINISCH-CHEMISCHES LABORATORIUMS-HILFBUCH. By Dr. LUDWIG PINCUSSOHN. 443 pages; illustrated; cloth; price, 13.50 M. F. C. W. Vogel, Publisher, Leipzig.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1913. William Wood & Company, Publishers, New York. Price, $1.50 to $4.

THE PHYSICIAN'S VISITING LIST FOR 1913. Price, $1.25 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

GOULD AND PYLE'S CYCLOPEDIA OF PRACTICAL MEDICINE AND SURGERY. By R. J. E. SCOTT, M.A., B.C.L., M.D. Second Edition. 653 illustrations; cloth; price, $12 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

CLINIQUE ET THÉRAPEUTIQUE OBSTETRICALES DU PRACTICIEN. By PAUL RUDAUX, A. GROSSE, and V. LE LORIER. 890 pages; cloth; price, 8 fr. Vigot Frères, Publishers, Paris.

DISEASES OF CHILDREN. By BENJAMIN KNOX RACHFORD. 783 pages; illustrated; cloth. D. Appleton & Company, Publishers, New York and London.

A TREATISE ON PELLAGRA. By EDW. JENNER WOOD, S.B., M.D. 377 pages; illustrated; cloth. D. Appleton & Company, Publishers, New York and London.

ANESTHETICS AND THEIR ADMINISTRATION. By SIR FREDERIC W. HEWITT, M.V.O., M.A., M.D. Fourth Edition. 676 pages; illustrated; cloth; price, $5 net. The Macmillan Company, Publishers, New York.

SLEEP AND THE SLEEPLESS. By JOSEPH COLLINS, M.D. 129 pages; cloth; price, $1.00 net. Sturgis & Walton, Publishers, New York.

NEW ASPECTS OF DIABETES. By Prof. Dr. CARL VON NOORDEN. 160 pages; cloth; price, $1.50 net. E. B. Treat & Company, Publishers, New York.

A STUDENT'S MANUAL OF SURGICAL DIAGNOSIS. By GEORGE EMERSON BREWER, M.D. 40 pages; paper. D. Appleton & Company, Publishers, New York.

DER HAFTAPPARAT DER WEIBLICHEN GENITALIEN. By Dr. EDUARD MARTIN. 60 pages; illustrated and 24 plates; cloth; price, 25 M. S. Karger, Publisher, Berlin.

THE HISTORY OF THE PRISON PSYCHOSES. By Drs. PAUL NITSCHE and KARL WILMANNS. 84 pages; paper; price, $1.25. The Journal of Nervous and Mental Disease Publishing Company, Publishers, New York.

INVESTIGATIONS ON EPIDEMIC INFANTILE PARALYSIS. Report from the State Medical Institute of Sweden to the XV International Congress on Hygiene and Demography, Washington, 1912. 271 pages and 7 plates; paper. Published by the State Medical Institute, Sweden.

LE POST PARTUM NORMAL. By Prof. CONSTANTIN DANIEL. 137 pages; paper. A. Maloine, Publisher, Paris.

ANATOMIE DES NERVENSYSTEMS. By Prof. L. JACOBSOHN, Dr. W. FRANKFURTHER, and Dr. A. HIRSCHFELD. 94 pages; paper. S. Karger, Publisher, Berlin.

PHYSIOLOGIE DES NERVENSYSTEMS. By Dr. HUGO WIENER, GEORG PERITZ, OTTO KALISCHER, G. F. NICOLAI, MEYER LIERHEIM, WALTER MISCH, and AUGUSTE LOTZ. 281 pages; paper. S. Karger, Publisher, Berlin.

ETUDES D'ENDOCRINOLOGIE. By Dr. Naame. 74 pages; paper. A. Maloine, Publisher, Paris.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. Vol. VI, No. 1—November, 1912. Illustrated; paper; price, 7s. 6d. Longmans, Green & Company, Publishers, New York.

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS. Vol. XXV. 508 pages; paper. E. Merck, Publisher, Darmstadt.

MOTOR CAR ANATOMY. By Franklin Pierce. 80 pages; illustrated; cloth. The Buckeye Manufacturing Company, Publishers, Anderson, Ind.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. By Dr. L. Katz, H. Preysing and F. Blumenfeld. Vol. III, No. 5. 528 pages; illustrated; paper; price, 7 M. Curt Kabitzsch, Publisher, Wurzburg.

OUTLINES OF PSYCHIATRY. By William A. White, M.D. Fourth Edition. 318 pages; illustrated; paper; price, $3. Journal of Nervous and Mental Disease Publishing Company, Publishers, New York.

REPORT OF THE PELLAGRA COMMISSION OF THE STATE OF ILLINOIS. 250 pages; illustrated; paper.

THE MODERN MATERIA MEDICA. Third Edition, 282 pages; cloth. The Druggists' Circular, Publishers, New York.

BULLETIN FROM THE ROYAL VICTORIA HOSPITAL, No. 2. Edited by O. C. Gruner, M.D. 165 pages; illustrated, paper.

QUARTERLY REPORT OF BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS—Second Quarter, 1912. By Victor G. Heiser, M.D. 53 pages; paper.

TEXT-BOOK OF GENERAL AND SPECIAL PATHOLOGY. By Henry T. Brooks, M.D. 1127 pages; illustrated; cloth; price, $5.00 net. F. A. Davis Company, Publishers, Philadelphia.

GENITOURINARY DISEASES AND SYPHILIS. By Henry H. Morton, M.D. Third Edition. 605 pages; illustrated; cloth; price, $6.00 net. F. A. Davis Company, Publishers, Philadelphia.

FLATULENCE AND SHOCK. By F. G. Crookshank, M.D., M.R.C.P. 47 pages; cloth; price 2s. net. H. K. Lewis, Publisher, London.

INTERNATIONAL CLINICS. Edited by Henry W. Cattell, A.M., M.D. Vol. IV. 22nd Series. 298 pages; illustrated; cloth; price, $2.00. J. B. Lippincott Co., Publishers, Philadelphia.

DISEASES OF WOMEN. By Thomas George Stevens, M.D., B.S., F.R.C.S., M.R.C.P. 431 pages; illustrated; price $5.50. Oxford University Press, Publishers, New York.

DISEASES OF THE EYES. By C. Devereux Marshall, F.R.C.S. 303 pages; illustrated; cloth; price, $3.75. Oxford University Press, Publishers, New York.

TREATMENT AFTER OPERATION. By William Turner, M.S., F.R.C.S. and E. Rock Carling, B.S., F.R.C.S. 247 pages; illustrated; cloth; price, $3.75. Oxford University Press, Publishers, New York.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr. Paul Roemer, translated by Dr. Matthias Lanckton Foster; 571 pages; illustrated; vol. 2; cloth; price, $2.50 net. Rebman Company, Publishers, New York City.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Edited by Archibald MacLaren, M.D. Illustrated; vol. 30; cloth; 758 pages. Published by the Society.

TRANSACTIONS OF THE AMERICAN OTOLOGICAL SOCIETY. Vol. 12, Part 3, 688 pages; paper. Published by the Society.

LA VIRULENCE DES PNEUMOCOQUES. By L. Cotoni. 96 pages; paper. G. Steinheil, Publishers, Paris.

ELEMENTARY BIOLOGY—ANIMAL AND HUMAN. By James Edward Peabody, A.M. and Arthur Ellsworth Hunt, Ph.B. 212 pages; illustrated; cloth; price, $1.00 net. The Macmillan Company, Publishers, New York.

BEITRAGE ZUR KLINIK DER INFEKTIONSKRANKHEITEN UND ZUR IMMUNITATSFORSCHUNG. Vol. 1, No. 1. By Prof. Dr. L. Brauer. 212 pages; illustrated; paper; price, 20 M. Curt Kabitzsch, Publisher, Wurzburg.

## Therapeutic Hints.

**Thyroid Treatment of Epilepsy.**—E. Gelma records the happy results following the use of thyroid extract in cases of epilepsy associated with goiter, myxedema, or some other perversion of the activity of the thyroid gland. The following are enumerated as signs of slight degrees of hypothyroidism: Permanent or transitory edema, nasal obstruction, frequent muffling of the voice, falling out of the hair of the eyebrows, canities, alopecia, anomalies of heat regulation, headaches, somnolence, precocious senility, and various nervous disorders. The author has obtained the best results in the treatment of these conditions with the dry extract of the thyroid gland, administered in doses of 50 centigrams. This drug is particularly of value in the treatment of infantile convulsions.—*Revue de Médecine,* January 10, 1913.

**Lumbar Puncture in the Treatment of Headaches.**—H. Roger and J. Baumel allude to the value of lumbar puncture in the relief of the intense headaches associated with the various infectious diseases. In these cases, whether the condition be called one of meningism or of meningeal reaction, or of serous meningitis, or of chemical meningitis, there is distinct evidence of a mild degree of inflammation of the meninges. This evidence consists in the increase in the content of albumin in the cerebrospinal fluid. A later stage of the inflammatory process is accompanied by the exudation of leucocytes, and finally by the actual passage of bacteria into the cerebrospinal fluid. At the same time there is an increased tension in the cerebrospinal fluid. If this is marked one may safely remove by lumbar puncture as much as 20 to 30 c.c. of the fluid. In the ordinary run of cases the removal of 10 c.c. of fluid is sufficient. Relief follows a few minutes after the operation and in some cases the headache disappears entirely. In certain instances, as in some cases of typhoid fever, several punctures may be necessary. Syphilitic headaches, particularly those belonging to the secondary period of this disease, are markedly relieved by this procedure.—*Revue de Médecine,* January 10, 1913.

**The Treatment of Pertussis.**—M. Landolfi notes that the large number of remedies that have been proposed in the management of this disease indicate that there is no ideal method of treatment. The following has been recommended by Concetti:

℞ Codeine sulphate, 0.02 gram.
Antipyrine, 1 gram.
Resorcin, 2 grams.
Distilled water, 70 c.c.
Tincture of opium, 3 drops.
Tincture of belladonna, 8 drops.
Simple syrup, 10 grams.
Syrup of lemon, 20 grams.

Of this mixture there is given every one to two hours to an infant less than one year old, a teaspoonful; to a child from one to three years of age, a dessertspoonful; and to a child more than three years old, a tablespoonful.

Fede prescribes according to the age of the patient from two to five drops of the tincture of belladonna, or one gram of sodium bromide, or 0.5 milligram of morphine hydrochloride, repeating the dose according to the effect. In some cases he has obtained good results with the use of a 3 per cent. solution of resorcin sprayed into the throat by means of an atomizer four times a day, or by applying this solution to the throat by means of a camel's hair brush. In a similar manner he has employed a solution of corrosive sublimate (1/1000) twice a day. The amygdalate of antipyrin (tussol) has been prescribed as follows:

℞ Amygdalate of antipyrin (tussol), 1 to 3 grams.
Water, 100 grams.
Simple syrup, 20 grams.
S. One teaspoonful every 2 hours.

A remedy which has demonstrated its efficacy but which must be employed with considerable caution is bromoform, which may be given in milk in the dose of three drops per diem for every year of age of the infant. (L. Ferrannini.) Marfan advises the following:

℞ Bromoform, 38 drops.
Oil of sweet almonds,
Gum arabic, of each, 15 grams.
Cherry laurel water, 4 c.c.
Distilled water, sufficient to make 120 c.c.
S. To be well shaken. Dose, one teaspoonful.

Cavazzani has obtained good results with iodine:

℞ Iodine, 1 gram.
Potassium iodide, 15 grams.
Distilled water, 15 grams.
S. Four to six drops per diem to an infant one year old; six to nine drops to a child two to five years old; and ten to fifteen drops to a child older than five years. The dose may be administered in sweetened milk, or in coffee.
—*La Riforma Medica,* January 18, 1913.

**Treatment of the Painful Dysphagia of Laryngeal Tuberculosis.**—Castex recommends the following solutions that may be applied to the tuberculous larynx:

℞ Crystallized menthol, 2 grams.
Tincture of eucalyptus, 20 grams.
Alcohol, 140 grams.
Distilled water, 340 grams.
℞ Anesthesin, 3 grams.
Absolute alcohol, 45 grams.
Distilled water, 55 grams.

Moure's formula is as follows:

℞ Morphine hydrochloride, 0.25 to 0.60 gram.
Cocaine hydrochloride, 0.50 to 1 gram.
Adrenalin (1 to 1000 solution), 2 to 5 grams.
Glycerin,
Cherry laurel water, of each, 50 grams.
Water, 400 grams.
—*Gazette des Hôpitaux.*

**Treatment of the Chronic Purpuras of Infancy.**—Deléarde and Hallez recommend the subcutaneous injection of adrenalin, the administration of acidulated drinks, and above all, of calcium chloride. Marfan advises the administration of a tablespoonful of the following solution twice daily:

℞ Calcium chloride, 8 grams.
Distilled water, 1000 c.c.

P. E. Weill recommends the use of subcutaneous or intravenous injections of fresh horse serum or even of antidiphtheric serum. Nobécourt and Tixier have recently called attention to the use of subcutaneous injections of Witte's peptone. The solution is made up as follows:

℞ Witte's peptone, 5 grams.
Sodium chloride, 0.5 gram.
Distilled water, 100 c.c.

This solution is turbid when cold, but it is clarified by boiling. It is filtered when hot, and is sterilized at a temperature of 120°C. The liquid is injected in doses of 6 or 7 cubic centimeters every two or three days.—*Gazette des Hôpitaux.*

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## Original Articles.

### THE TREATMENT OF DISEASES OF VEGETABLE PARASITIC ORIGIN BY DEEP INJECTIONS OF MERCURY.


BY BARTON LISLE WRIGHT, M.D.,
SURGEON, UNITED STATES NAVY.


SINCE 1908 I have reported several hundred cases of tuberculosis treated by deep muscular injections of mercury, but it was not until March 18, 1911, that I published[1] my belief that mercury is the chemical affinity of the tubercle bacillus. From this it was but a natural and logical step to my theory: For every vegetable organism mercury is the chemical affinity, expressed by chemical formula as follows: *(Vegetable antigen + Hg) + Antibody + Complement = Complement fixation (cure).*

This theory was published[2] December 2, 1911. It was supported by the report of the following cases: One case of acute miliary tuberculosis of pulmonary type, two cases of pulmonary tuberculosis, one case of bronchopneumonia, three cases of typhoid fever, and the following cases of staphylococcic origin: five cases of epidemic catarrh, ten cases of follicular tonsillitis, one case of cystitis, one of cellulitis, one of chronic otitis media, and four cases of furunculosis.

In a third paper,[3] which appeared June 1, 1912, in further support of my theory, I reported the following: four cases of croupous pneumonia, two cases of bronchopneumonia, and six cases of gonorrheal arthritis.

Since then I have treated the following cases with the results noted below:

*Typhoid Fever.*—Case XXXIX.—Admitted March 23, 1912, at 1 P. M.; stated that he had not felt well for some days. Complaint: Head and backache, profound malaise. Temperature 103.6°, pulse 100, respirations 21, rather marked mental hebetude. $MgSO_4$ gm. 30 (℥ i). March 24 about the same time, had five or six nasal hemorrhages during the afternoon. March 25—Symptoms in the morning apparently worse, abdomen slightly tender, pains and tenderness over spleen. Urine showed motile bacilli; 9:50 A.M., injection mercuric succinimide, gm. 0/110 (gr. 17/10); immediate improvement (see chart No. 1), several nasal hemorrhages during the afternoon; temperature began to fall by lysis. March 26—About same, 1 P.M., injection mercuric succinimide, gm. 0.084 (gr. 13/10). From this time on the patient made an uneventful recovery and was discharged to duty April 6.

CASE XL.—Admitted 7 P.M., March 25, 1912,

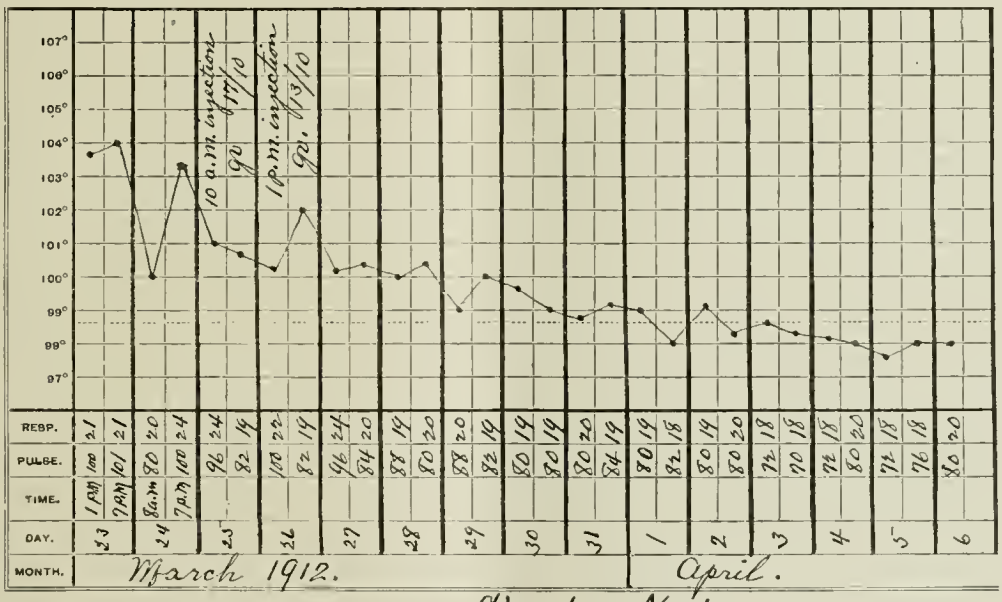


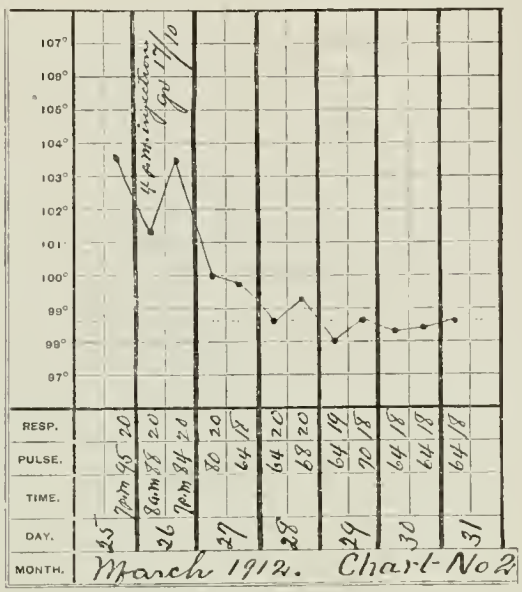

Chart No. 1.

stated that he had not felt well for a week or ten days. Complaint: headache, profound malaise and constipation. Temperature 103.6°, pulse 95, respirations 20. OI. ricini 30 c.c. (f℥i). Large movement of bowels 8 P. M. March 26—No change. Urine shows motile bacilli in large numbers. 10 A.M., temperature 104°, pulse 88, respirations 20. 4 P.M., injection mercuric succinimide gm. 0.110 (gr. 17/10), immediate improvement. 10 P.M., temperature 102, patient felt much better. March 27—Marked improvement. 8 A.M., temperature 100°, pulse 80, respirations 20. Termination by crisis. See Chart No. 2. From this time on convalescence uneventful, discharged to duty March 31, 1912.

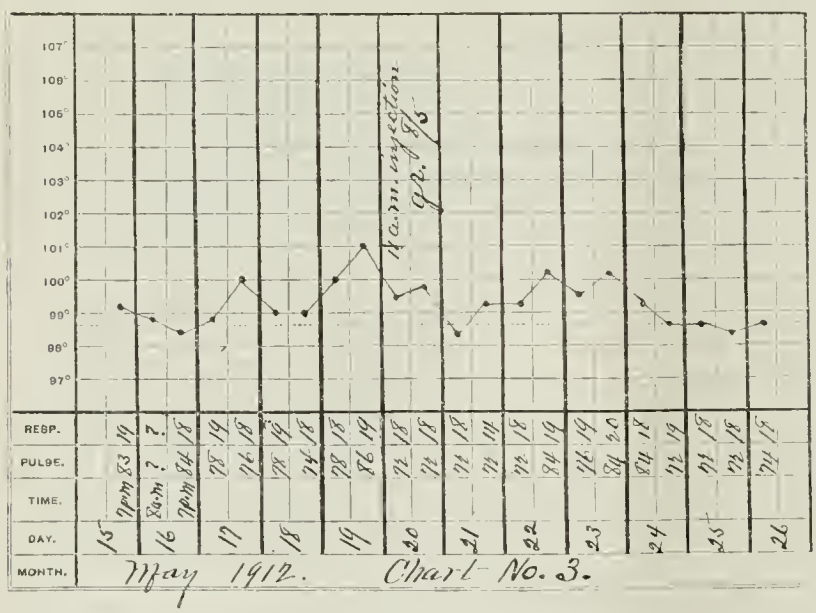
The diagnosis in the above cases was made on

the clinical symptoms, remittent fever, slow pulse rate in relation to temperature, and the presence in the urine of a motile bacillus.

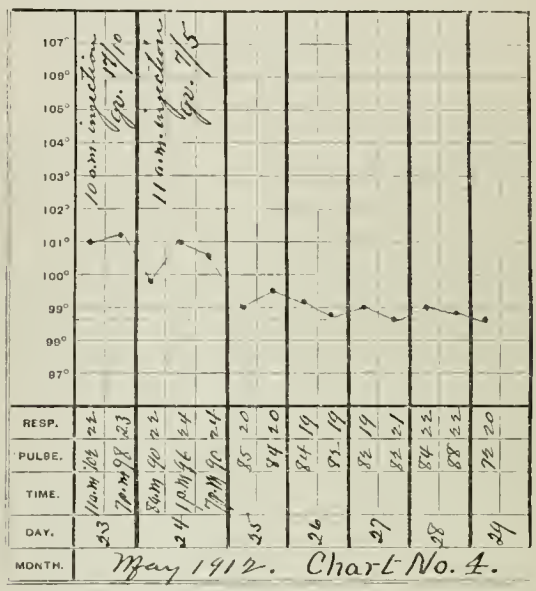
*Vincent's Angina.*—Case XLI.—Admitted May 15, 1912, with diagnosis of tonsillitis. $MgSO_4$ gm.




30 (ʒi) acetphenetidin, quininæ et salol āā gm. 0.13 (gr. ii.) every two hours, solution $AgNO_3$ (15%) applied to tonsils twice daily and Dobell gargle every hour. Up to May 19 the local lesions grew worse; on this date the silver solution was discontinued, pure iodine being substituted. May 20—Much worse, both tonsils presented deep eroded ulcerations, stained smears from which showed *Spirochetæ vincentii*. All previous treatment discontinued. 11 A.M., injection mercuric succinimide gm. 0.104 (gr. 8/5). May 21—Marked improvement. See Chart No. 3. By the 24th the local lesions had healed and on the 26th he was sent to duty.




*Lymphangitis.*—Case XLII.—Admitted 8:15 A. M., May 23, 1912. Infection by unknown organism which entered through a slight scratch made by point of bread knife on tip of left little finger May 21. States that upon going to bed on the night of May 22, was feeling perfectly well, but was awakened early in the morning of the 23d by severe pain in the left hand, forearm, and arm. These members were much swollen, very painful, and tender, all the superficial lymphatics were thickened, cord like, and bright red, the axillary glands were enlarged and tender. Temperature 101°, pulse 102, respirations 22. White count 25,120. Bed. $MgSO_4$ gm. 30.0 (ʒi). 10:30 A.M., injection mercuric succinimide gm. 0.110 (gr. 17/10). May 24—Markedly improved, arm perfectly comfortable, white count 10,800. May 25—Practically well. May 28—Injection mercuric succinimide gm. 0.078 (gr. 6/5) given as a precautionary measure. May 29—Discharged to duty. See Chart No. 4.

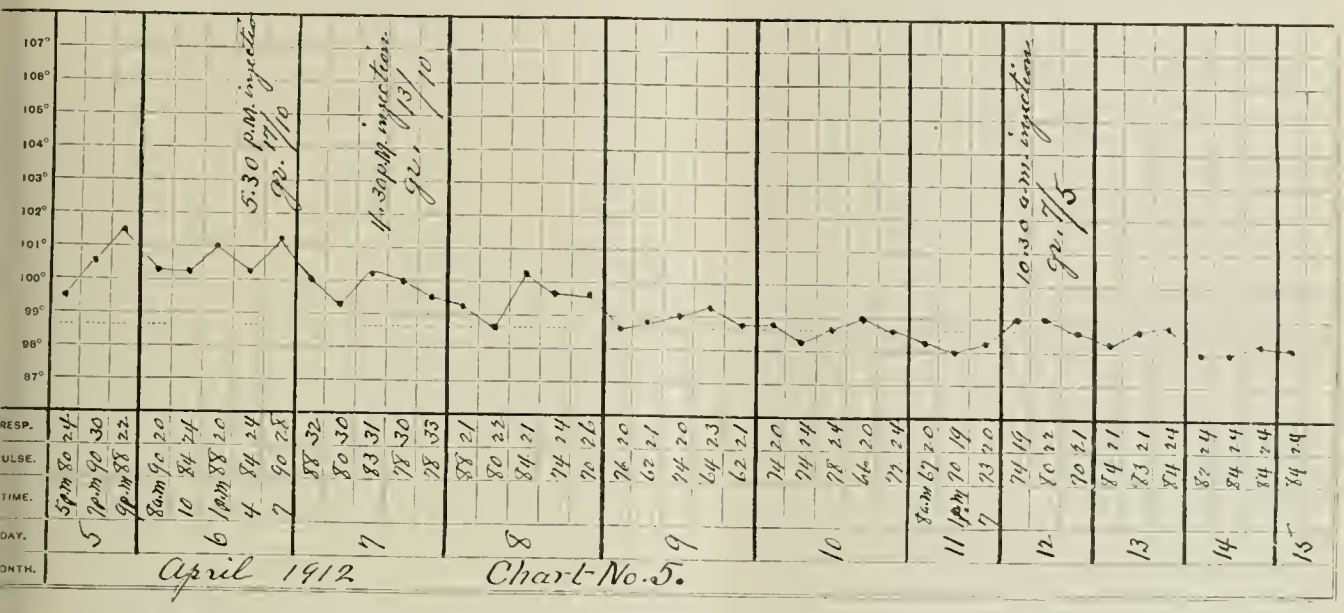



Case XLIII.—Admitted June 21, 1912, lacerated wound of palm of left hand, sustained at loading drill. Wound cleansed, wet $HgCl_2$ dressing applied, forearm in sling. Did well until the 24th, when he presented himself complaining of severe pain extending to axilla, which had kept him awake all the previous night. Hand considerably swollen and wound inflamed. 11 A. M., injection mercuric succinimide gm. 0.091 (gr. 7/5). June 25—All pain, tenderness, and swelling disappeared. Wound healed without further trouble. Discharged to duty June 30.

*Bronchopneumonia.* — Case XLIV — Admitted 8:15 A.M., April 5, 1912. Complaint: severe pain in lower left lobe. Temperature 99.6°, pulse 80, respirations 24, physical signs of old infiltrative process at right apex. Bed. $MgSO_4$ gm. 30.00 (ʒi), during the day developed cough. April 6 — Worse, during morning the sputum became profuse and intermittently rusty, both lower lobes presented the physical signs of bronchopneumonia. Sputum positive for pneumococci. White count 11,000. 5 P.M., white count 15,000. 5:30 P.M., injection mercuric succinimide gm. 0.110 (gr. 17/10). April 7—About the same. $MgSO_4$ gm. 30 (ʒi). 10 A.M.,

white count 16,000. 4 P.M., white count 14,240. 4:30 P.M., injection mercuric succinimide gm. 0.084 (gr. 13/10). April 8—Much improved; moderate mercurialism, abdominal pain, diarrhea, and gingivitis. Opii. pulv. gm. 0.016 (gr. ¼), potassium chlorate mouth wash. White count, 13,000. Convalescence established, which was uneventful. See Chart No. 5.

CASE L.—Reported October 27, 1912. Complaint: severe pain in lumbar region and in bladder, with marked vesicle tenesmus. Had gonorrhea in February, 1911. Urine contains pus and gonococci. October 28—Injection mercuric succinimide gm. 0.098 (gr. 1½). October 29—Marked improvement. October 30—Injection mercuric succinimide gm. 0.065 (gr. 1). October 31—All symptoms




*Furunculosis.*—The four following cases had had repeated outcroppings of boils extending over a period of from four to six months.

CASE XLV.—June 9, three boils incised, drained, and dressed. June 11, two additional boils incised and dressed. June 12, two more incised and dressed. June 13, three new boils developing. 11 A.M., injection mercuric succinimide gm. 0.104 (gr. 8/5). June 14—New boils aborted, pains and tenderness disappeared. June 17—No new outcropping. To duty.

CASE XLVI.—June 20, reported with nineteen boils of moderate size distributed over the inner surfaces of both thighs. Injection of mercuric succinimide gm. 0.104 (gr. 8/5). All boils aborted, no further outcropping. June 22—Injection gm. 0.065 (gr. 5/5) as precautionary measure.

CASE XLVII.—July 25, 1912. Ten boils of moderate size distributed over forearms. Injection mercuric succinimide gm. 0.091 (gr. 7/5). June 26—All pain and tenderness disappeared. June 28—One new boil developed on left side of face—injection mercuric succinimide gm. 0.084 (gr. 13/10). Aborted, no further outcropping.

CASE XLVIII.—Reported July 25, 1912. Six fairly good sized boils. Injection mercuric succinimide gm. 0.091 (gr. 7/5). June 26—Practically aborted, all pain and tenderness disappeared excepting in one boil on left knee. June 27—Cured.

*Gonorrheal Cystitis.*—CASE XLIX—Reported August 30, 1912. Complaint: pain in the bladder with marked vesicle tenesmus; these symptoms had followed apparent recovery from an attack of gonorrhea some three months prior to his present condition. Urine contained considerable amount of pus, and was positive for gonococci—injection mercuric succinimide gm. 0.098 (gr. 1½). August 31—Marked improvement. September 1—Injection mercuric succinimide gm. 0.065 (gr. 1). September 3—All symptoms disappeared. Cured.

about disappeared. Slight gingivitis. November 2—Injection mercuric succinimide gm. 0.065 (gr. 1). November 3—To duty. Cured.

*Gonorrheal Arthritis.*—CASE LI.—Reported August 22, 1912, with rheumatic pain in right knee joint, which developed some two years ago, following an attack of acute gonorrhea, since which time it has given him constant trouble. Injection mercuric succinimide gm. 0.098 (gr. 1½). August 23—Marked improvement. August 24—Injection mercuric succinimide grm. 0.065 (gr. 1). August 25—All pain disappeared and it has not returned up to date.

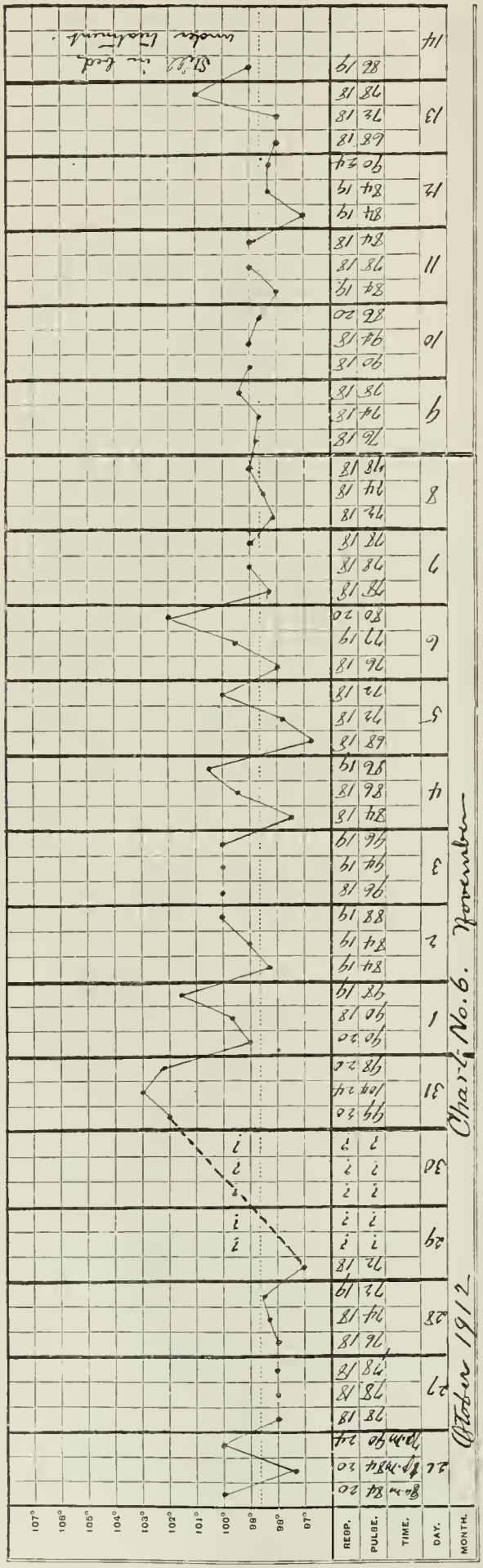
The following cases, thirty-two, treated by mercurial injections, out of some forty odd infections, represent an acute infectious disease caused by an atypical colon bacillus. In nearly all, the disease began suddenly being ushered in by a mild chill, followed by temperature of an intermittent type, with a daily range from subnormal to 102-103° and several times reaching 105°. The pulse from 85 to 104, being slow in relation to temperature. Headache and painful joints were common. The mentality bright. The white count was low, ranging from 3,000 to 6,000. Three types presented:

Pulmonary, in which there was severe paroxysmal cough, profuse purulent expectoration, which at times was purulo-sanguinous, associated with severe pains in the involved lung, and at times with inflammation and ulceration of tonsils and pharynx. These cases gave rise to higher temperatures.

Abdominal, in which there was somewhat obstinate constipation associated with colicky abdominal pain, usually in the gall-bladder region.

Genitourinary, in which some part of this tract was involved, giving rise to the usual symptoms produced by an acute inflammatory process of the organ infected.

The organism, an actively motile bacillus, Gram negative, was found in the urine of every case, in




the blood of sixteen cases examined, in the sputum of pulmonary cases, in tonsillor secretions and exudates, and in the pus from the one subcutaneous abscess noted. Out of five cultures made from the blood specimens of five cases, four were positive for this organism. Numerous cultures from the urines and other fluids and exudates were positive. The blood cultures and a number of urine cultures were sent to the laboratory of the U. S. Naval Medical School, Washington, D. C., for identification, one urine culture was sent to Professor Rosenberger, Jefferson Medical College, Philadelphia, Pa.; they reported "an atypical colon bacillus." I desire to express my thanks to Dr. Rosenberger, Dr. Stitt, U. S. N., and Dr. Clark, U. S. N., for differentiating this organism.

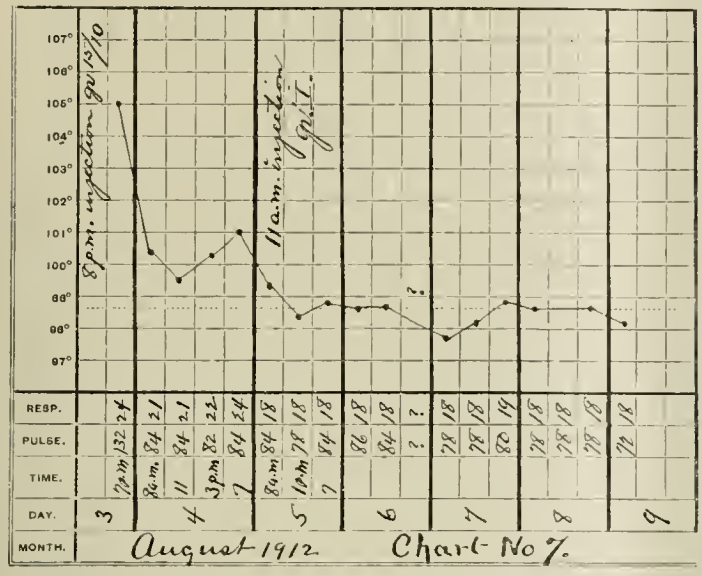
*Pulmonary Type*—(20 cases) 52-72: Case (*a*)—Reported as showing the course of a mild infection treated symptomatically, no mercurial injections having been given. Admitted October 26, 1912, complaining of sore throat, slight pain in right chest and slight cough associated with painful joints and malaise. The pharynx and tonsils were swollen and congested. Bed. $MgSO_4$ gm. 30 (℥i). Quinine and salol āā gm. 0.130 (gr. ii.) every two hours. Tr. iodine applied locally to pharynx and tonsils twice daily, Dobell's gargle every hour. Improved (see Chart No. 6), and was discharged to duty October 29. Readmitted 7 A.M., October 31, saying that he had not felt well since returning to duty, and making the same complaint as originally, excepting that all symptoms were worse. The same treatment was prescribed but without results. Cultures made from urine was positive for atypical *B. coli*. Quinine was given in moderate doses, urotropin gm. 0.648 (gr. x.) every three hours, various local applications were made, a tonic of iron and arsenic was tried.

Case (*b*)—Admitted August 3, 1912. Complaint: Profound malaise, painful joints, slight cough. Temperature 105°, pulse 122, respirations 24, see Chart No. 7. Bed. $MgSO_4$ gm. 30.0 (℥i). Urine and blood positive for atypical *B. coli*. 8 P. M., injection mercuric succinimide gm. 0.098 (gr. 1½). Immediate improvement. August 5, feels perfectly well, convalescence established. 11 A. M., injection mercuric succinimide gm. 0.065 (gr. i). August 8: Convalescence continues, blood showed a few motile bacilli. August 9: Blood negative for motile bacilli. Discharged to duty cured.

Case (*c*)—Reported July 3, 1912, complaining of headache, severe right-sided abdominal pain, just below the costal margin. Moderate cough and mucopurulent expectoration. Urine positive for motile bacilli. Temperature 103°, pulse 88, respirations 24, see Chart No. 8. 4:30 P. M., injection gm. 0.098 (gr. 1½). July 4, feels better, but cough is severe, profuse frothy purulent sputum. 3:30 P. M., injection mercuric succinimide gm. 0.078 (gr. 6/5). July 5, about same. July 6, marked improvement. July 9, sputum contains large numbers of motile bacilli, injection mercuric succinimide gm. 0.052 (gr. 4/5). From this point on patient improved rapidly. July 11, injection mercuric succinimide gm. 0.065 (gr. i). July 12, convalescent, cough and sputum disappeared. July 18, injection mercuric succinimide gm. 0.065 (gr. i) given as a precautionary measure. July 22, discharged to duty. This was one of two cases in which the fever was of remittent type.

Case (*d*)—Admitted October 20, 1912; complaint,

severe cough, profuse expectoration and malaise. Temperature 101.8°, pulse 116, respirations 20. Urine positive for motile bacilli. Symptomatic treatment, salol gm. 0.324 (gr. v) and codein gm. 0.016 (gr. ¼) every two hours. Condition remained unchanged until the morning of the 25th, when all

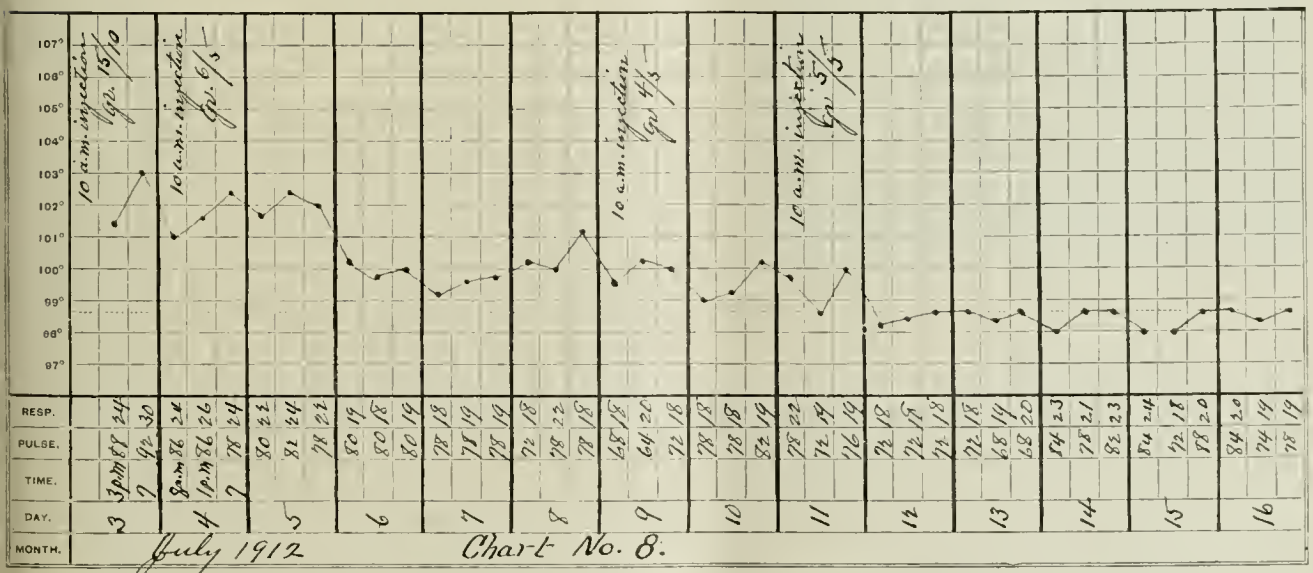



symptoms were aggravated, and a most severe pain developed in the right chest. Temperature 104°, pulse 84, see Chart No. 9, 10:30 A. M., injection mercuric succinimide gm. 0.098 (gr. 1½). October 26, marked improvement. October 29, injection mercuric succinimide gm. 0.065 (gr. i.). Cough and expectoration disappeared. November 2, injection mercuric succinimide gm. 0.065 (gr. i.). November 5, discharged to duty.

*Abdominal Type*—(4 cases), 73-76: All reported with severe colicky pain over the gall-bladder region, temperature about 100 to 100.5°, and more or less obstinate constipation, purgatives and other treatment administered symptomatically afforded no relief, all were promptly cured by one or two injections.

c.c. of urine in 24 hours, specific gravity 1000, considerable albumin, fatty and granular casts, renal epithelium, blood cells, and a moderate number of motile bacilli. 4 P. M., injection mercuric succinimide gm. .091 (gr. 7/5). June 15, edema of face and legs much less, passed 450 c.c. urine during 24 hours. Developed rather severe mercurialism, marked gingivitis, severe abdominal pain, purging, and rectal tenesmus. June 16, much better, passed 800 c.c. of urine, specific gravity 1010, trace of albumin, a few fatty and granular casts and a few red blood cells and motile bacilli were present. Bilateral hydrocele developing. June 18, much improved, feels quite well. June 19, total amount of urine 1,000 c.c. June 20, 1,000 c.c. urine, specific gravity 1006, slight trace of albumin, negative for casts. 2 P. M., injection mercuric succinimide gm. 0.052 (gr. 4/5). June 21, mecurialism, patient evidently having an idiosyncrasy for the drug. June 22, improved, 1,200 c.c. of urine passed during the 24 hours. June 24, 1,400 c.c. urine passed, specific gravity 1006, negative for casts, very few motile bacilli present. Mercurialism disappeared. June 29, complained of soreness in buccal surface of left cheek, small area moderately indurated. July 1, small ulcer developed in this area. July 2, well-developed ulcer about the size of a quarter. Fresh secretion from this ulcer showed moderate number of motile bacilli, stained smear (India ink), a number of spirochetes. Owing to this idiosyncrasy, mercury was not injected. The ulcer was painted with iodine twice daily and hydrogen peroxide mouth wash prescribed and an iron tonic administered. There was no further change in the condition of the kidneys. On July 10 he was transferred to the U. S. Naval Hospital, Newport, R. I., the ulcer healed, and his general condition apparently much improved. I have heard indirectly that he died some ten days following his transfer.

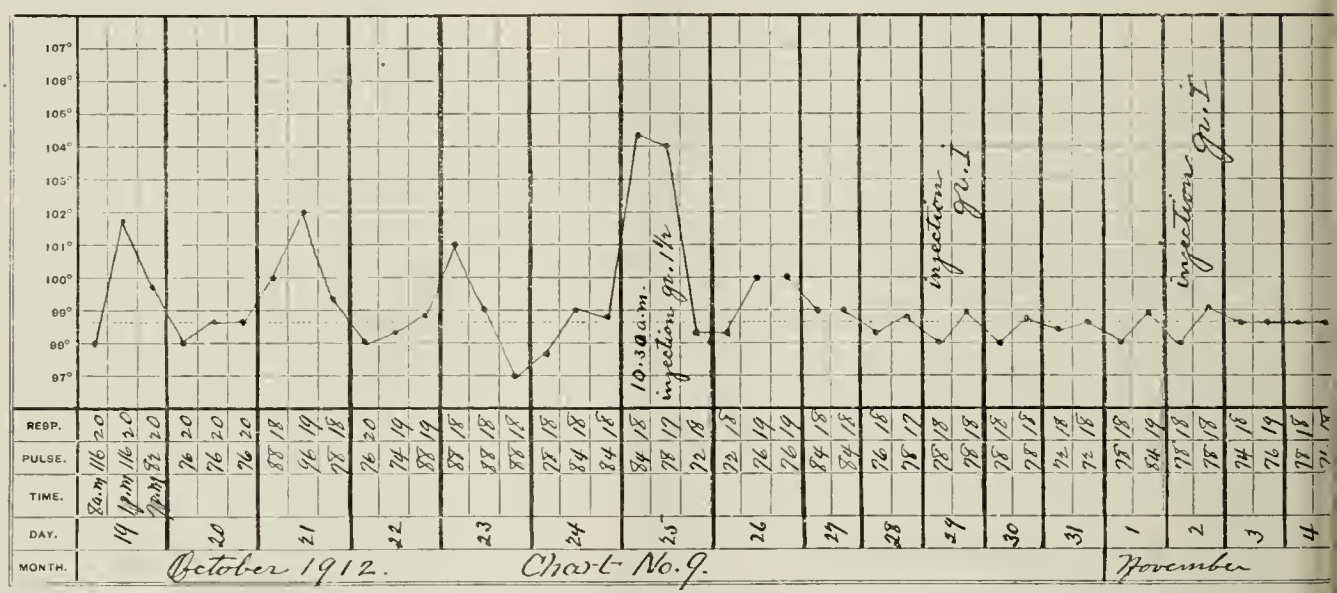
Case (*f*)—Reported June 12, 1912, complaining of nausea and headache, lower eyelids, feet, and




*Genitourinary Type*—(8 cases), 77-84: Case (*c*)—Admitted June 13, 1912. Complaint, pain in the back and profound lassitude and inability to urinate. His face and legs, edematous. Bed. $MgSO_4$ gm. 30.0 (℥ i). Diuretics. June 14, passes 250 ankles markedly edematous. Temperature 100°, pulse 84, respirations 24. Bed. $MgSO_4$ gm. 30.0 (℥i) Potassium acetate gm. 1.324 (gr. xx.) every three hours. July 13, about the same; 24 hours' urine 200 c.c., containing a large amount of albu-

min, coarse granular and hyaline casts, renal epithelium, blood, and numerous motile bacilli. Caffeine citrate gm. 0.032 (gr. ½) every 3 hours; 300 c.c. of water every hour, in addition pilocarpine gm. 0.008 (gr. ⅛) at 1.30 P. M. June 14, total amount of urine voided 300 c.c. All former treatment discontinued, injection mercuric succinimide gm. 0.091 (gr. 7/5). June 15, much improved, edema rapidly disappearing, voided 600 c.c. urine. June 16, much better, edema disappeared; 800 c.c. of urine voided. Specific gravity 1012, slight trace of albumin present, Hyaline casts, epithelium and blood disappeared. A few granular casts. Motile bacilli very numerous; 1 P. M., injection mercuric succinimide gm. 0.078 (gr. 6/5). June 17, improved; 1,000 c.c. of urine passed. June 19, feels perfectly well, urine contains slight trace of albumin, and a few motile bacilli. June 20, 1,500 c.c. of urine passed, specific gravity 1020, negative for albumin and motile bacilli. June 21, injection mercuric succinimide gm. 0.065 (gr. i). June 23, urine normal in amount and color, specific gravity 1014, free from albumin, casts, and motile bacilli. June 27, to duty, cured.

Case (*j*)—Reported August 30, 1912, complaining of pain in the bladder and back and marked vesicle tenesmus. Urine contained large numbers of motile bacilli and considerable pus; 10 A. M., injection mercuric succinimide gm. 0.098 (gr. 1½). August 31, marked improvement. September 2, injection mercuric succinimide gm. 0.065 (gr. i). September 4, has felt perfectly well since last injection. September 25, reported complaining of same symptoms noted above. Motile bacilli again present in urine, injection mercuric succinimide gm. 0.098 (gr. 1½). September 27, gm. 0.078 (gr. 6/5). September 30, gm. 0.065 (gr. i.), following which he had no further trouble.




Case (*g*)—Reported at 7.15 P. M., August 8, 1912, complaining of severe pain in both kidneys radiating down the ureters. Bed. $MgSO_4$ gm. 30.0 (℥i), urotropin gm. 0.648 (gr. x.). August 9, no change, urine contained numerous motile bacilli; 11 A. M., injection mercuric succinimide gm. 0.091 (gr. 7/5). August 10, symptoms nearly disappeared. Slight gingivitis. August 10, condition cured. Gingivitis continues, potassium chlorate mouth wash. August 14, to duty.

Case (*h*)—Reported July 3, 1912, with swollen, tender, and painful right testicle, pain extending up the cord. Urethra normal and no history of injury. Urine contained moderate number of motile bacilli; 11 A. M., injection mercuric succinimide gm. 0.098 (gr. 1½). July 4, testicle and cord normal, pain entirely disappeared. To duty.

Case (*i*)—Admitted by the junior medical officer of the ship August 9, 1912, with severe pain in right abdomen, no diagnosis. Bed. $MgSO_4$ gm. 30.0 (℥i) and Dover's powder and quinine āā gm. 0.162 (gr. 2½) t.i.d. prescribed. August 10, $MgSO_4$. August 12, no change until 7.15 P. M., when he complained of severe pain in both spermatic cords and testicles. August 13, condition the same. Urine negative for motile bacilli. Blood positive for motile bacilli, phagocytosis of these organisms well seen. August 14, pain in cords and testicles much worse, suffered intensely all previous night; 10 A. M., injection mercuric succinimide gm. 0.098 (gr. 1½). August 15, marked improvement, quite comfortable. August 16, the same, injection mercuric succinimide gm. 0.065 (gr. i). August 17, about well. August 22, cured, to duty.

Case (*k*)—Reported October 21, 1912, after having been at his home for a week, bringing with him a certificate from his family physician stating that he had been under his treatment for lumbago during the previous five days. Complaint, pain in the back and vesicle tenesmus. Bed. Urotropin gm. 0.648 (gr. x.) every three hours. October 22, condition the same. The urine contains a large amount of pus, negative for albumin, casts, and motile bacilli. Treatment continued. October 23, no change in condition. Bouillon tube inoculated with 2 c.c. of urine. Urotropin continued. October 24, culture almost pure, motile bacilli. Pain in back very severe, passes urine involuntarily. All previous treatment discontinued; 10 A. M., injection mercuric succinimide gm. 0.098 (gr. 1½). October 26, marked improvement, nearly free from pain. October 27, 10 A. M., injections mercuric succinimide gm. 0.078 (gr. 6/5). October 28, about well. October 30, to duty, cured.

Case (*l*)—Patient reported October 23, 1912, complaining of severe pain in the left loin and of vesicle tenesmus. Urotropin gm. 0.648 (gr. x) every three hours prescribed. This was continued

until October 28, when all symptoms were very much aggravated. Urine showed pus and motile bacilli. Bed. 10.30 A. M., injection mercuric succinimide gm. 0.098 (gr. 1½). October 29, marked improvement. October 30, improved. Injection mercuric succinimide gm. 0.078 (gr. 6/5). November 2, about well. Injection mercuric succinimide gm. 0.065 (gr. i) given as precautionary measure. November 5, no further trouble, discharged to duty, cured.

From the "Paris Letter" of the MEDICAL RECORD of recent date, I quote the following: "An interesting discussion took place recently at a meeting of the Société de Chirurgie on the treatment of infection by intramuscular injections of mercury. Souligoux related his experience with this method in the treatment chiefly of puerperal infection. He injected daily for seven days a solution of 1 cg. each of cyanide of mercury and stovaine in 1 c.c. of distilled water. Of 144 patients so treated, the author lost but three, and on the strength of this showing urges the use of mercury in all cases of systemic infection, the only contraindication being renal insufficiency."

REFERENCES.

1. *New York Medical Journal*, March 18, 1911—"The Treatment of Tuberculosis by Deep Muscular Injections of Mercury."

2. MEDICAL RECORD, December 2, 1911—"The Treatment of Tuberculosis and Other Diseases of Vegetable Parasitic Origin by Deep Muscular Injections of Mercuric Succinimide."

3. MEDICAL RECORD, June 1, 1912—"The Treatment of Diseases of Vegetable Parasitic Origin by Deep Muscular Injections of Mercuric Succinimide."

## PERSONAL OBSERVATIONS WITH SUSPENSION LARYNGOSCOPY.

BY WOLFF FREUDENTHAL, M.D.,

NEW YORK.

WHEN a gynecologist or general surgeon starts out to remove a 10-lb. tumor from any part of the body he is certain that he will get it. But when a laryngologist is about to extract a little bit of a fibroma from the vocal cord he never works with positive knowledge of success. Skill and experience go a great ways, but here the psychology of the patient often plays an unpleasant part. In a number of instances the application of cocaine has an opposite effect from that desired, the patient becoming very nervous from the inability to swallow and a muffled feeling in his throat. Everybody with large experience has seen such cases. General anesthesia is impossible.

Other affections of the larynx are localized at such places that they cannot be reached well; for example, ulcerations in certain places causing dysphagia and finally odynphagia. Whether a patient dies from a large tumor in the abdomen or small ulcers in the larynx is equally important, since it is a loss to humanity.

It was therefore not more than natural that laryngologists for a long time in the past looked for another method to make the larynx more accessible. The first was Kirstein with his autoscopy. That was given up. Then came the direct laryngoscopy of Killian. No doubt that method constituted a decided advance and occasionally it worked well, but altogether it was not satisfactory.

Then Killian himself worked for several years on a new idea, the result of which is "Suspension Laryngoscopy." Before describing this novel way of rendering the larynx accessible to our vision and instruments it may be proper to remind the reader that in 1907 von Eicken* and Gerber almost simultaneously published their observations on hypopharyngoscopy and pharyngo-laryngoscopy, respectively. By means of a hook introduced into the larynx and drawn forward, not only was its interior exposed to view, but the sinus pyriformes and the upper portion of the esophagus as well. In the writer's experience, however, this method was only rarely effective and apparently has been forgotten. Although in exceptional instances the above picture was visible, even then the method proved impracticable from an operative standpoint.

The new method of Killian, *i.e.* suspension

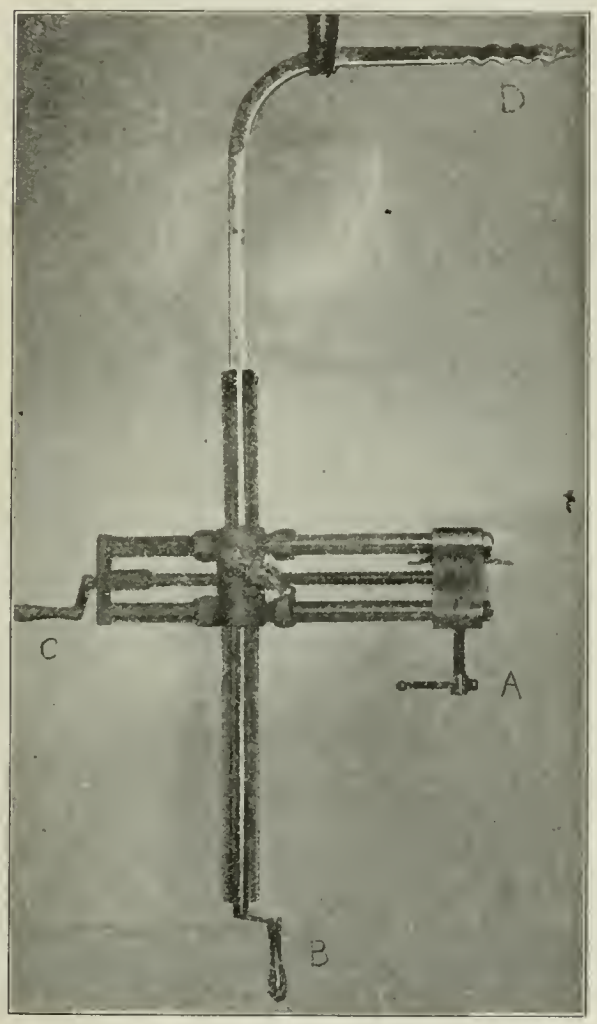



FIG. 1.—The stand for use in suspension laryngoscopy.

laryngoscopy, is both easy to learn and of great practical value. Killian hit upon this invention through a mere coincidence. In order to afford a draftsman a good view of the interior of the larynx he had a cadaver hung up by the lower jaw. Afterwards the idea struck him that this procedure might be possible on the living subject. Fortunately he found a good subject, and after much arduous work brought the method to its present perfection.

The instrumentarium necessary for suspension laryngoscopy consists of the following: An operating table, a so-called gallows or stand, and the hook spatula.

*See Frankel's Archiv für Laryngologie, Vol. 19, 1907, pp. 213, 336.

Any operating table that can be straightened out will be suitable for this work. It is best to have one that is not too low or one that can be raised to the desired height. The gallows or stand (Fig. 1) is screwed on to the operating table at the right side of the patient. It consists of an iron bar bent nearly at a right angle, is held by a strong screw (A) attached to the table and can be moved easily by means of cranks upward and downward (screw B), and forward and backward (screw C). It is important that all these screws and cranks move easily, *i. e.* without jerking. The horizontal part of the bar is hollowed out in several places (D) in order to receive the third part, viz., the hook

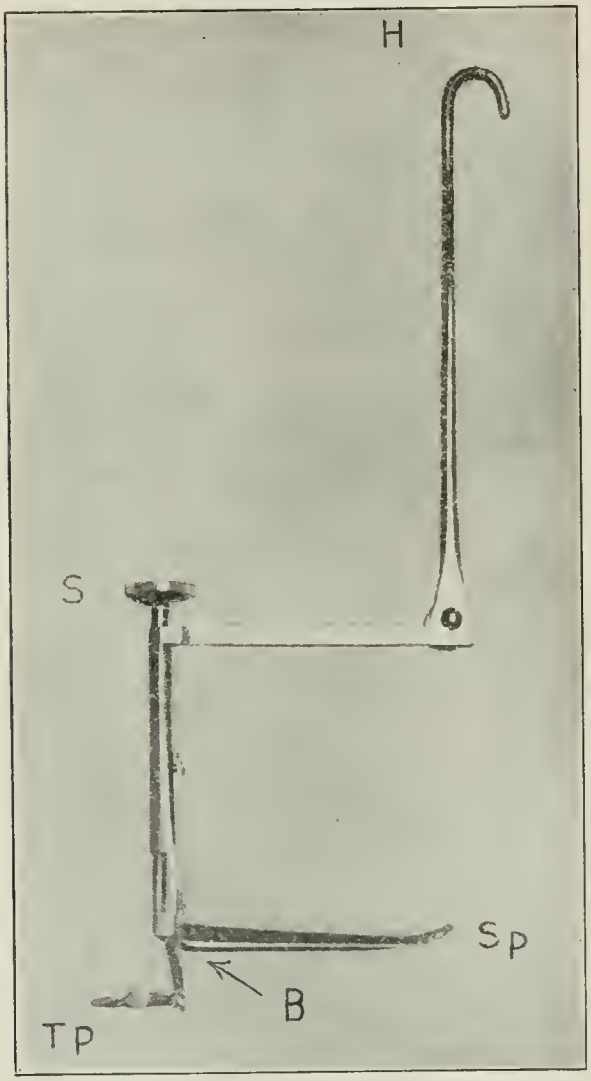



Fig. 2.—The hook spatula; H, hooks; S, screw; Sp, spatula; B, bridge; Tp, tooth plate.

spatula, so called by Killian (Fig. 2). This again really consists of three parts: (*a*) the handle, (*b*) the tongue holder, and (*c*) the mouth gag. The handle, according to the original device, is a straight hook 32 cm. long, which is attached to the stand. Connected with it is a tongue depressor, a modified Fränkel spatula (Sp.). It is hollowed out so that the cross section is "V" shaped. Since it is not used to depress the tongue, but to hold it up, I prefer to call it the tongue holder. Attached to the handle is also the mouth gag, which has a plate for the upper teeth (T. P.) and can be opened or narrowed down by means of screw S to suit the individual case. It is open to the right to give the operator space for his instruments.

The writer uses a modification of this handle as published in the *Berl. klin. Wochensch.*, p. 1331, 1912, by Dr. Albrecht. Instead of the hook being one straight line, Albrecht bent it at right angles at a certain distance from the spatula. It runs parallel (*d e*) to and extends as far as the tongue spatula (*c b*). To it is now attached the hook, so that schematically it looks like this:

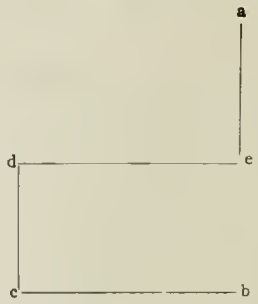



Fig. 3.

The advantage derived from this modification is that the instrument has a tendency to push itself into the interior of the larynx, rather than to slip out. Details of these theoretical deductions, which have since proved to be practical, can be seen in the article cited above.

After having thus described as briefly as possible the instrumentarium, we now come to the operative procedure itself, and shall discuss, first:

*The Operation Under Local Anesthesia.*—Generally speaking, it may be said that the same rules hold good for suspension laryngoscopy as for bronchoscopy. Those patients who can open the mouth wide, have no incisor teeth, and can bend their head backwards with ease will make good subjects for a trial, while others, with short, thick necks, etc., will be difficult to examine. After thoroughly cocainizing the base of the tongue, the pharynx, epiglottis, and interior of the larynx with a 20 per cent. solution of cocaine, the patient is placed flat on the operating table. The stand or gallows having been attached to the table, the surgeon seats himself back of the patient, one assistant to his right and a nurse on the left to hold the patient's head. The nurse may be dispensed with, but occasionally is of much assistance. The patient is then placed so that his shoulders are on a line with the table, the head hanging down or being held by a nurse. The writer now proceeds somewhat differently from Killian, who attaches the tongue spatula to the gallows and then introduces the spatula standing. The writer is seated from the start, and under a good illumination by the Kirstein head light introduces the spatula slowly far back into the pharynx (the epiglottis is not always visible), while almost simultaneously the assistant adjusts the stand in a horizontal and vertical direction and hangs the tongue spatula in its place. Now the screw S is used to open wide the mouth, and the adjustment of the apparatus is completed (Fig. 4). The view now obtained is excellent. We see at once the interior of the larynx, more so especially, naturally, the posterior commissure; we see part of the trachea, the sinus pyriformes, the pharynx, and occasionally the upper portion of the esophagus. At the same time we have both hands free for operation and the larynx is absolutely open to us, *i. e.* there is no hook or tube in it to encroach upon its lumen. How valuable this is to the surgeon everyone will appreciate who operates by this method.

In order to remove certain diseased areas from

the interior of the larynx we simply resort to a double straight curette or any other suitable straight instrument, and this can be done as quickly, or more quickly, than I can put this in writing. I have done this repeatedly. At other times it is more difficult, but it is always easier than with the old method.

*The Operation Under General Anesthesia.*—In the case of timid patients, and where we expect to do a major operation, we give general anesthesia. Killian uses either the morphine-scopolamine narcosis or chloroform. In this country chloroform is considered by most anesthetists more dangerous than ether, and for that reason we have generally employed the latter. The introduction of the tongue spatula is somewhat more difficult under general anesthesia. When the patient is under the influence of the anesthetic the mouth gag is put into the right corner of his mouth, the tongue slightly withdrawn, and the spatula inserted. After the spatula is once fixed, the mouth gag is taken out. Thus far the writer has resorted to general anesthesia in only a few cases, since the majority could be operated upon with ease under a local anesthetic. It must be remembered that in order to eliminate the element of reflex action we must apply cocaine to the larynx even under general anesthesia.

Care must be taken not to put the patient's head too far backward; a mistake that is made by beginners just as frequently as in bronchoscopy. The introduction of the spatula is sometimes rather difficult, not only because the tongue occasionally gives a great deal of trouble, but the configuration of the teeth and mouth, etc., tends to add to the difficulties. If the patient does not hold his tongue up, but moves it in all directions, the best way to overcome this is to introduce the spatula from the side. The teeth also occasionally give us quite some trouble. I recall the case of Mrs. B., whom I examined for diagnostic purposes. She had a very marked bust, and besides there was only one incisor tooth in the upper jaw, from which the plate constantly slipped off, but finally we succeeded in attaching the instrument.

There are several advantages connected with this method. (1) We see parts which could not be seen otherwise. (2) Other parts, as neoplasms, for example, assume a different aspect. (3) It is easier for the patient and the physician to operate in this way.

Referring to the first, I would mention the anterior portion of the posterior laryngeal wall. This is easily brought to view. The writer has examined quite a number of tuberculous cases, and here we frequently have ulcerations, infiltrations, stalactite-like excrescences, etc., in that region. To remove these has always been a difficult, often an impossible, task. I believe that by this method a new era has been inaugurated; at least I feel that my surgical inactivity of the last few years in such cases has already undergone a radical change. We removed formerly portions of vocal cords and ventricular bands, with discouraging results after many years' experience. Now we are in a position to operate in the interarytenoid region and on the arytenoids as well. These cases often include incipient and primary conditions of laryngeal tuberculosis. Larger experience will show us the value of such procedures. One thing is positive, viz., that we are able to curette all ulcerations much more thoroughly than ever before. That evidently is a more efficient procedure than the application of lactic acid, nitrate of silver or even the galvanocautery point.

Secondly, by means of suspension laryngoscopy one sees tumors of the larynx, granulations, etc., in a different way, *i. e.* more bodily, if I may say so. The whole depth of a neoplasm can be judged better in cases of carcinomatous or other growths. The case of S. F. (Case IV) will best illustrate this point.

Thirdly, after a patient has once overcome the fear of being placed on an operating table the operation is more comfortable for him as well as for the physician. For the patient, because it is performed more quickly; for the physician, because a great deal of time and energy is saved. To be almost entirely independent of the patient's assistance is, indeed, a great step forward in the surgery of the larynx.

The most difficult part to see is naturally the anterior commissure. Very often the epiglottis slips off and hides that portion of the larynx. No matter how often you insert the tongue holder in certain cases, the epiglottis will slip off and prevent us from seeing and operating in the neighborhood of the anterior commissure. To overcome this, the writer has modified the spatula, a description of which will be published shortly.

Fig. 4.—The patient ready for operation, with the instruments in position.

It is evident that suspension laryngoscopy will be used mainly for tuberculous cases and papillomata of the larynx, especially in children, but there are a number of other conditions where the value of this method will be clearly shown. We would refer again to the case of Sam F. (Case IV), in which there was a web-like structure in the trachea, and would further mention cases of abscess of the larynx. You know how dangerous it is to open an abscess of the larynx in the sitting posture, and that accidents happen repeatedly. How much safer will we feel when we operate with the patient's head hanging downward and when we are assured that the contents of the abscess will drain downward, *i e.* into the nasopharynx. An extensive field in the removal of foreign bodies from the larynx is opened to us now. The question of tonsillectomy will be referred to later in this report.

Let me now quote a few cases operated on with the aid of suspension laryngoscopy:

Case I.—M. F. has suffered from tuberculosis of the lungs for about eight years and has a large mass of tuberculous infiltration, with an ulceration on the posterior wall of the larynx. Both arytenoids seemed enlarged (perichondritis). He had been seen by many colleagues of this city. The writer

also had him under treatment for quite a time, but it was impossible to get rid of the infiltrations. Even fulguration did not exert any beneficial effect, as it was not well tolerated by the patient. Since his pulmonary condition did not bother him he was naturally desirous of having his throat cured. On November 15, 1912, in the presence of a number of laryngologists who attended the Clinical Congress of Surgeons, quite a large piece was removed from the larynx. Part of the arytenoid had been caught and removed at the same time, but not the entire mass of granulations. Post-operative pain was very slight; no dyspnea. A false membrane formed over the site of operation, but soon disappeared. On December 20, 1912, the whole mass was curetted thoroughly, with very satisfactory result thus far.

Case II.—Mrs. Z., a very nervous and excitable woman, was suffering from tuberculosis of the lungs and ulcerations of the epiglottis and left vocal cord. She was curetted on November 8, 1912, as thoroughly as possible. The dysphagia disappeared to a great extent afterwards, and if it were not for the pain from the ulceration of the epiglottis that could not be reached she would have felt much better. Two weeks later a number of ulcers appeared, which, however, healed slowly under routine treatment.

We have examined and operated on five more tuberculous patients without any ill effect, and we mention the following case as a warning to others:

Case III.—Miss Bertha X., who was in the third stage of tuberculosis and was suffering from pulmonary dyspnea was sent from Bedford to New York for curettement of ulcers in the larynx. This was easily done under local anesthesia, but the patient refused to stay in the hospital over night. The following night an edema of the larynx developed and she suffered a great deal. She completely recovered, however, from the effects of the operation. This case should admonish to caution, since in every case of laryngeal tuberculosis a dangerous edema may set in after any operation. Patients with advanced tuberculosis naturally must be treated with greater care, and they should remain in the hospital at least over night in order to be safeguarded against possible suffocation.

Case IV.—Another case operated upon by me was that of Sam F., twenty-five years of age, who had had diphtheria four years previously, when he was tracheotomized. He felt perfectly well up to three months ago, when a slight dyspnea set in, which still exists. On laryngeal examination a grayish-looking web-like structure was seen below the glottis, which was surely the result of tracheotomy. We tried to remove this under local anesthesia by the suspension method, but did not succeed, as the patient was extremely timid. We succeeded, however, in examining the trachea, and to our great surprise saw a mass of granulation tissue on the anterior wall instead of the web seen before by ordinary laryngoscopy. The picture was so striking that we showed it to quite a number of physicians present. A few days later he was placed under general anesthesia. Before we started the introduction of the spatula or any other instrument, the patient became very blue in the face and apparently was becoming asphyxiated. No time was lost; tracheotomy was done in a hurry, but the patient did not breathe. Fortunately, we had Elsberg's insufflation apparatus on hand and inserted a rubber tube into the bronchus, connected this to the tank of the Elsberg apparatus and pumped pure air into the bronchi. Soon the patient was out of danger.

I mention this case for two reasons: Firstly, because the picture seen by the ordinary method was so entirely different from that seen under suspension, and, secondly, to express my opinion that it was only by resort to the Meltzer-Auer-Elsberg method that the patient's life was saved.

Case V.—Still another case was that of Robert F., who had a papilloma of the right vocal cord about in its center, which was easily removed by means of McCoy's forceps.

The last cases to be mentioned are six tonsillectomies. While at first it seemed difficult to reach the tonsils, a little experience showed us that in most cases where the mouth of the patient can be widely opened this difficulty can be easily overcome. Furthermore, we had to learn to work mainly from the right side of the patient, because on the other there is the bridge connecting the tongue spatula with the tooth plate. Besides, we again encountered difficulty with the tongue, but finally the idea occurred to me to introduce and attach the spatula sideways, and in that way the tongue was pushed to one side. When it is once attached in such manner it is not in our way and we can reach the tonsil easily. The benefit derived from this mode of operating on the tonsils is due to the fact that the blood flows down into the nasopharynx and we do not need any suction apparatus to get it out of our way, but can finish our work quickly, if the anesthesia is complete. But it must be left for future experience to decide this and other questions in connection with operations performed according to the new method. However, we are already able to state that it constitutes a valuable contribution to our laryngological technique, and there is no doubt that it will bear very good fruit in the near future.

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## THE EFFECTS OF THE BEERLESS EXCHANGE ON THE MORALS AND HEALTH OF OUR SOLDIERS.

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The daily press has recently attempted to enlighten the public on the moral and physical condition of the enlisted men of the army as a result of the beerless canteen or post exchange. It will be remembered that the sale of beer was interdicted in army posts by an act of Congress in 1901, and that an annual effort has been made for its restoration. No fair-minded person objects to an honest and unprejudiced discussion of a question which has become a national issue, but every patriotic citizen resents a controversy whose only line of argument consists in shameful denunciations of our soldiers in order to influence public opinion for legislative purposes. As a champion of the enlisted men of the army, with whom I have spent my life, I submit this article with the hope that it may in a measure right the great wrong already done to our country's brave defenders.

No one can properly discuss the canteen question without invading the wide field of temperance, which has become the most important sociological problem of the age. Apart from its bearing on the health and preservation of the human race, temperance has become a cold-blooded business proposition which is assuming the greatest importance in the commercial world. Professional and business men everywhere are beginning to learn that even

the mildest manifestations of the drink habit unfit men for the ordinary pursuits of life.

The spirit of the commercial world has changed entirely during the past generation, and employees are looked upon as business assets. Sympathy and sentimentality for the drinking element is fast dying out, and no one in the near future can expect consideration who handicaps himself mentally and physically through the deadening influence of alcohol. Hundreds of thousands of the most intelligent and alert young professional and business men of the country are voluntarily cutting out drinking because they have found that total abstinence is the only certain road to health and success in life.

Have not railroad companies prohibited alcoholic beverages, even beer among their employees? Is this not so with many street-car systems, factories, banks, schools, and colleges? A law has recently been passed at Albany making intemperance among chauffeurs a penal offence, in order to prevent the reckless loss of life and limb which results from drink. Many steamship companies require total abstinence among their navigating officers, and can anyone deny that the lack of this obligation among the officers has not been the indirect cause of more than one terrible disaster?

The statutes of the State of New York forbid the introduction or sale of any alcoholic drink in a State armory, which expresses the sentiments of the people in this great commonwealth in regard to the use of intoxicants among the state militia. It is also a well-known fact that in a community threatened with riot the first action of the authorities is to close the saloons. In order to promote good law and order in every self-respecting and God-fearing community saloons are closed on Sunday, election days and many of the holidays.

It has been stated that the War Department is contemplating issuing an order making total abstinence compulsory among army aviators. Flying, above all things, requires a cool head, clear eye and steady hand, conditions which are absolutely impossible with those who drink even moderately. Until the day of judgment no one will ever learn how many of the hundreds of aviators who lost their lives during the past few years have alcohol to blame for the tragedy.

The army and navy officer is an expert of the highest class and holds a position of the greatest responsibility, whether he is charged with the manufacture of battleships, arms and equipment, the purchase of supplies, caring for the health of the men, or commanding troops and dreadnoughts. Besides, he becomes a specialist and is entrusted with work or duty upon which the safety of the country frequently depends. It is my candid opinion that any officer of the army or navy who renders himself incompetent or stupid through drink during actual warfare might just as well enter into treasonable relations with the enemy and sell his country as did Benedict Arnold.

The commercial warfare which is engaging the great nations of the world and the spirit of unrest, as expressed by the recent wars in Europe and the Orient, makes it obligatory upon the United States to employ every known measure to promote the efficiency of our army and navy. The sentimental side of military life has been fading away ever since the days of knight errantry and the substitution of khaki and olive drab for gold lace and feathers. The art of warfare has become a keen business proposition which requires science, skill, alertness and preparation of the highest order.

The army and navy is a great national corporation, which concerns our country so vitally that the American people are not willing to have moral questions, affecting the efficiency of our soldiers and sailors settled by those who favor drinking and who believe handy beer a universal panacea against intemperance and diseases of vice. Would it be considered a sane business proposition for any corporation to employ ordinary workmen in competition with similar companies which employ skilled labor?

Those of us who have studied the alcoholic question in military circles will remember that the policy of the War Department has undergone a number of changes with regard to the army saloon since the great Civil War of 1861-1865. From that period until 1881 no restraint was placed on the sale of alcoholic drinks in army garrisons and drunkenness was correspondingly common. A feeble wave of temperance passed over the country during the administration of President Hayes, which was stimulated by the lofty stand of his courageous wife, and in 1861 prohibition was enforced throughout the army.

A slight reaction occurred in the policy of the War Department in 1885, whereby the sale of light wines and beer was permitted, first in company canteens, and finally in the post exchange, where it remained until abolished by an act of Congress in 1901. Those of us who attended the funeral of the army saloon hoped that its interment was final, but, unfortunately, like Banquo's ghost, its disturbing spirit makes its perennial bow to the American Congress and won't be downed.

In studying the canteen problem, I find the army divided into three distinct parties: the Progressives, the Reactionaries, and the Indifferents. The Progressive Party may safely be estimated at ten per cent. of the officers and enlisted men; the Reactionaries at five per cent., and the Indifferents at eighty-five per cent. The Progressives believe that the best interests of the soldier would be subserved through the beerless exchange. The Reactionaries feel that beer and light wines are essential to the soldier's health and moral welfare, while the large army of Indifferents have never formulated any views on the subject and are not interested in the matter.

Among the advocates of the canteen are men and women who do not believe moderate drinking is either harmful or opposed to the true spirit of temperance. The scientific study of moderate drinking on the human system has taught us that there can be no compromise in the great battle now being waged against alcohol. The increasing use of cocktails, high-balls, and ciragettes among the young men and women of the country has become a great curse to society, and, if continued, will result in the racial degeneracy of America as it has in France. Besides the vicious tendencies of the age resulting from tippling, the lack of religious training at home and school, and the voluptuous step of immoral dances are becoming a menace to the youth of our country.

In their complaints against the law of 1901, abolishing the canteen, its advocates charge the army with increasing intemperance and diseases of vice. Specifically, they state that the anti-canteen law has, (1) increased sickness in the army; (2) increased

its non-efficiency rate; (3) increased drunkenness; (4) increased desertions; (5) increased diseases of vice; and (6) resulted in the establishment of saloons and brothels in the vicinity of the posts.

In reply to the charges, it is only necessary to quote from the article by the Surgeon-General with reference to the health of the army, which was published in the *Continent,* January 18, 1912. He states that "The statistics do not show that the absence of beer from the canteen has increased the admissions to sick report or the ratio of constantly sick." The last report from the Surgeon General's Office, 1912, informs us that the health rate of the army was never better. It states that "The ratio (admissions for sickness) for 1911 was 769.44 per 1,000 of mean strength; for the previous year 766.06, * * * "This is the lowest admission rate for diseases for any year in the history of the army except that for the year 1910." The lowest admission rate during the canteen period was 10.90 per 1,000, while the average rate during the canteen years, 1888-1898, was 12.46 per 1,000. The parentheses are mine and are used for explanatory purposes. It seems singular that any army officer would make statements contrary to the above figures from the report of the Surgeon General of the Army, as has been reported recently in the newspapers.

The constant non-efficiency rate of the army has also been greatly lowered during the past few years, which shows an exceedingly healthful condition of the army under the beerless canteen. The rate from 1888 to 1898, during the flourishing days of the canteen, ranged as high as 42 per 1,000. The report for 1912 shows the rate 33 per 1,000.

Alcoholism, which caused an admission rate as high as 46 per thousand during the canteen period, has been reduced under a beerless canteen in 1912 to 20 admissions per thousand, a reduction of more than 50 per cent., which speaks well for army prohibition.

The rate of desertions in the army has also gradually declined since the abolishment of the canteen until it reached in 1911 the lowest rate on record in 90 years. The above statements are based on official reports from the War Department, and I challenge anyone truthfully to refute them.

These four great triumphs alone would fully vindicate the wisdom of Congress in repealing the canteen in 1901, if nothing more, but let us analyze the fifth and sixth indictments against the beerless exchange. It has been frequently stated that the sanitary conquest of preventable diseases which resulted from our war with Spain has fully justified the financial outlay in waging it, and the sacrifice of our men. The splendid triumphs of the Yellow Fever Board in Cuba, which has banished that dread disease from the Western hemisphere, the emancipation of Porto Rico from the devitalizing influences of hookworm, the successful malarial crusade in Panama, and the regeneration of Manila and the Philippines through scientific sanitation, makes us realize what preventive medicine has done for the world.

Until 1901 little or no attention was paid to diseases of vice in the army and fully two-thirds of the men afflicted with them received little or no official attention. The military records during the canteen period, and before that time, regarding diseases of this character, were very incomplete, and it is the belief of medical officers who served during that period that scarcely one-third were recorded. Since the Spanish War, great attention has been awakened to diseases of vice, and inspections instituted which have resulted in their apparent increase. I believe that diseases of this class are less in the army today than ever in the history of the canteen period.

The recorded rate of these diseases which averaged from 75 to 85 admissions per 1,000 during the canteen period would be more correct if multiplied by three. This would give us an admission rate during that period of from 225 to 255 per 1,000, against 163, the present rate. During the canteen period, in 1890, the rate at Columbus Barracks, Ohio, was 462 per 1,000, and at many of the other posts during that year ran as high as 250 per 1,000.

In discussing the prevalence of venereal diseases in the Army, advocates of the canteen fail to mention the fact that a large proportion of such diseases are brought into the army as recruits. Major Deane C. Howard, Medical Corps, surgeon at Jefferson Barracks, Missouri, states that 50 per cent. of the venereal cases treated at that depot were from infections contracted prior to enlistment. Jefferson Barracks is one of the principal recruiting depots of the army, through which many thousands of recruits pass annually.

Besides, hundreds of cases of syphilis, which are carried on the sick reports today were contracted prior to enlistment or are of long standing, and were brought to light only through the Wassermann test on the blood. The Wassermann test, a recent medical discovery, was not known during the canteen period, and, in connection with the salvarsan treatment, has caused thousands of unfortunate young men, both in the army and civil life, who considered their conditions hopeless and never would have sought relief a few years ago, to seek medical examination and aid.

Under modern sanitation and prophylaxis, diseases of vice are rapidly disappearing and at many of our posts they have been reduced to a negligible quantity. The army is composed of young and virile men, who by nature are endowed with the passions of youth, which inspire many of them to seek society which cannot be found within the confines of an army post. That they become drunk and contract diseases of vice under our present regulations is not substantiated by the experience of our post medical officers.

Only recently the surgeon at Governors Island informed me that but two soldiers had contracted diseases of this character, among the command of nearly 400, since June last, who had taken prophylactic treatment, and attributed this remarkable condition to the fact that the men returned to their posts for disinfection. How many of them would have returned to the hospital had they been under the influence of liquor as the advocates of the army canteen contend?

During the month of November, 1912, in the Eastern Division, the constant rate of non-efficiency from diseases of vice amounts to three and a third men in each thousand, and the rate for December was even less,—two and one-fourth. This does not look as if "The American army is in a very deplorable condition physically," as published in the dailies, nor does it appear that two or three men in a thousand affected with vice diseases is as serious as a certain medical officer of the army has publicly reported. I do not believe that there is an

army in the world that can show a lower rate of non-efficiency from diseases of vice or alcoholism than the magnificent army composing the Eastern Division, under the command of Major General Thomas H. Barry, with headquarters at Governors Island.

The establishment of saloons in the vicinity of army posts has existed from time immemorial. It is true that these saloons have been of a more primitive order than the so-called first class bars in our great cities. The indictment that generally they are low dives and brothels is not true, because many of them are owned and run by discharged soldiers whose wives and children live in the same buildings.

During my service at Fort San Houston, Texas, 1893 to 1897, every street which surrounded the post contained saloons. This was also the case at Fort Hamilton, Brooklyn; Fort Wingate, New Mexico, and practically at all of the posts near which available saloon cites could be secured. In spite of the well equipped canteen at Fort Wingate, New Mexico, low drinking dives on the border of the reservation six miles away enticed the men at pay day, where they were not only drugged and robbed, but occasionally murdered, and this condition was well known to the War Department at the time.

The sale of beer in army posts has little or nothing to do with the suppression of outside saloons. On the other hand, the canteen becomes the kindergarten for the young recruit and the training school for the alcoholic habit. A few drinks in the canteen, a few more in the nearby saloon and the young soldier migrates to the red light district.

I have served nearly forty years in the army as a medical officer, twenty-three of which were spent at army posts in the direct care of the men. During the past fourteen years I have served as Chief Surgeon of army corps, divisions, and departments. As the senior medical officer in length of service in the army, I yield to no one in superior knowledge of the sociological condition of the enlisted men and certainly not to magazine writers, newspaper correspondents, and others who feed an eager public on misleading and degrading stories of the American soldier. Our army contains thousands of self-respecting young men, who resent the condemnation that they are unjustly receiving through the press.

The question arises whether drinking can be indulged in to the extent of securing the pleasurable sensations without harm. If so, what is the safety limit? Everyone differs in degree of immunity against infection and disease and so it is with alcohol, where we find some men killed by doses apparently harmless to others. The daily influence of beer and light wines has its permanent effect on the young soldier's health and physical condition, just the same as the persistent individual drop of water, which erodes and wears away the granite rock.

Let us examine into the psychological and pathological effects of beer and see whether it is a harmless beverage. From careful post-mortem examinations of hundreds of its victims it has been found that the constant use of beer produces the same character of mental and physical degeneracy, which follows other forms of alcoholic beverages. In beer drinking countries and especially among brewery employees, we find the flabby, fatty, and enlarged heart, which, in Europe, is known as the beer drinker's heart.

Dr. Bergen, a prominent insurance examiner, says that beer kills quicker than any other form of alcoholic beverage, basing his statements on insurance examinations. Through its degenerating effects on the blood it predisposes its habitués to the same risks from pneumonia, pleurisy, erysipelas, and other infectious diseases, as whiskey and brandy. He also claims that beer inebriates are less curable than those who develop delirium tremens from whiskey, and that while the beer drinker is often the picture of health, he is more subject to diseases and criminal tendencies than the whiskey drinker.

Dr. Clement Dukes, physician to Rugby, states that "Beer is a drug which deadens will power and excites the animal instincts of the young. Its relations, therefore, to immorality are most momentous." I have frequently interrogated our young soldiers on this point and have invariably been told that beer is more productive of erotic desires than whiskey or other alcoholic drinks.

The steady beer drinker is never in a normal condition, and, besides, he is more or less unfit for his higher duties. This is expressed in the rifleman by an unsteady hand and a poor score. The best results at target practice are secured from men who do not drink, especially during target season nor a considerable period before it begins, in order to steady the nerves. A peculiarity of the drinking man is that he deceives himself in believing that he is able to do as good work as the abstainer.

During my five years in the Philippines, I found the effects of malt drink on men worse than whiskey. In many cases it proved such an irritant to digestion, and especially to the liver, that many of them had to give it up. It was for this reason that both the officers and men preferred Scotch highballs, which proved less irritating and more acceptable to the stomach. The health of more men was injured during the Philippine insurrection by beer than through the infected drinking water which was the cause of amebic dysentery.

I have watched the effects of alcohol on the mental and physical condition of our officers and men for more than a generation and have never seen one that it has benefited. On the other hand, I have observed its injurious influences on thousands of our soldiers, and have known hundreds of officers who were cut down in the prime of life, dismissed or rendered useless and retired on account of drinking. The army of today is abstemious as compared with the drinking army of the canteen days, and anyone who states the contrary is ignorant of its previous history.

The use of any mild form of alcoholic drink leads to the habits of strong drink. Besides, the social environment of the beer club would eventually force the young abstaining recruit to drink. Very few of these men would be able to withstand the influences of the drinking non-commissioned officers and older soldiers. Those who drink use the argument that drinking at the canteen adds to the dividends of the club. With a bar, the post exchange becomes a loafing and drinking place and many of the young soldiers would be forced to drink to escape the taunts and jeers of the drinking element.

In considering the final results, there is little to choose from between beer drinking Germany, wine drinking France, ale drinking England, whiskey drinking Scotland and Ireland, or mixed drinking America. It is the poisonous agent, alcohol, which is concealed in varying degrees, and not the other

constituents of the beverage. The underlying arguments of the saloon men is that by governmental sanction of the canteen the government places its stamp of approval upon drinking, which would prove of inestimable value to the liquor interests and correspondingly damaging to the temperance movement.

In view of our knowledge of the effects of drinking, has the government the right to prohibit the use of alcohol among its public servants, especially among the pensionable class? Admitting that it is the private affair of the ordinary individual who elects to drink, does it not become a governmental affair when a pensionable official not only injures his health thereby, but reduces his efficiency and usefulness? We are living in a progressive and sane age and there is no place in this busy world for the tippler or barroom habitué.

No discussion of the army canteen would be complete without reference to the Post Exchange. Following the abolishment of the army beer saloon in 1901, Congress made liberal provisions for the creation of elaborate exchange halls at many posts in the army, in addition to the splendid Y. M. C. A. buildings erected and equipped by Miss Helen M. Gould, who is known throughout the army and navy as the soldier's and sailor's best friend.

Many of the post exchange buildings have cost as much as $40,000 and are splendidly arranged for the entertainment and comfort of the men. They are provided with well equipped gymnasiums, bowling alleys, billiard and pool rooms, amusement rooms for cards and other games, libraries, kitchens and cafés, besides the sale room in which the soldier can secure all those little articles necessary for his personal use not provided by the government.

There is no good reason why the post exchange should not become the most successful soldier's club in the world. Congress has been generous in providing the necessary funds for the buildings and equipment and the War Department has issued the necessary orders for its regulation and management.

The post exchange, without the beer feature, is a failure today because the government does not get the proper cooperation from its management. Too much attention is paid to creating dividend for the company funds and too little to the pleasure and amusement of the men. In discussing the question of the canteen with an old retired officer several months ago, he told me that his company had received a $400 dividend in three months at a two-company post, after its establishment, and for this reason he regarded it as a good thing.

Such dividends might almost be regarded as hold-up or blood money, because a large portion of them accrued from the sale of canteen checks, which were guaranteed by company commanders and taken from the men at the monthly pay table. These orders were issued after the men had spent all of their cash and were turned in for beer which would not have been drunk except for the checks. Should the canteen ever be restored, may the Lord deliver the men from the pernicious advance or check system!

The enlisted men of to-day are young, the majority of whom average from twenty to twenty-five years. Like other young men in the world of corresponding age, they are filled with the desires and passions of young manhood, which could not be suppressed were the War Department to establish a line of free beer saloons for the use of the men from Maine to Manila.

If the War Department really desires to improve the condition of the soldier, let it place a premium on temperance through official recognition of the abstaining class. Men are paid for superiority in marksmanship, and why not pay for total abstinence, which is the greatest factor of them all in promoting the efficiency of the army and raising its standards?

Those who cherish the hope that alcoholism and diseases of vice will vanish some day from the army, should never expect this ideal condition among beer-drinking soldiers.

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## PARALYSIS OF THE RECURRENT NERVE DUE TO CIRCULATORY LESIONS;*

### WITH REMARKS ON RECENT THERAPEUTIC MEASURES.

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Although I am not in a position to offer any new observations of my own I thought a short résumé of the subject may be of interest to you, as the data are widely scattered in the literature, and as a few therapeutic measures have of late been recommended, which seem to hold out a prospect of relieving an otherwise unamenable condition.

To facilitate the disposal of the subject, I have divided the paper into five parts: (1) Brief physiological remarks; (2) Recurrent paralysis from heart lesions in general; (3) Paralysis in connection with mitral stenosis; (4) Aneurysm; (5) Therapeutics. In no instance has it been my aim to give a complete literature, and I shall only quote publications referred to in the text.

I. *Physiological Remarks.*—Although abductor paralysis does not come within the scope of this paper, it is necessary to allude to it briefly in order to appreciate certain features of recurrent paralysis. You are all familiar with the proclivity of the abductor muscles to paralysis, and the reason for it is explained by Grabower,[1] who by painstaking observations counted the number of terminal nerve fibers of the laryngeal muscles. He found that of all the laryngeal muscles the posticus has the smallest number of nerve terminals, absolutely as well as relatively in regard to its size; a view he still adheres to according to a letter written to the speaker in March of this year, while others, *e.g.* Semon, believes more in the great vulnerability and the biological differences in the muscular structure of the abductors.

We also know that a recurrent paralysis can change to an abductor paralysis, because the stronger adductor muscles recuperate quicker than the abductors, if the underlying lesion shows a tendency to improvement. Louis Elsberg[2] reported already—1882—the case of a young boy who, after a violent exertion, became aphonic on account of the cadaveric position of the cords which, during convalescence, moved gradually to the median line, followed by dyspnoea of such a degree as to necessitate tracheotomy. In Semon's[3] patient a recurrent paralysis with almost complete loss of voice terminated in an abductor paralysis, enabling the patient to resume his vocation as a professional singer. The speaker[4] treated a patient with an old syphilis, a left recurrent paralysis, an aneurysm

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of the aorta, and a stenosis of the left bronchus from infiltrated mediastinal glands. The latter yielded to antiluetic treatment, and the pressure on the abductor fibers being relieved, the cord assumed the position in the median line, with return of the singing voice. A most remarkable observation is related by Landgraf,[5] whose patient acquired in the course of articular rheumatism a left sided pleuritis and a pericarditis, causing paralysis of the left abductor, which after two weeks changed to recurrent paralysis. The latter began to improve with absorption of the pericardial exudate, and after several months the motion of the left cord was almost fully reestablished.

Finally, the observation that the glottis is wider in the dead than in bilateral recurrent paralysis is of greatest importance to explain some phenomena, about which decided differences existed and probably still exist. The greater width of the glottis in the dead is due to the inaction of all the laryngeal muscles, while in recurrent paralysis the external tensor, the cricothyroid muscle, which is innervated by the superior laryngeal nerve, still retains its function, which results in an approximation of the cords.

The position of the vocal cords near the median line after an experimental surgical severance of the nerve made Grossmann[6] contest, that the glottis stood in the cadaveric position in such cases and that therefore the assertion that posticus paralysis alone caused the position of the cords in the median line was erroneous. Experiments made by Grabower[7] on dogs showed soon the fallacy of Grossmann's contention. He found it to be true that after severance of the recurrent a position of the cords near the median line resulted within ten to thirty minutes, but that the cords receded from this position after one to four days and assumed the cadaveric position, in which they remained. This change of the position of the cords is due to the inability of the thyrocricoid muscle to retain its function of extension and thereby adduction of the cords any length of time, if unaided in its action by the adductors, when they are paralyzed.

II. *Recurrent Paralysis from Heart Lesions in General.*—Gantz[8] gives the history of a man whose heart was enlarged in every direction and who had stenosis and insufficiency of the mitral valve and paralysis of the left recurrent. The diagnosis of the paralysis being caused by the mitral stenosis was not verified by the autopsy, which showed an enormous hypertrophy of the peribronchial and peritracheal glands exerting direct pressure upon the nerve. Low[9] presented to the laryngological section of the Royal Society—1906—a young woman who had a history of severe rheumatic fever with subsequent pericarditis. Her left recurrent paralysis was in his opinion due to adhesions fixing and dragging on the nerve. Several cases of recurrent paralysis in consequence of pericarditis are found in the literature. Pericardial effusion was also the cause of bilateral recurrent paralysis, which disappeared with absorption of the exudate. This observation by Bauemler[10] is, as far as I know, the only instance of a cure of bilateral recurrent paralysis due to organic disease.

Syphilis of the aorta—mesoaortitis—combined with infiltrated bronchial glands is considered by Fein[11] to have been the cause of a left recurrent paralysis, as all the symptoms disappeared after specific treatment.

III. *Recurrent Paralysis and Mitral Stenosis.*—Ortner[12] published—1897—the first observation of left recurrent paralysis due to mitral stenosis. He attributed the paralysis to compression of the nerve between the aorta and the distended auricle, which was confirmed by the autopsy. But by subsequent observations it was found that the pathological lesions producing recurrent paralysis in mitral stenosis showed a great variety of local conditions, and were in many instances of a different character than in Ortner's case. Four years later Kraus[13] related the history of a patient with mitral stenosis, tricuspid insufficiency, and hypertrophy of the right ventricle in whom the Roentgen rays showed enlargement and displacement of the heart. The autopsy proved that, in consequence of the latter, the relationship of the aorta and pulmonalis had changed, and that traction was exerted on the nerve by Botalli's ligament.

I shall not weary you with histories of patients who presented different local conditions in mitral stenosis found at the autopsy. Fetterolf and Morris[14] have briefly analyzed in a recent paper the results of autopsies of the eleven cases found in the literature. They stated that recurrent paralysis was attributed to direct compression on the part of the auricle or its appendix in seven cases, to cardiac displacement in one, to the effect of persistently patulous ductus arteriosus in one, and to indirect compression acting on the pulmonary artery in two cases. In addition, 26 clinical cases without autopsy are reported in the literature. An excellent résumé of the subject, wth appended literature, is also published by Garel.[15]

IV. *Recurrence Paralysis Due to Aneurysm.*—The deleterious influence of aneurysm of the aorta upon the recurrent nerve was already recognized in the pre-laryngoscopic time. Legroux,[16] in an address to the Academy of Medicine of Paris—1853—spoke of the weakness of the voice, partial aphonia, hoarseness, which he attributed to the compression of the recurrent by an aneurysm. He referred to a case reported by Banks[17]—1851—in which the autopsy showed an enormous dilatation of the aorta pressing against the œsophagus and the upper part of the left lung. The pneumogastric nerve was flattened by pressure and all the muscles were completely atrophied on the left side of the larynx.

The first laryngoscopic observation was made by Traube[18] in a patient who was hoarse and coughed since three months. The left cord did not move at phonation, and the diagnosis was aneurysm of the aorta and paralysis of the left recurrent. One year later he reported a second case of the same nature.

When we find a left recurrent paralysis and an aneurysm of the arch of the aorta, there is very little doubt as to its causation. But we all are well aware how difficult it is sometimes to determine the true lesion, in spite of a most careful examination. It is not the place here to mention the different affections, but I may be permitted to refer to one condition, viz., rheumatism, of which the first case was reported by Kidd.[19] A bilateral recurrent paralysis developed in the course of an acute laryngitis, with subsequent complete recovery. Another case of the same nature is described by Semon,[20] in whose patient the bilateral recurrent paralysis changed gradually to bilateral abductor paralysis, necessitating tracheotomy.

Although a number of recurrent paralysis of rheumatic character are recorded, we have to be very careful to attribute the paralysis to rheu-

matism, as by a longer observation of the patient and by the use of modern therapeutic means we may be able to find a true pathological lesion. Levinstein[21] treated for some time a patient with right recurrent paralysis, which he had good reason to believe of rheumatic origin. Finally he used Roentgen rays and found an aneurysm of the right subclavia, with compression of the right recurrent.

Finder[22] relates the history of a patient with recurrent paralysis, aortic aneurysm and locomotor ataxia. He found in one clinic the report of 24 autopsies of cases of locomotor ataxia, nine of which, viz., over one-third, had also an aortic aneurysm. He therefore advises strongly to examine tabetic patients with recurrent paralysis to make sure that no aneurysm is present before we attribute the paralysis to locomotor ataxia.

Bilateral recurrent paralysis, due to aortic aneurysm, is a rare occurrence, and is caused by a very large aneurysm, or such, involving the trunk of the anonyma and the subclavia. Bernhard[23] gave a short analysis of all the 19 cases found in the literature up to 1903. Although pressure on one recurrent nerve can affect the laryngeal muscles on the one side only, we must not lose sight of the fact that according to Johnson,[24] pressure on one pneumogastric can through the afferent fibers of the latter transfer an irritation to the accessory fibres and produce a paralysis of the other side. Another explanation is that continuous irritation of one pneumogastric creates structural changes in its centers and thereby affection of both accessory nerves.

V. *Therapy.*—As stated in my introductory remarks, I shall confine myself to recent therapeutic measures, which their authors have found to give relief in recurrent paralysis.

Horsley[25] saw a patient—1909—whose left recurrent was injured by a bullet, and who three months later showed complete paralysis. By an incision along the sternocleidomastoid he excised part of the diseased ends of the nerve and brought them together with chromic catgut, drawing muscular tissue over the suture. Improvement began after two months, and after nine months the nerve had fully recovered.

Navratil[26] experimented on four dogs and made an anastomosis of the recurrent nerve with the descending branch of the hypoglossus. He guarded the sutured nerve ends according to the method of Foramitti,[27] by covering them with a tube made from fresh animal vessels. The autopsy of a dog which died after some time showed already a union of the nerve ends, and in some places presence of neurofibrillar formations.

Grabower[28] published a highly interesting case, which confirmed his statement as to the function of the cricothyroid muscle, mentioned previously. A woman was operated upon three times for goiter, which had exerted pressure upon both recurrent nerves. Without going into the details of the case, the adductors of both sides recuperated, drawing the cords toward the median line with resulting dyspnea, necessitating tracheotomy. As Grabower believed that the action of the adductors was greatly influenced and supported by the intact cricothyroid muscle, he advised neurectomy of the superior laryngeal nerve of one side. This assumption proved to be correct; the left cord began to recede slowly from the median line, and six weeks later the tracheal cannula could be removed.

The same gratifying result from neurectomy of the superior laryngeal nerve in a similar case is reported by Mertens,[29] in whose case the tracheal cannula could also be dispensed with.

The latest and last procedure to lessen the distressing features of unilateral recurrent paralysis was communicated to the Society of German Laryngologists by Bruenings,[30] who one year later reported to the same society the condition of the patients he had treated. His endeavor was to relieve the unpleasant symptoms of respiration, viz., the unsatisfactory expectoration, the inability to use pressure, as well as those of phonation, weakness of voice, waste of air. In order to counteract the atrophy and weakness of the paralyzed cord and to restore its previous phonatory position, he made injections of paraffin into the cord. As a rule he succeeded with two applications, using in the first one three injections, viz., anteriorly, posteriorly and in the middle; and in the second one, after 5 to 8 days, filling out the interstices. The laryngoscope showed after a short time that the cord presented a straight line and was in a phonatory position. Two of these patients regained their voice, the third one, with an old bronchitis, felt great relief by being able to expectorate.

One year later he related five more cases with similar results. He had in no instance ill sequelae, and his oldest patient spoke—1912—with an almost normal voice.

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616 Madison Avenue.

# THE CARE OF SPEECH DEFECTIVES.

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Speech defects include a number of different troubles, among which the chief ones are the following:

(*a*) Stuttering. This is a disease whose symptoms include cramps and contractions of all the muscles involved in speech, but whose essential pathological fact is a special state of mind.

(*b*) Pseudo-stuttering. This is a symptom that occurs in many diseases, including tic-speech, hysteria, cerebral spasticity, athetotic conditions, aphasia, some forms of amyotrophic lateral sclerosis, etc.

(*c*) Negligent Lisping. This includes a large number of defects due to defective perception and execution of sounds. The trouble appears not only in normal children, but also in cases of backward development, defective mentality, etc.

(*d*) Organic Lisping. This includes all the defects of speech that arise from defects of the tongue, teeth, palate, velum, ears, etc.

(*e*) Neurotic Lisping. This is a peculiar but fairly frequent disease that resembles ordinary lisping in its external symptoms but is closely allied to stuttering in its real nature.

(*f*) Cluttering. This is a disease also resembling lisping in its symptoms, but derived purely from nervousness.

(*g*) Athetotic Speech and Spastic Speech. These are two forms that occur not very rarely among children.

(*h*) Several other forms of speech defect are much less frequent, but they must not be confounded with any of the preceding.

Although in many cases it is easy to detect a stutterer, in many other cases serious mistakes have been made; not only has a stutterer been classed as something different but those who are not stutterers have been put into this group. Other forms of speech defects are often very difficult to diagnose correctly. No one can do this with the requisite degree of certainty unless he has been properly trained.

The treatment of stuttering is a most difficult affair, requiring a high degree of skill. In my experience in this specialty, I have met many cases that have been cured with the greatest ease by simple methods, but also very many who have taxed my skill and patience and endurance to the utmost. Some stutterers will get well without treatment, some can be cured by Christian Science, but the majority can never be cured by any simple or routine procedure or by any one except a skillful expert.

The treatment of stuttering by routine methods has always led to the ultimate failure of anyone who has attempted it. The innumerable physicians and stutter-curers who have tried to treat patients by such methods have all eliminated themselves in the course of time.

It would be a movement not only detrimental to the public interests but also fatal to the reputation of this work to permit any teachers to engage in it who have not had the proper training under an expert.

It is necessary to insist upon two things: first, that all teachers of classes for speech defectives shall be trained under a supervision sufficient to keep them from making many mistakes; and second, that the classes for speech defectives shall be inspected at fairly frequent intervals by medical experts.

We must consider several arguments that have been advanced in discussing this matter.

*First.* Speech defects include only two groups, namely, stuttering (often called stammering), and defective enunciation.

My experience shows that only about seventy per cent. of speech defectives belong to these two groups.

*Second.* Anybody can tell whether a child is a stutterer or not.

My experience shows that even with many years of specialization in this subject, I still occasionally make mistakes and classify as a stutterer one who has an utterly different trouble. On the other hand, many a stutterer is able to so conceal his trouble that it is not apparent to his teacher or else it is assumed that he is a mental defective.

*Third.* It is easy to give a correct diagnosis in regard to defective enunciation.

The contrary is true. Defects in enunciation may arise from the most varied causes. The most frequent one is negligent attention in an otherwise normal child. Almost as frequent is a condition of mental defectiveness. Very frequently there is some defect of the speech organs. There are numerous other cases which are directly traceable to nervous and mental diseases. An absolutely certain diagnosis is often an affair of very great difficulty for the expert.

*Fourth.* The treatment of speech defects consists in some simple exercises.

Such a supposition is fatal to the success of the work. Each form of defective enunciation requires a different method of treatment. As stated above, stuttering shows itself in so many different forms, and requires so many different methods of treatment that a command of them all taxes even the expert.

*Fifth.* Examination and diagnosis by a medical expert are unnecessary.

Such an error hardly requires comment. Proper examination of the speech organs can not be made except by a physician thoroughly familiar with the anatomy of the nose, throat and larynx; a complete understanding of stuttering cannot be obtained except by a neurologist. The case is analogous to that of optometry. Glasses may be correctly fitted to certain eyes by an amateur but only the physician is capable of a reliable diagnosis that will protect the patient from injury.

The medical profession should firmly insist that every child selected for treatment in a speech class shall be sent for diagnosis to a competent physician. With convenient speech clinics this will involve no expense to the school or the parent. The proper training of the special teachers for the speech classes is a matter for the consideration of the Board of Education.

The medical profession should provide proper clinics where the speech defectives can be examined. There are at present only three or four speech clinics in this entire country. There are only two places where undergraduate instruction is given on this subject. In spite of a steady demand for it there is no place at all where post-graduate instruction is provided.

236 West Seventy-fourth Street.

# LARGE DOSES OF ANTITOXIN GIVEN EARLY—A MEANS OF PREVENTING LARYNGEAL STENOSIS.

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Diphtheria is by no means extinct. It will always recur in congested districts where infection can be spread. It is spread by convalescent children or by patients exposed to the disease, whose throat harbors live diphtheria bacilli—diphtheria carriers. It is essentially a child's disease, although adults contract it frequently. If the disease continues unrecognized the toxin absorbed causes an overwhelming state of poisoning, which in turn affects the heart, lungs or kidneys. Such neglected cases must be considered septic types, in which the local process in the throat is of secondary importance, and unless the general toxemia is taken into account when treatment is instituted such cases end fatally. The following cases are interesting because they occurred in this city, all of them seen in consultation, and all terminated favorably.

Case I.—Baby Herman, 21 months old, was seen by me in consultation with Dr. M. Altman on December 23, 1911. He was suffering with patches on the tonsil and pharynx, and a slight croupy cough. The infant received 5,000 units of antitoxin in the morning and six hours later an additional injection of 3,000 units. The temperature was 103.4° F. In addition to the antitoxin I ordered a saline laxative to be given hourly until liquid stools were produced. Antitoxin (10,000 units) was injected morning and evening until the temperature came down to normal. In all 45,000 units were needed to bring the temperature down to normal. The croupous cough and mild laryngeal stenosis which were present at the first consultation gradually lessened and the child made a complete recovery. Total time from the first visit until the case was discharged cured was ten days.

Case II.—Baby Sanford, aged 16 months, was seen by me in consultation with Dr. G. Hamburger, who reported the following: The tonsils and pharynx are covered with a whitish membrane; pulse rapid; temperature 103°. There is laryngeal stenosis; infant is irritable and restless. The stenosis increased and the infant was injected with 10,000 units of antitoxin. The following morning the infant was weaker, more nervous, and restless. An injection of 20,000 units was given. Prostration and restlessness increased; there was a distinct diminution in the quantity of the urine; the pulse became weak and irregular. The examination of the chest showed many râles, evidences of diffuse capillary bronchitis. When I first saw this case the membrane had begun to exfoliate. The stenosis improved rapidly and mucorrhea continued. Owing to the profound toxemia the heart sounds were irregular and the pulse required constant stimulation to bring it up to normal. Although the urine was scant, neither albumin nor casts were found. The child made a complete recovery in about four weeks.

Case III.—Baby E., three and one-half years old, was seen in consultation with Dr. S. Buchenholz. When first seen by the Doctor the infant had been ill with wheezing and cough about one day. Patches of diphtheria being visible, the diagnosis of diphtheritic laryngitis was made and 5,000 units of antitoxin were injected. The temperature at this time was 102° F. After the injection the temperature rose to 103°. Seven hours after the first injection another of 20,000 units was given, and the following morning and evening the dose of 5,000 units was repeated. As the stenosis increased and there was severe retraction of the chest I was requested to see the child in consultation, and decided to intubate at once. I introduced a No. 3 tube without using force, and the laryngeal stenosis was immediately relieved. The tube was worn about five days in all, and as the laryngeal stenosis subsided I waited until the temperature became normal, and then extubated, as previously stated, on the fifth day. One intubation and one extubation were performed. The only complication was hoarseness, probably due to pressure on the vocal cords. The voice gradually returned to its normal condition. No permanent complication followed, and the child was discharged in an excellent condition.

Case IV.—Male, 4 years old; first seen on October 2, 1912, in consultation with Dr. Littenberg. Had a cold for the previous two weeks. On October 2 increasing hoarseness and difficulty in respiration had been complained of all day; when seen at evening about 7 P. M. the throat was negative, but at 10 P. M. a very small white patch was present on the right tonsil. Temperature 101°, pulse 120, respiration 38. Diagnosis was made of pharyngeal and tonsillor diphtheria, and 8,000 units was injected that evening. On October 3 large patches were found on both tonsils, dyspnea was very much less; temperature 104°, pulse 140 and not very strong, respirations 28. Five thousand units more was injected, and in the evening the dyspnea ceased; temperature 103°, pulse 150 and very weak, respirations 20. Then antitoxin to the amount of 13,000 units was injected in two doses, morning and evening. Throat cleared up slowly; patches were quite small. Oct. 4 dyspnea ceased; temperature 100°; pulse 140, irregular but stronger than previous day; respiration 20; throat entirely clear; voice also quite clear. Oct. 5, respiration and temperature normal; pulse 100, irregular and intermittent. Distinct evidence of myocarditis and nephritis were present. Oct. 13, edema of the scrotum and also of the eyelids were present. Urine contained a trace of albumin, many hyaline and a few granular casts. The temperature that evening was 100°. Oct. 14, scrotal edema had disappeared, but edema of the eyelids was still present; temperature normal. On Oct. 15-18 edema of the eyelids had disappeared and the temperature was normal. The urine contained a faint trace of albumin and a few hyaline casts, but many fields had to be searched before any were found. The pulse was found to be irregular, intermittent and varying in frequency from 60 to 110. On Oct. 24 the pulse was improved, rate about 90, and patient had fully recovered.

From a study of these four cases it is evident that effectual treatment consists in giving a large injection of antitoxin at the beginning of the treatment. In a severe case 10,000 to 20,000 units should be injected at the beginning; whether or no more antitoxin should be injected must depend on the result of the first injection. In all of the cases reported the first injection seemed insufficient, and it does seem that the additional doses help to modify the toxemia. Park maintains that one injection given at the beginning, be it 5,000 or 10,000, is sufficient; he maintains that antitoxin can be found in the blood many days after such injection, and

since antitoxin can be found in the blood he insists that no more should be injected.

My rule in intubation and extubation has been: (1) Avoid force; thereby avoid injury. This rule has been my greatest aid in preventing retained tubes. (2) Do not hurry. While in a severe laryngeal stenosis a given amount of haste is necessary in selecting the proper sized tube and making preparations, but when it comes to the introduction of the tube the inflammatory process and subnormal condition must be remembered; hence, one should go slow. The nervous and frightened child must be quieted, especially when considering extubation. My rule is to give an antispasmodic for twelve hours preceding the removal of the tube. Codeine, one-eighth to one-fourth of a grain, to a child two years old or over, repeated in three hours for four doses, or ten-grain doses of sodium bromide with two grains of chloral hydrate, repeated in six hours (two doses only), will allay nervous excitability and have a quieting effect. The antispasmodic should be continued for twenty-four hours after the removal of the tube. The spasm due to fear of the operating table when repeated intubation and extubation are practiced may in rare cases require an inhalation of a few drops of ethyl chloride prior to extubation. Dover's powder is a valuable drug as an antispasmodic prior to extubation. Intralaryngeal medication consists in applying a coating of medicated gelatin to each tube. Such medication as orthoform, 10 per cent. in gelatin or ichthyol gelatin, served me well in a case of persistent tube, reported seven years ago. Owing to the thickness of the coating of gelatin a tube one size smaller than usual is required.

*Subcutaneous Method.*—In severe cases of diphtheria it is better to give 10,000 units by hypodermic means. As a rule some benefit should be noted within twelve hours after such treatment.

*Intravenous Method.*—If septic manifestations are evident, especially if the case has been untreated for many days, the most rapid method of destroying the diphtheritic poison is by injecting into the median basilic vein at least 10,000 to 20,000 units.

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## THE ETIOLOGY OF IRITIS.

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The recent advances in clinical pathology of the various internal infections make our usual classification of the causes of iritis incomplete and unsatisfactory. It is the habit of the human mind to explain an effect by the cause nearest at hand. We have believed always, and not without apparent reason, that rheumatism bore some etiological relationship to iritis; therefore, when in the presence of iritis we found a history of rheumatism no matter how remote or indefinite we called the case rheumatic iritis. More than propinquity or family resemblance is necessary to-day to establish relationship. Serum reactions and other laboratory findings as well as therapeutic tests are called for to prove cause and effect.

The old classification of iritis recognized three etiological types, (1) idiopathic, (2) symptomatic, (3) traumatic. The first long ago should have been dismissed. It includes that group into which we place all cases of which either from ignorance or lack of thorough study the cause is unknown. These cases all fall within the last two groups and their number diminishes as our knowledge increases of the relation of the eye to other parts of the body. The iris is part of the circulatory tunic of the eyeball and is in direct connection with the circulation of all other organs. An infection in the general blood stream pervades the iris and reaction takes place which may or may not be perceivable.

We are very prone to consider the organ in which we have special interest as being a thing apart. If we continuously bear in mind that the iris, particularly its circulatory coat, is an integral part of the body we will discover that the diseases arising in its own structure are few and far between; and the type of disease we call iritis probably does not arise primarily in the iris tissue but is symptomatic to some infection derived from without or from within the body through the blood stream. Therefore, we can classify all cases of iritis as exogenous, deriving its infection through a wound connecting with the outer surface of the body, and endogenous deriving its infection from within.

A further classification is made usually into primary, in which the iris alone is involved, and secondary, in which the iritis is the result of extension of inflammation from other portions of the eyeball. It is improbable, however, that the iris can be inflamed without involvement of the other portions of the uveal tract, Descemet's membrane, ciliary body, and choroid; and vice versa these cannot be diseased without some involvement of the iris, be it ever so slight. But the diseases of Descemet's membrane, ciliary body, and chorioid can be divided also into exogenous and endogenous; and a little thought, therefore, will show that the terms primary and secondary are unwarranted, even if convenient.

We are in position now to consider more in detail the factors concerned in the causation of these types, exogenous and endogenous. Of the former there is little difficulty of diagnostication, for the condition is the result of traumatism either accidental or operative, and the common varieties of pyogenic organisms or their toxins are present. In the latter or endogenous group are included the many internal diseases usually assigned as the cause of iritis. Here our interest mostly centers, for we find not only the ordinary cases of iritis, but also those cases of uncertain or unknown origin, which have been classified as idiopathic. It will be profitable, therefore, to study a little in detail some of these etiological factors.

*Syphilis.*—While statistics differ (varying from 10 to 75 per cent.), it is generally conceded that syphilis, inherited and acquired, is the chief cause of iritis. With inherited syphilis the iritis is of the ordinary type presenting nothing pathognomonic of lues, unless it be accompanied by a gumma in the iris tissue. The inflammation may occur alone or with interstitial keratitis. In acquired syphilis the iritis takes one of two general types, either a simple inflammation presenting macroscopically and microscopically nothing distinctive, or a type which is always pathognomonic of syphilis. Of the latter type there are two forms, papillary and gummatous.

Papillary iritis is an ordinary plastic inflammation accompanied by nodules of various sizes confined to the pupillary zone. The nodules may be single or multiple. They appear during the second stage coincident with or soon after the rash, and they closely resemble the papillary syphilides.

Gummatous iritis is a tertiary affection and presents as a gumma, single and monocular usually, in the ciliary zone. It frequently has its origin in the ciliary body.

The presence of papillary or gummatous iritis makes positive the diagnosis of syphilis, but that of a simple plastic iritis even in conjunction with other symptoms is not necessarily significant of syphilis, for it may be due to a complicating infection. This is particularly true of iritis that develops several years after a primary infection.

Gonorrhea and Rheumatism.—For several years the attention of ophthalmologists has been directed to gonorrhea as a cause of iritis. As many cases of articular and non-articular rheumatism are of gonorrheal origin, so also the attacks of iritis that frequently follow them have been found to be due to the same cause. True articular non-gonorrheal rheumatism is rarely complicated by iritis, but rather that indefinite chronic rheumatism, non-articular in type, which undoubtedly is due frequently to toxins derived from a urethral gonorrhea or other local infection. Gonorrheal articular rheumatism is very prone to be accompanied by an attack of iritis, being a member of the syndrome urethritis, rheumatism, iritis.

While the majority of cases of iritis due to gonorrhea are preceded by joint involvement there is no doubt that the iris as well as other parts of the uveal tract can be affected without an antecedent articular rheumatism which has been proven by statistics of Nettleship, and by a case of chorioiditis reported by me in the *Journal American Medical Association* for June 8, 1912.

A few observers have attempted to describe a distinctive picture of gonorrheal iritis, but no more than a suggestion of certain tendencies can be made clearly. It is of the plastic variety, more liable than other forms to be accompanied by a metastatic conjunctivitis, and is apt to be violent and intractable to treatment; but so many cases, both severe and mild, go unrecognized as to their gonorrheal origin that as yet any attempt to depict a particular form is unsuccessful. A more general use of the complement fixation test will aid in clearing up these obscure phases of the subject.

Autointoxication.—There is no doubt that the absorption of toxins produced by intestinal putrefaction is of etiological significance in the causation of inflammation of the uveal tract including the iris. Cases of iritis negative to all tests and accompanied by urinary findings of intestinal putrefaction have been cured by the eradication of the toxemia combined with ordinary local treatment to the eye. This, of course, is not a positive therapeutic test, for many cases of iritis even of obscure origin subside under local treatment alone. But there are other cases, chronic in nature, that go along badly under various lines of treatment which begin to clear only when the intestinal putrefaction is found and stopped. There is no doubt also that such digestive disorder is a contributory factor in cases the direct cause of which may be another infection, such as diabetes. It is well to bear this in mind in the treatment of all cases of iritis of whatever origin.

Local Infection.—That localized purulent infections of various parts of the body will cause uveal inflammation is very probable. It has been shown that tonsillar affections, if purulent, will produce streptococcic poisoning that will simulate rheumatism. There is no reason why such an infection should not cause an attack of iritis. Other local infections such as septic uterus, alveolar abscess or sinusitis have produced cases of iritis observed by several writers. One case that I have seen was that of a woman who developed an iridochorioiditis during the course of a septic endometritis which did not begin to subside until after removal of the septic material from the uterus. A case more illustrative of intestinal toxemia was that of a young man treated by me for five different attacks of iritis between the years 1904 and 1907. No cause could be discovered until during the last attack the patient became aware that he was passing parts of a tapeworm. After being relieved of his unwelcome guest the attacks of iritis ceased and have not returned since.

The purpose of this paper is not to detail all the possible causes of iritis, among which may be found besides those mentioned above tuberculosis, diabetes, and acute infectious diseases such as influenza, typhoid fever, and malaria, but to suggest byways through which we may advance to a better comprehension of the etiology of iritis, a subject that offers much material for study and reflection.

147 East Eighteenth Street.

## A PLEA FOR GREATER CONSIDERATION FOR THE OPIUM ADDICT.

By C. B. PEARSON, M.D.,

BALTIMORE, MD.

I DEFINE the opium habit as an imperative demand of the system for opium; followed by mental and nervous collapse, insomnia, loss of appetite, vomiting, cramps in the bowels, profuse perspiration, extreme restlessness, extreme prostration, and sometimes death when this demand remains too long unsatisfied. I mean by opium, opium in any form or any of its derivatives.

My excuse for writing this article is that there are still many physicians who can look upon patients presenting the above picture with indifference. And because there are still many who make light of the shock caused by sudden withdrawal.

Furthermore, my high percentage of permanent results in treating even very bad cases who have never before been treated, and my low percentage of permanent results in treating those who have relapsed after passing through the so-called "quick" methods of treatment, leads me to think that, aside from the immediate shock and suffering, there must in many cases at least have been permanent damage done to the central nervous system. I believe that the police or jail physician who refuses opium to addicts under short sentence or detention is not only doing no good whatever, because a short detention can produce no cure, but is doing something so brutally inhuman as to be out of touch with the civilization of the twentieth century. And, furthermore, he is placing a human life in danger, for they certainly do die sometimes; but, more than all this, I firmly believe that he is doing these poor wretches, who are already sufficiently unfortunate, permanent damage.

I have talked with many women who have given birth to children who have also endured the suffering of opium withdrawal, and all say with one accord that the suffering of childbirth is not to be compared with it. Any addict who finds himself in jail or police station would much sooner endure the suffering caused by starvation or thirst than be deprived of his opium. And yet if our prisoners

were deprived of food and water the whole country would at once be up in arms, and if they knew as well just what suffering the deprivation of opium meant to the imprisoned addict, they would be equally indignant.

Where prisoners are to be confined for long periods of time, a cure or death can be brought about by absolute withdrawal. It is just as easy to bring about the cure by humane methods as in any other way. As for myself, I could not endure the sight of the unnecessary suffering caused by absolute withdrawal, any more than I could stand by and see a leg amputated without anesthesia where there was no contraindications to its use.

Our judges, from the country justice to the judge upon the Supreme Bench, should know something of opium addiction in order that when they have any dealings with this unfortunate class they may be able to give intelligent expression to those humanitarian instincts which they usually possess. Our legislators also should know more about the matter. Their efforts in many cases, it seems to me, are crude and amateurish. In many cases the laws passed seem only to annoy and distress the unfortunate addict rather than to restrict the spread of opium addiction.

Remember that it has been found difficult to stamp out the use of alcohol by law, and alcohol is more bulky, it is harder to conceal in transportation, and its influence upon the individual is far more easy to detect.

A rigid enforcement of an unwise law would force the trade out of the hands of the legitimate druggists into the hands of a set of scamps who will not be restrained by conscience or anything else. And when that happens opium addiction will spread faster than it does now. Because such parties, being exposed to risk and danger, will naturally try to increase their business as a compensation for the risk.

The respectable druggist has no wish to increase his opium trade. Perhaps the most humane and at the same time restrictive law that could be passed would be registration of all addicts with the public health officials, and compelling the former to get an order from these officials whenever they wished to purchase a new supply. And physicians should be restricted to prescribing therapeutic quantities for strictly therapeutic purposes. But the actual addict should not be debarred from procuring his needed supply. It should be remembered, however, that no matter what laws are passed, as long as pain and suffering, insomnia, acute and chronic alcoholism are with us, opium addicts are bound to be manufactured.

And it also should be remembered that the causes just mentioned always have furnished, and probably always will furnish, the great majority of addicts. The number of recruits furnished by ignorant self prescribing, by nostrums containing opium, and by the opium smoking dens can, I believe, be lessened by law.

On account of the extreme sensitive and secretive nature of the opium addict, even as humane a law as the one I have suggested would, I believe, open a lucrative field for illicit dealers in opium. And these parties, as I have before mentioned, can be depended on to do all in their power to extend their trade. There seems to be a tendency in our law making bodies to attempt to remedy all sorts of evils by legal enactment. Whether they are right or wrong in this is too profound a question for my philosophy to solve.

I believe, however, that I am safe in saying that we should not lose sight of such old and tried means of civilization and uplift as home training, the school, the church, and the press. Our own profession should and I believe is exercising all due caution. Before we assume a carping attitude toward the profession let us remember the heart-rending pain and suffering that the profession come in daily contact with. As long as conditions are as they are errors of judgment are bound to ensue and opium addictions bound to result. Even though these occur but rarely, when we consider the vast extent of our country, the sum total must be a large army of opium addicts.

So far as our National Congress is concerned, if its members think that the import duty on opium has a tendency to restrict opium addiction they are mistaken. Opium is never expensive to the beginners. It is only after the poor wretch is firmly enmeshed in its clutches and after the ordinary therapeutic doses have been multiplied forty to three hundred times that the price begins to pinch. If revenue is the only consideration, let me humbly remind them that in many cases that revenue comes from poor women who have to earn their opium money, feeble as their health is, by taking in washing.

In all our public institutions, asylums, penitentiaries, almshouses, homes, etc., humane consideration should be given the opium addict. The very old and feeble should be given enough opium to keep them comfortable. The others should be treated by methods that are at once humane and rational.

I have only a few words to say about treatment. In the first place, no matter what has been advertised or what any one says, there is no such thing as a specific for opium addiction. Those who advocate the various quick methods do so perhaps to have the matter over quickly and save time. If we reckon time from the beginning of treatment until complete convalescence, by far the quickest method of treatment is intelligent reduction, so adjusted that the patient may be comfortable throughout the entire course of treatment. Then, again, many advocate the quick methods because they imagine that no improvement can take place until all the opium is out of the system. This is a mistake. I have had patients gain forty pounds by the time the last dose was withdrawn. Others advocate the quick methods because they imagine that so much suffering is necessary anyway.

If the problem of reduction is looked upon as mathematical rather than therapeutic, there will, indeed, be suffering enough. Rightly handled there is very little. Three-fourths of my patients say that they are more comforftable under my care than when taking the drug themselves. Others still advocate the quick methods because they are easy to apply—a poor reason. Certainly the patient who has gained forty pounds by the time the last dose is withdrawn is in better shape to withstand the dangers of relapse than one who has lost twenty pounds while undergoing the trying ordeal of a quick method of treatment and whose nerves are wracked to pieces.

I do not recommend this system of treatment as one that any tyro can pick up and handle successfully. Its technique must be mastered by close clinical study, preferably under the instruction of one who is master of all the details.

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## THE PROTEIN ELEMENT IN NUTRITION.

FOR many years the question of the amount of protein necessary for the proper nutritional support of the body was considered as definitely determined, an opinion based chiefly upon the studies of Voit. Chittenden, however, in a long and careful series of dietary experiments showed some years ago that it was perfectly possible for persons living a sedentary life to cut down the amount of protein intake without interfering with comfort or mental or physical activity. Chittenden's experiments were very carefully performed and no question has been raised as to the accuracy of the analytical determinations or the reliability of the facts reported. There has been, however, a great deal of criticism as to the general applicability of such a limited diet, either in health or in disease, and Chittenden himself has acknowledged that not everyone is capable of reducing protein intake to or below eight grams of nitrogen a day, and still retaining a satisfactory physical condition. The discussion has been carried on from several standpoints; some have tried to argue from the excellent results obtained by overfeeding in tuberculosis and similar conditions that a reduction in the total protein of the food would make persons more liable to infections; others have pointed to the universal consumption of large quantities of meat by the well-to-do classes and the excellent physical condition of persons living under such conditions.

The experiments of Chittenden were open to attack from one point, that of necessity the period over which they extended was limited. Only a few of the experimenters continued on a five to six gram nitrogen diet for more than a year or so. It was evident, therefore, that the question must be studied by comparing people who had been for a number of generations on such a diet with those on a high protein food during the same period. Major D. McCay, the writer of a recent monograph on this subject,* by reason of his official position in India, has had unusual opportunities in the study of races who have for generations lived on a low protein régime, since among some of the native tribes the protein intake is very small, while among others meat is largely eaten, and in far greater quantity than the European average. While details cannot be given here the general conclusions as stated in this little volume are that a diet fairly liberal in protein does not necessarily carry with it the penalties which Chittenden thought might be due to an excess of nitrogen excretion, but that the healthiest and best-developed races in Hindustan are those that consume the largest quantities of protein. The question cannot yet be regarded as closed, but this monograph is a very interesting and valuable contribution to the high protein side of the problem by a man whose opportunities for observation have been exceptional.

*The Protein Element in Nutrition. By Major D. McCAY, M.B., B.A.O., M.R.C.P., I.M.S. Professor of Physiology, Medical College, Calcutta. (International Medical Monographs.) Price, $3.00 net. London: Edward Arnold; New York: Longmans, Green & Co., 1912.

## VACCINE THERAPY OF PERTUSSIS.

LIKE others of the so-called diseases of childhood, pertussis is too often regarded as a matter of small moment and its really serious possibilities are not considered. Yet in gross mortality it exceeds scarlet fever and diphtheria. In children it takes first rank among the acute infections as a cause of death. Especially under one year of age is it to be dreaded, and in institutions the mortality in infants ranges from 25 to 50 per cent. It is particularly dangerous in infants because of its common and serious complications of bronchopneumonia, convulsions and gastroenteritis. A large percentage of the deaths from the disease follow the complicating bronchopneumonia. In the United States for 1910 whooping cough had a death rate of 11.4 per 100,000 population, while the death rate from scarlet fever was 11.6 per 100,000, of measles 12.3, and of diphtheria 21.4. Thus it is seen how evidently whooping cough ranks with the most dangerous diseases of childhood. In spite of its extreme communicability and serious nature especially in infants and young children, the physician is prone to underestimate its danger. Yet as Rucker, writing in Public Health Reports, No. 100, pointedly states, "Any disease which kills 10,000 children per annum is a serious disease. If bubonic plague were to kill that many children in the United States in one year, the whole world would quarantine against our country. A child dead of whooping cough is just as dead as if it died of plague. Whooping cough is a disease to be avoided and combated in the interests of humanity and the citizens of to-morrow."

Until Bordet and Gengou in 1906 discovered a presumptive cause for pertussis, the etiology was frankly hidden and little progress was made toward securing a specific remedial agent. Bordet and Gengou assigned an etiological rôle in pertussis to a bacillus which they isolated from the deeper and more remote parts of the respiratory tract. It is seldom found above the level of the larynx and oftenest is below it. This bacillus is small, ovoid non-motile, Gram-negative, and takes feeble stains with the ordinary basic stains. It grows best on a mixture of 3 per cent. agar with defibrinated rabbit or human blood. The discovery of this bacillus has led investigators to seek a specific therapeutic agent for pertussis.

Bamberger in the January number of the *Ameri-*

*can Journal of Diseases of Children* reports six cases of whooping cough treated with autogenous vaccines of the Bordet-Gengou bacillus. This bacillus was isolated by plating and replating cultures made from deep swabs of the throats of children suffering from the disease. The vaccines contained twenty millions of the dead organisms per c.c., and were made from several strains of bacilli in order to obtain polyvalency. The children, ranging from 1 to 4 years in age, showed no constitutional symptoms from the injection of vaccine. Bamberger concludes that the treatment seemed rather to lessen the severity and abort complications, than to shorten the duration of the disease, although only two of the cases lasted six weeks. The sooner the treatment begins, the better the results. He recommends large doses of 500 millions of the organisms administered daily and considers that the method may do much good and in any case will do no harm.

Such work deserves encouragement and this subject should receive full and careful laboratory investigation. To place the treatment of pertussis on a par with that of diphtheria will be a splendid achievement. The problem is attracting well-deserved attention and we may hope for a speedy solution.

## PROGERIA AND ATELEIOSIS.

Both of these terms have been introduced into medical nomenclature by Hastings Gilford. Progeria, which means premature old age, has been used to designate those extremely rare cases of infantilism in which, in addition to the arrest or delay in the growth of the body, there also develops a condition of premature senility. From a childhood that has been delayed in development the individual passes into a premature old age. Ateleiosis is the name given to an important variety of infantilism for which no apparent antecedent or coexisting cause can be assigned. It is a retardation rather than an arrest of development. It may begin at any period of the life of the individual, it may affect different parts of the body to a different degree, and its rate may vary in different cases.

Prof. Arthur Keith of the Royal College of Surgeons of England reports in the *Lancet,* February 1, 1913, the results of a study that he has made of the skeleton of a case of progeria, which skeleton has recently been added to the museum of the college. He describes in detail the peculiar combination of infantile and senile changes manifested in the skeleton. He also points out the striking contrast between this condition and acromegaly. Those parts of the skeleton which are overgrown in acromegaly are undergrown in progeria. Progeria is not a generalized dwarfism, nor is acromegaly a generalized overgrowth of the bones of the body. Both conditions are selective in action and affect the same tissues and parts of the body. It is noted that Gilford regards progeria and acromegaly as contrasted forms of senilism. In progeria the tissues pass prematurely into the condition seen in aged men and women; in acromegaly the tissues undergo an atavistic change and assume characters belonging to a remote phase in the evolution of the human body; in other words, acromegaly is a condition of ancestral senilism.

Keith, without committing himself as to the validity of this hypothesis nevertheless perceives an important contrast between acromegaly and progeria as regards the light they throw upon the physiology of the internal secretions. It is suggested that if the changes in acromegaly are produced by a stimulus or hormone proceeding from the hypophysis cerebri, then the condition in progeria can be best explained by an absence or marked diminution of that stimulus.

## TUBERCULOSIS IN CHILDHOOD.

This subject is frequently revised to date, and many are the new notions introduced which do not stand the test of time. Most of these innovations revolve about individual conceptions of scrofula. One would see in the latter chiefly "pyogenic" manifestations, in which only the ordinary pus exciters are involved—pyogenic scrofula of Cornet. Another sees in the old clinical conception of scrofula the modern exudative diathesis, or the status thymicolymphaticus. A third makes no distinction between the almost universal lymphadenopathy of childhood and actual tuberculosis—the enlarged lymph nodes standing for latent tuberculosis or representing a paratuberculosis.

If we exclude from consideration all doubtful lesions and adhere throughout to manifest tuberculosis of the sort which attacks adults, we obtain clear-cut results. Thus Rohmer during a session of the General Medical Society of Cologne (*Münchener medizinische Wochenschrift,* January 21), gives a chronological scheme of acquired infantile and child tuberculosis as follows: During the nursling period we may have a primary focus in the lung, with consecutive involvement of the bronchial lymph nodes with eventual caseation. There is no tendency to local or general extension at first, but from the caseous deposit a generalized tuberculosis may result within the year. From the second to the sixth year the meninges are most frequently secondarily involved, and there will be many more cases of tuberculous meningitis than of generalized tuberculosis. Osseous and glandular lesions are also of common occurrence (meaning, of course, manifest cases of tuberculosis of internal origin). During the same period acute miliary tuberculosis and acute caseous pneumonia are not uncommon. We must reach the school years—say from six to fourteen, inclusive. These years are characterized by an extremely low tuberculous morbidity and mortality. In other words, what the French term the "second childhood" (second dentition to puberty) is one of relative immunity to the disease. Roughly speaking, the caseous bronchial lymph nodes of the nursling represent the primary stage, and the numerous and varied manifestations up to the school years are the secondary manifestations. Then after a latent period we see first develop at puberty chronic pulmonary tuberculosis—a truly tertiary symptom, which becomes such a scourge to the race in its later years.

### On Anaphylatoxins and Endotoxins of the Typhoid Bacillus.

This is the title of an interesting paper in the *Journal of Experimental Medicine,* February 1, 1913, by Hans Zinsser, whose investigations go a great way toward explaining the toxemic manifestations of typhoid fever. His own and other recent work shows that it is not necessary to assume that bacterial toxemias are the result of the presence of specific endotoxins in the bacteria. Friedberger has demonstrated that acutely toxic bodies can be produced from typhoid bacilli by the action of sensitizer and complement, and that when small quantities of bacteria are used an excess of sensitization either interferes with the formation of the poisons or leads to a cleavage of the bacterial protein beyond the poisonous intermediate products spoken of as anaphylatoxins. These results have been confirmed by the experiments of Zinsser. But he has also shown, and in this respect his results differ from those of other investigators, that the action of complement upon typhoid bacilli, strongly sensitized or not at all sensitized, may be carried on at body temperature for considerably longer than twelve hours without leading to a destruction of the poisons, and that this is true when the quantities of the bacteria used vary within the wide range of from one to twelve agar slants. Powerful poisons are obtained by prolonged exposure at the higher temperature of considerable quantities of bacteria. From these experiments it is concluded that complement action of considerable vigor is required to obtain from the typhoid bacillus any appreciable yield of anaphylatoxin. The conditions prevailing in the infected body at the height of typhoid fever are those that favor the production of anaphylatoxin, the large number of sensitized bacilli being under the prolonged influence of considerable quantities of complement. It is suggested that while the existence of preformed intracellular poisons as an element in typhoid toxemia has not been proved, nevertheless poisons of this nature may still play a rôle in this disease, as perhaps in the production of the diarrhea and the hemorrhagic lesions.

### The Phenomenon of Arthus in Diphtheria.

Arthus's phenomenon is defined as a manifestation of anaphylaxis in which a guinea-pig, after receiving several injections of normal horse serum, develops an abscess, edema, or gangrene at the site of the last injection, becomes cachectic, and dies. In *Le Bulletin Médical,* January 18, 1913, Aviragnet and Hallé report four cases of diphtheria in which the serum treatment was followed by the gangrenous type of this phenomenon. They note that this extremely rare form of reaction occurs only when certain etiological conditions are present, as in the cases they report. These conditions are the following: (1) The injection of the antitoxic serum on the ventral surface of the body; (2) the recent occurrence of an eruptive fever, such as measles, scarlatina, or varicella; (3) the presence of diphtheria during its period of evolution, and (4) the presence of a severe grade of infection. In the cases observed by the authors there followed almost immediately after the injection of the antitoxic serum into the subcutaneous tissue of the abdomen a hemorrhagic necrosis of the skin. In two of the cases this was localized to a small area around the point of inoculation, but in the other cases it spread all over the abdomen and over the thighs. All of the cases terminated fatally. The lethal outcome was anticipated in two of the cases even before the antitoxic serum was administered, for the diphtheritic infection was a most virulent one. In the remaining cases the cutaneous gangrene superadded to the orginal infection made recovery impossible. The history of these cases, however, should not deter one from employing antitoxin when this is indicated, for the phenomenon of Arthus is of extremely rare occurrence and may be disregarded in the routine serum treatment of diphtheria.

## News of the Week.

**City Housecleaning.**—In a recent letter to the Mayor, Commissioner Lederle proposes a spring housecleaning for all of New York City, to the end that the city may be cleaner and healthier than ever before. The Commissioner suggests the removal of rubbish and dirt from cellars, yards, and vacant lots, through cleaning of the streets, cleaning out of garbage pails, freeing the city as far as possible from smoke and cinders, fighting the fly and the mosquito, not by "swatting" but by preventing breeding, and various other ways of promoting cleanliness and consequently health. The Mayor has approved the suggestion and has promised the cooperation of the various city departments.

**Immunization against Typhoid.**—The Department of Health of New York City has issued a brochure of information regarding immunization against typhoid fever, a procedure which the Department is now prepared to perform on request under conditions similar to those governing the free administration of diphtheria antitoxin. Inoculations will be made by the Department inspectors at the homes of applicants upon the advice of the attending physician, or cultures will be furnished directly to the physicians, or inoculations will be made at the Central Office in the Borough of Manhattan after investigation of the cases. The cultures used are prepared in the research laboratories of the Department.

**Regulating Vivisection.**—Still another bill aiming to regulate vivisection was introduced into the New York State Senate on February 10. The measure provides for the appointment of a board of supervision by the State Board of Regents from a list of names presented by any corporation of the State having as one of its objects the prevention of cruelty to animals. The size of the board of supervision is left to the discretion of the Regents.

**City Death Rate.**—For the week ending February 8, the death rate in New York City was 15.23 per thousand as against 15.24 for the same week of 1912, although the total number of deaths was increased from 1511 to 1568, this increase of 57 being offset by the estimated increase of population. The deaths from diphtheria, croup, and influenza were materially increased, while those from measles, scarlet fever, and typhoid fever were decreased in number. The death rate for the first six weeks of this year was 14.64 per thousand, as compared with 15.31 for the corresponding period of 1912.

**Report from Canal Zone.**—During the month of December, 1912, the death rate per thousand,

among the employees of the Isthmian Canal Commission was 7.14, a decided decrease as compared with 10.42 during the same month of 1911. Among the entire population of the cities of Panama and Colon, and the Canal Zone, the death rate per thousand was 20.99, a slight increase over the preceding year. Of the 32 deaths among employees, 9 were due to violence and 23 to disease, and of these 6 were due to lobar pneumonia and 6 to tuberculosis. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

**South Carolina Medical College.**—The Legislature of South Carolina recently passed, without a dissenting vote, the bill transferring the Medical College of South Carolina to the State in trust to control and operate. The management of the college is vested in a board of the Governor, the Superintendent of Education, the chairmen of two committees, and eight other members to be elected by the Legislature. An appropriation of $20,000 for the reorganization and continuance of the work during the present year is included in the bill.

**The Split Fee.**—A bill recently introduced into the Missouri State Legislature makes it unlawful for any physician or surgeon to divide a fee received from a patient, and imposes as a penalty the revocation of the offender's license and a fine of five hundred dollars. The bill also authorizes the State Board of Health to revoke the licenses of physicians addicted to the use of alcohol or drugs, or who are of immoral character.

**Fake Drugs.**—Dr. Carl L. Alsberg, the recently appointed head of the Bureau of Chemistry, made his first public statement of policy in a speech before the National Association of the Manufacturers of Medical Products in New York on February 12. The most important immediate duty of the bureau is, in his opinion, the curbing of traffic in worthless nostrums between the States. The efforts of the Department in controlling the adulteration of food products have been attended by considerable success, but this is not true of the attempts to regulate the sale of patent medicines, although it has been possible to bar the importation of all those bearing false or misleading labels as to curative power. With the domestic drugs many ways have been found of evading the law, but there is hope in the Sherley Act and also in the movement spreading among the decent newspapers and periodicals to bar from their advertising columns all but clean and honest matter. Dr. Alsberg also declared his intention of using every means at his command to stamp out the circulation of habit-forming drugs, such as opium and cocaine.

**The Friedmann Culture.**—Recent reports from Germany state that Dr. F. Friedmann has at lengthi carried out his promises and has given some of his alleged tuberculosis cure into the hands of Dr. Paul Ehrlich for test purposes. Dr. Friedmann himself is said to have sailed on February 18 for the United States, where better financial returns may be hoped for, if he proves his case, than at home. The publicity given to his claims by the newspapers has, as is always the case, resulted in a pitiful rush of sufferers to Berlin, with consequent disappointment. Up to the present, Dr. Friedmann's claims rest only on his unsupported word.

**Hospital to Sell.**—The building and site of the New York Nursery and Child's Hospital at Lexington avenue and Fifty-first street, are to be sold at auction on March 12. For the present, the hospital will continue its work in the building at Amsterdam avenue and Sixty-first street, but with the proceeds of the sale a new site will probably be obtained and improved quarters erected. The present site, lying as it does within the zone affected by the changes in the New York Central terminal, has become very valuable.

**Home for Aged.**—A bill has been introduced into the New York State Legislature providing for the establishment of a home for the aged of both sexes in the southern section of the State. An appropriation of $100,000 for a five-hundred acre site and for the erection of suitable buildings has been requested. The home, from which it is intended to remove all stigma of pauperism, will draw its inmates chiefly from New York City and Westchester and adjacent counties.

**Children's Hospital.**—St. John's Hospital, the new department of the Roman Catholic Orphanage, New York, was formally dedicated by Cardinal Farley last week. The building is four stories high, with a playground on the roof, and has accommodations for thirty children.

**Meningitis in Legislature.**—The sudden death of two Representatives in the Texas Legislature and the serious illness of a third, from cerebrospinal meningitis, caused the adjournment of that body on February 15.

**Physicians Licensed.**—Of the fifty-eight physicians who took the examination of the Virginia State Board of Medical Examiners recently, for license to practice in the State, forty-two were successful. Among these were two colored women, who thus become the first women of their race to be admitted to practice in Virginia.

**New Medical School.**—After careful planning, the trustees of the University of Chicago have announced their intention of erecting on the University grounds a magnificent group of buildings in which to house a medical school second to none. The Rush Medical College, already affiliated with the University, will be absorbed by the new institution for which a large endowment is being sought among the friends of the University.

**Dr. Alexis Carrel** of the Rockefeller Institute, New York, has been made a chevalier of the Legion of Honor of France.

**Cartwright Lectures.**—As previously announced, Prof. Ludwig Aschoff will deliver the Cartwright Lectures of the Association of the Alumni of the College of Physicians and Surgeons, New York. There will be two lectures, the subjects being "Thrombosis" and "Contracted Kidney," and they will be given at the New York Academy of Medicine on March 12 and March 15.

**Surgeon Seeks Pay for Aiding a Confrère.**—The Appellate Division of the Supreme Court of New York recently reversed the judgment of a lower court and ruled that when a physician is called upon by another to aid in an emergency case, the law will not award payment for his services. In this case a surgeon on the attending staff of a hospital in New York was performing an operation when the patient was seized with a severe hemorrhage, and the operator requested the assistance of another member of the attending staff, in checking the hemorrhage and completing the operation. The first physician had agreed before the operation to accept a fee of ten dollars from the patient, and therefore refused to pay a bill of twenty-five dollars presented by the second for his services. A suit in the Municipal Court followed with an award

for the amount claimed, and it is this decision which the Appellate Division has just reversed. Justice Lehman, who wrote the opinion, says: "If the plaintiff is entitled to recover it must be upon the theory that no professional courtesy or duty requires a physician to give aid to a brother practitioner associated with him in the same hospital, where the brother practitioner's skill is insufficient to cope with an emergency that has arisen and may cause disastrous results to the patient under his care. I am absolutely unwilling to hold that the profession of medicine does not impose such an obligation upon its members."

**Semicentennial of the New York Obstetrical Society.**—On Friday, February 14, 1913, there was held at the University Club, New York, a dinner at which there were about ninety present, to celebrate the Fiftieth Anniversary of the founding of the New York Obstetrical Society. Dr. George G. Ward, Jr., acted as toastmaster. There were present as guests of the Society: Drs. Abraham Jacobi, Matthew D. Mann of Buffalo, E. P. Davis of Philadelphia, Edward Reynolds of Boston, Frank Simpson of Pittsburgh, G. M. Boyd of Philadelphia, Wm. P. Sprigg of Washington, and Albert M. Judd of Brooklyn. Portraits of Dr. Thomas Cock, the first President of the Society, Dr. J. Marion Sims, Dr. Edward R. Peaslee, Dr. T. Addis Emmet, Dr. T. Gaillard Thomas, Dr. Wm. C. Lusk, Dr. Alexander J. C. Skene, Dr. Emil Noeggerath, Dr. Paul F. Mundé, and Dr. Josiah Knox were shown on the screen. A brief history of the Society was given by Dr. J. Riddle Goffe and Dr. Wm. S. Stone. Addresses were also made by Drs. E. P. Davis, Edward Reynolds, J. Whitridge Williams and A. Jacobi.

**State Medical Association of Texas.**—The date of the annual meeting of this Association has been changed from May 13-15 to May 6-8.

**Charitable Bequests.**—By the will of the late Dr. James P. Tuttle of New York, the New York Academy of Medicine receives a bequest of $1,000 to establish a fund for the purchase of books and literature referring to diseases of the alimentary tract.

By the will of the late Mr. John M. Lohse of New York a bequest of $10,000 is made to the Presbyterian Hospital and one of $15,000 to the German Hospital, while the Mount Vernon Hospital receives the sum of $8,000.

St. Catherine's Hospital and the German Hospital, Brooklyn, receive bequests of $5,000 each under the will of the late Mr. Louis Bossert of that city.

**Federation of State Medical Boards.**—The annual convention of this society will be held at the Congress Hotel, Chicago, Ill., on Tuesday, February 25, 1913, under the presidency of Dr. Arthur B. Brown of New Orleans. The secretary is Dr. George H. Matson, State House, Columbus, Ohio.

**Prof. Jaques Loeb** will read a paper before the Manhattan Medical Society on Friday evening, February 28th, at 8:30 o'clock, entitled "Some Recent Experiments on Artificial Parthenogensis." The officers of the society are Benjamin T. Tilton, *President;* William H. Stewart, *Vice-President;* Harold Hays, *Secretary*, and Albro R. Carman, *Treasurer.*

**Obituary Notes.**—Dr. George Clinton Jeffery of Brooklyn, N. Y., a graduate of the Pulte Medical College, Cincinnati, O., in 1875, a member of the American Institute of Homeopathy and of the New York State Homeopathic Medical Society, and consulting surgeon to the Cumberland Street, Memorial, and Jamaica Hospitals, died at his home on February 11, aged 61 years.

Dr. Helen Paschall Proctor of Philadelphia, a graduate of the Woman's Medical College of Pennsylvania, in 1905, died at her home on January 23, aged 41 years.

Dr. Edgar C. Quimby of Titusville, Penn., a graduate of the Cleveland University of Medicine and Surgery in 1881, died at his home on January 25, aged 57 years.

Dr. Thomas Henry McNally of Central Falls, R. I., a graduate of the University of Vermont College of Medicine, Burlington, in 1886, and formerly mayor of Central Falls, died suddenly at his home on January 24.

Dr. Francis F. Corson of Bridgeton, N. J., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1869, and a member of the New Jersey State and Cumberland County Medical Society and former president of the latter, died suddenly on February 1, aged 65 years.

Dr. Henry Goodwin MacKaye of Newport, R. I., a graduate of Harvard University in 1878 and of the Harvard Medical School, Boston, in 1885, a member of the Rhode Island State and Newport District Medical Societies, and for many years on the staff of the Newport Hospital, died at his home on February 2, aged 57 years.

Dr. George Washington Jenckes of Woonsocket, R. I., a graduate of Brown University in 1851 and of the Harvard Medical School, Boston, in 1854, a member of the Rhode Island State and Providence District Medical Society, and at one time president of the former, and president and later president emeritus of the Woonsocket Hospital, died at his home on January 26, aged 83 years.

Dr. Augustus R. Wright of Lumpkin, Ga., a graduate of the Atlanta College of Physicians and Surgeons in 1900, and a member of the Georgia State and Stewart-Webster Counties Medical Societies, died on January 29, in Brooklyn, N. Y., where he had gone for medical treatment, aged 45 years.

Dr. David W. Jump of Plainfield, Ill., a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1872, and a member of the American Medical Association and the Illinois State and Will County Medical Societies, died suddenly on January 29, aged 65 years.

Dr. Benjamin F. Graham of Minneapolis, Minn., a graduate of the Starling Medical College, Columbus, O., in 1865, and a member of the American Medical Association and the Minnesota State and Hennepin County Medical Societies, died suddenly at his home on February 2, aged 73 years.

Dr. Eli J. Smith of Neenah, Wis., a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1878, and a member of the American Medical Association, and the Wisconsin State and Winnebago County Medical Societies, died at the Clark Memorial Hospital after a short illness on January 31, aged 57 years.

Dr. Arthur Stanford Fletcher of Waterville, Me., a graduate of Tufts College Medical School, Boston, in 1906, and a member of the Maine State and Kennebec County Medical Societies, died at his home on January 31 from typhoid fever, aged 31 years.

Dr. Elmer E. Moore of East Providence Center, R. I., a graduate of the Dartmouth Medical School, Hanover, in 1886, and a member of the American

Medical Association and the Rhode Island State and Providence District Medical Societies, died at his home after a short illness on January 30, aged 52 years.

Dr. Samuel Whitfield Hartt of Seattle, Wash., a graduate of the College of Physicians and Surgeons, Baltimore, in 1889, died at his home after a long illness on February 5, aged 48 years.

Dr. Alfred G. Abdelai of Kansas City, Mo., a graduate of the Université de Montpellier, France, in 1852, a veteran of the Civil War and of the Franco-Prussian War, and a surgeon in the army of Maximilian during the invasion of Mexico, died at his home on January 25, aged 80 years.

Dr. Robert Parkers Mars Ames of Springfield, Mass, a graduate of the Jefferson Medical College, Philadelphia, in 1880, a member of the American Medical Association and of the Massachusetts State and Hampden County Medical Societies, and formerly a surgeon in the United States Navy, died at his home recently, aged 56 years.

Dr. Lewis W. Steinbach of Philadelphia, Penn., a graduate of the Jefferson Medical College, Philadelphia, in 1880, professor of surgery in the Philadelphia Polyclinic and College for Graduates in Medicine, and a member of the American Medical Association, the Pennsylvania State and Philadelphia County Medical Societies, and the Philadelphia Academy of Surgery, died at his home from pneumonia on February 10, aged 62 years.

Dr. Edward Sanford of Attleboro, Mass., a graduate of the Harvard Medical School, Boston, in 1852, died at his home after a short illness on February 5, aged 87 years.

Dr. Parks Ritchie of Saint Paul, Minn., a graduate of the Medical College of Ohio, Cincinnati, in 1870, professor of obstetrics and gynecology in the University of Minnesota, College of Medicine and Surgery, and formerly dean of the college, and a member of the American Medical Association, and the Minnesota State and Ramsey County Medical Societies, died at his home suddenly on February 2, aged 67 years.

Dr. Ulysses P. White of Artesia, N. M., a graduate of the College of Physicians and Surgeons, Baltimore, in 1894, died at his home on February 4, aged 44 years.

Dr. Isaac W. Douglass of Michigantown, Ind., a graduate of the Cincinnati College of Medicine and Surgery in 1864, a member of the Clinton Medical Association, and a veteran of the Civil War, died at his home from pneumonia on February 3, aged 72 years.

Dr. Edward L. Washburn of New Haven, Conn., a graduate of the Medical Department, Yale University, in 1865, died at his home from arteriosclerosis on February 10, aged 73 years.

Dr. William Beattie Nesbitt of Toronto, Ont., a graduate of the University of Toronto, Faculty of Medicine, in 1888, died at his home after a long illness on January 31, aged 45 years.

Dr. William F. Ganster of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1896, and a member of the American Medical Association and the New York State and Kings County Medical Societies, died at his home, following a nervous breakdown, on February 11, aged 46 years.

Dr. J. F. Flynn of Humboldt, Kan., a graduate of the Chicago Homeopathic Medical College, in 1893, died at his home after a short illness on February 1, aged 50 years.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

OPERATIVE SURGERY IN GENERAL PRACTICE—ACTINOMYCOSIS—SANITARY ENGINEERING—NOTIFICATION OF TUBERCULOSIS—DEPARTMENTS FOR HOSPITALS RECOMMENDED—LIVERPOOL TROPICAL SCHOOL—INQUESTS—OBITUARY.

London, Jan. 31, 1913.

General practitioners in this country are as a rule much less disposed to undertake surgical operations than is the custom on your side. In the cities and large towns there are hospitals to which the poor naturally go and many who have not that title to charitable help and would be willing to pay moderate fees seek admission because they cannot afford to engage a pure consulting and operating surgeon. For this and other reasons it has become customary for the majority of practitioners to give up operative work. There are, however, many who are willing and able but whose position does not give them much opportunity to exercise their skill in surgery. In serious cases a second opinion is asked for by the patient or his family or may be desired by the practitioner himself and then the operation, if decided on, naturally falls to the consulting surgeon called in and if the patient cannot pay his fee he may gain admission to his hospital. Mr. T. North, who is a practitioner ready to undertake what surgery comes in his way, brought the subject before the Medical Society of London and advocated the recognition of a class which he called "practitioner-surgeons," who for moderate fees would be willing to cooperate with those of their neighbors who preferred other work. There is really no need to set up a sort of specialty. Almost every G. P. has a surgical diploma giving full recognition and in many towns one of them possesses the confidence of his neighbors. In the present state of the profession the point deserves consideration and Mr. North's account of his own practice is most interesting. He showed the difference of operating in a private house and a hospital theater and insisted on the minutest attention to detail. To a man just coming from a modern, well-equipped hospital, where every assistance was waiting for him, it might look impossible to operate without any surgical conveniences, but it was not. He might scorn to see a kitchen pot or a fish kettle taking the place of a high pressure sterilizer, but they had served effectually in a pinch. He would not recommend aseptic work to a beginner for use in private practice for it is more likely to break down than antisepticism and involves great initial expense. Further, sepsis is much less likely to occur in private practice than in hospitals. Mr. North's results supported his opinions. He was able to report between 700 and 800 operations, including the most important, with a mortality of 2 per cent. for the whole series and 4 to 6 per cent. for abdominal sections.

Actinomycosis has been before the surgical section of the Royal in a couple of interesting papers. Mr. Haynes Lovell read one with special reference to involvement of bone based on a case which began as it usually does in the lower jaw. There was toothache at first and extraction of a bicuspid, and then a molar was done but no disease found in either. Some ten days later a swelling appeared in connection with the jaw externally and advanced

to the size of a walnut with no sign of disease in the mouth. A skiagram showed rarefaction, suggesting abscess at the root of first bicuspid but no sign of new bone or periostitis. Incision let out a little pus without organisms, but a culture grew a streptothrix. An autogenous vaccine was used, the bone scraped, and potassium iodide given in large doses with success. Mr. Lovell remarked that bone disease was usually an extension from the soft parts, primary disease in man only observed in the jaws probably infected through sockets of carious teeth. Two cases of isolated foci had been reported, one in lower end of the femur, the other in upper end of the tibia. There might be (1) periostitis due to adjacent disease of soft parts; (2) peripheral rarefaction (rare); (3) a central perforating type, the usual one in man (as in case above); (4) a central neoplastic type, common in cattle.

Mr. T. H. Kellock read the second paper, in which he considered the clinical features as observed in his own cases. Actinomycosis he met in two conditions, simple and septic—in the latter it was difficult to demonstrate the organism. The infection was almost always through the alimentary or respiratory tracts. Once within the cavities of the body it had a tendency to insinuate itself into the ducts opening on the surface and thus it affected the salivary glands, liver, and appendix vermiformis. It rarely spread by the lymphatics but mostly by continuity of tissue, unlike tuberculosis, ignoring anatomical boundaries. In the lower jaw its most marked feature was its painlessness in comparison with septic infection. A small, red, puckered spot on the face, perhaps preceded by a toothache, enlarged and was found adherent to bone. It softened and if incised very little pus escaped. If small and isolated it might get well without treatment beyond incision. He had not seen it in the upper jaw. Infection of glands opening into the mouth was common. In two cases he had known it to affect the tongue without any surface ulcer—a soft, painless swelling of rapid growth interfered with the movements of the organ—when it attacks the tissues at the side of the neck it causes marked fixation and spreads backwards sometimes as far as the spine. When the lung is the primary seat adhesion to the chest wall occurs rapidly. Chronic abscess at any part of the wall is found. In the appendix and cecum there is much infiltration, which, if abscess forms, lifts up the iliac vessels and infects the psoas muscle. In one of his cases the right kidney was attacked and removed under the impression that it was tuberculous as the patient had pyuria and pyrexia. Recovered after long course of potassium iodide in large doses. In all his cases diagnosis was confirmed by bacteriological examinations. He summed up the chief features as comparative painlessness, linear puckering of skin, spreading by infiltration of surrounding parts with no regard to tissue, entering ducts opening on mucous surfaces, little pus from considerable swelling, rapid improvement after scraping and potassium iodide in full doses, and little deformity or disfigurement remaining after eradicating by efficient treatment.

At the Institute of Sanitary Engineers Mr. H. P. Boulnois, in his presidential address last week, pointed out that many improvements in the removal of dry waste products still required to be carried out for notwithstanding some advances in temporary storage of house refuse and its ultimate disposal by burning, the objectionable method of collecting it was the same as forty years ago. He also spoke of the housing of the lower class and the way in which the efforts of sanitary engineers are thwarted by the habits of the people. Advances had been made in the ventilation of public buildings but there was scope for further progress. As to town planning of which so much is being heard, the first principle was proper designing of water supply and sewerage, involving very careful leveling and contourage; then roads, open spaces, houses, schools, hospitals, and other necessary provisions concerning all of which overcrowding should be kept in mind for the ignorance of the masses as to health was lamentable.

Tomorrow the revised order respecting the notification of tuberculosis is to take effect. It consolidates and extends the previous orders of 1908 and 1911 amending some points. By this order compulsory notification is extended to all cases of tuberculosis instead of pulmonary ones only as heretofore. The practitioner who first diagnoses its existence is required to notify immediately the health officer of his district and will be paid a fee of 2s. 6d. for the certificate.

The Council of the Royal College of Surgeons has adopted resolutions of a special committee recommending hospitals to establish a department for tuberculosis; to consider the advisability of applying for provisional approval as regards sanatorium benefit, and in localities where possible of utilizing the services of consulting physicians and surgeons under the Insurance Act in tuberculous cases.

The University of Liverpool has appointed Dr. J. W. W. Stephens to the Alfred Jones professorship of tropical medicine in succession to Sir Ronald Ross. Dr. Stephens has held the Myers lectureship on this subject for the last ten years.

Coroners' inquests are being reported on "victims to the Insurance Act" and even under more alarming terms. It is generally alleged that the deceased insured person could not obtain the attendance of the panel doctor because he was overburdened with the work—mostly filling up the schedules. Coroners have commented freely on these cases. In one the evidence was that more than 100 patients were waiting to be attended to. It seems curious that so many persons should be taken ill as soon as they were entitled to free attendance and that one surgery should be so overcrowded while other panel men were within a stone's throw.

A sadder case is that of a doctor who was said to have died from overwork in writing up the statistics of his panel work. Dr. Ducket, of East Ham, was found unconscious on his round, taken home and died. At the post mortem cerebral hemorrhage was discovered. The doctor who made it gave evidence and said he knew deceased was worried over the act and in fact had told him the previous day it was killing him. The widow confirmed this and added that he said it would be his death just before he went out. She also declared that they had sat up until a quarter to two every morning on the books of the panel work. Replying to the coroner she repeated that it was a quarter to two every morning when they turned out the gas.

Dr. J. M. Barnett, late surgeon-major of the Indian Army, died on the 24th inst. at the age of 82. He served and was wounded in the Persian campaign and received the medal with two clasps. He was also through the Indian mutiny. He was

M.D. Edin, 1852, in which year he joined the service. He retired in 1869 and had devoted himself to work in connection with various missions and social efforts.

Dr. Rudkin, consulting surgeon to Teignmouth (Devon) Infirmary and holding other appointments, died on the 27th inst.

Dr. Livesay died on Jan. 24 in the Isle of Wight after a long illness at the age of 68. He took M.D. Edin. in 1875. He edited "Yachting in the Arctic Sea." He had been president of the Royal Medical Society. He retired invalided about three years ago.

Dr. Owen T. Williams, Registrar Liverpool Royal Infirmary and lecturer on pharmacology at the University, holding several other appointments, died on the 15th inst. at the early age of thirty-two. He was joint editor with Professor B. Moore, of "Researches in Bio-Chemistry," a subject on which he had worked in the Johnston Laboratory. He also contributed numerous papers to the scientific side of medicine. He was B.Sc. and M.D. Lond.

Dr. Joseph Bayley, medical superintendent of the Hospital for Mental Diseases at Northampton, died on the 19th inst., aged 77.

## OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

THE PLAGUE—EMERGENCY MEDICAL RELIEF—TRANSFER OF LEPERS FROM GUAM—DIPHTHERIA—PERSONAL.

MANILA, P. I., December 21, 1912.

PLAGUE is still present in Manila, a few cases occurring from time to time. At Iloilo there have been no cases since September. There are many facts in connection with the outbreak of plague at Iloilo that would indicate that the disease was transmitted by bedbugs. All of the cases occurred in two houses, and after a diligent rat campaign extending over a period of three months, no plague rats have been found.

Since the beginning of the outbreak in Manila during June, there have been 49 cases with 41 deaths. During the past few weeks the disease has made its appearance in the Walled City, which is on the south side of the Pasig River, upon which side no cases had heretofore occurred. The first case that came to the attention of the health authorities was that of a cat which was kept in the commissary storehouse of the United States Army, and almost coincidently, human cases began to occur. Plague infected rats have also been found. It has now been a number of months since there have been any cases in the sections of the city which were first affected.

The recent severe typhoons which have swept through the southern islands of the Philippine Archipelago have made it necessary to provide considerable emergency medical relief to the victims. Upon receipt of information of the Cebu typhoon, five medical officers of the Bureau of Health, three medical officers of the United States Army, six Hospital Corps men, and a number of nurses, were sent to the stricken district. The haste with which this expedition had to be started gave an excellent illustration of the preparedness of the Insular Government to cope with emergencies. Information that medical relief was needed was not received until 11 o'clock in the morning of October 19, and at 4 o'clock in the afternoon of the same day, a vessel with the above-mentioned personnel and complete surgical equipment and necessary medicines, food supplies, tents, etc., was en route to the typhoon district. To aid the victims of the typhoon which occurred during the latter part of November, and of which Tacloban was the center, a number of medical officers were sent, and considerable relief was extended to towns in the provinces of Samar and Leyte.

In accordance with a recent act of Congress, the lepers of Guam, twenty in number, were transferred to the Culion leper colony. The Navy Department, under the jurisdiction of which Guam falls, will reimburse the government of the Philippine Islands for the expenses in connection with maintaining these lepers.

The Bureau of Health has recently completed another leper-collecting trip which included all provinces of the Philippines, and as a result, 293 lepers were transferred to the Culion leper colony. So far as known, all cases in the Philippines have now been isolated. There has been a very marked change in sentiment with regard to isolation, and many persons afflicted with the disease present themselves voluntarily.

During November there was a sharp increase in the number of diphtheria cases encountered in the city of Manila, and many bacilli carriers were found. These were invariably isolated at the San Lazaro Hospital, which action evoked spirited protests from the public against the isolation of persons apparently in good health. The prompt subsidence of the disease, however, has apparently fully justified the course which was taken.

Dr. R. P. Strong, for so many years the Chief of the Biological Laboratory of the Bureau of Science, has tendered his resignation.

Dr. Zack Laughlin, Medical Inspector, Bureau of Health, has returned from an extended leave of absence in the United States, and has been reassigned to his former district of Ambos Camarines and Albay.

## Progress of Medical Science

### Boston Medical and Surgical Journal.

*February* 6, 1913.

1. On Some Functions of the Free Dispensary. W. S. Thayer.
2. The Closure of Obstinate Perineal Fistulæ Following Operation for Stricture of Urethra. The Prevention of These Fistulæ. H. A. Lothrop.
3. A Note on a Circumscribed Epidemic of Diphtheria. H. M. Adler.
4. Tuberculosis and Public Health in South Africa. J. A. Honeii.
5. On the Nature of the Feeling of Unreality. J. W. Courtney.
6. A Report of Two Cases of Tuberculous Mesenteric Glands of the Cecal Region. C. G. Cumston.

1. Functions of the Free Dispensary.—W. S. Thayer agrees with Richard Cabot that the out-patient department is the most important part of a hospital. It reaches most directly the general public in its function of giving advice and offering care to the sick as well as in its larger function of instructing in methods of life and prophylaxis against disease. It is the one part of a hospital in which students of medicine are able to study these diseases with which they are most likely to meet in general practice. The dispensary should be an institution so equipped and conducted as to be a central point to which the physician practising among the poor should be able to resort for consultation and advice with regard to difficult and complicated cases. The abuses to which dispensaries are subjected are trivial. The chief dispensary abuses are the abuse of patients by careless doctors and externes and the abuse of opportunities by careless doctors and externes. In any dispensary constant care is needed as to the personnel of the staff and as to the character of the

work done. Especially important is the establishment of a social service department.

3. **Diphtheria in Institutions.**—H. M. Adler states that a patient suffering with indefinite catatonic symptoms should be carefully examined for physical disease, even if the usual signs of acute disease, such as fever, pain, etc., are lacking. A diphtheria bacillus may be causing active disturbance without local manifestations. A true diphtheria bacillus may be introduced into the wards of an institution for the insane and spread without causing clinical diphtheria among the patients. The diphtheria bacillus under these conditions maintains its virulence and is capable of causing clinical diphtheria. The diphtheria bacillus does not as a rule cause typical clinical diphtheria in insane patients. The attendants are liable to infection with true diphtheria, and often present the clinical picture of diphtheria, although none of the patients in their charge are characteristically ill with the disease. Diphtheria antitoxin should be freely used even in the absence of clinical diphtheria.

5. **The Feeling of Unreality.**—J. W. Courtney infers in the case of the victim of unreality that the visual impressions are so lacking in vividness that they do not carry into consciousness anything beyond the presenting flat surface of the solid object seen. In other words, a diffusion of the visual stimuli does not take place; presentation and representation in consciousness of these stimuli are lacking. Without this diffusion complete normal perception is impossible. To what, asks the author, may one attribute this lack of vividness and coherency of relation in the primary sensational elements, which leads to the feeling of unreality? Its explanation is simple if one bears in mind that the feeling in question is never a clinical entity, but for the most part constitutes merely a single symptom of that very complex adynamic state of the entire nervous system, which is termed psychasthenia. In this last named disorder there is, as every clinician knows, a marked lack of tone in all the bodily functions. Physical exertion produces prompt over-fatigue; the blood-pressure is below normal; the secretions of the digestive glands are inadequate; in a word, the whole picture is one of adynamia. And into it, on this basis, the feeling of unreality best fits.

## New York Medical Journal.

*February* 8, 1913

1. The Double Function of Fats and Carbohydrates in Nutrition and Their Different Nutritive Properties. H. D. Chapin.
2. The Relation of Scoliosis to School Seating. J. W. Sever.
3. Prostitution in Japan. D. C. McMurtrie.
4. Physical Therapeutics from the Modern Point of View. W. B. Snow.
5. High Frequency Currents in Medicine. F. de Kraft.
6. The Mouth from a Diagnostic Standpoint. M. Manges.
7. Ocular Headache. A. Brav.
8. Medical Inspection of Schools. J. F. Edwards.
9. Chronic Ulcers of the Leg. W. Brady.
10. Gastric Symptoms in Incipient Tuberculosis. M. M. Jacobs.

1. **Fats and Carbohydrates in Nutrition.**—By H. D. Chapin. (See MEDICAL RECORD, February 15, 1913, page 316.)

2. **Scoliosis and School Seating.**—J. W. Sever notes that school desks should leave room enough for the knees, and should be low enough so that the elbow and forearm may rest comfortably on them without bending the back. The slope of the desk theoretically should be about 30°; but as that is too steep an angle to allow books and papers to rest on it without sliding off, a compromise angle of from 12° to 15° has been selected. The seat should be no wider than the width of the hip, for wider seats predispose to slouchy attitudes. It should be about two-thirds the length of the thigh. It may or may not slope very slightly backward, but this is of no great importance. Any great slope is distinctly bad. The height from the floor should be such as to allow the feet to rest equally and comfortably on the floor. A seat of too great breadth, as well as one of too great depth, compels bad postures. The seat should have a back which supports the lumbar spine when sitting, at work, as well as at rest.

4. **Physical Therapeutics.**—By W. B. Snow. (See MEDICAL RECORD, Vol. 82, page 1071.)

5. **High Frequency Currents.**—By F. de Kraft. (See MEDICAL RECORD, Vol. 82, page 1011.)

9. **Treatment of Chronic Leg Ulcers.**—W. Brady outlines this treatment as follows: Cleanse the ulcer with warm normal salt solution, dry carefully with wisps of cotton, and dust on a light application of an anesthetic antiseptic powder; then apply a sterile petrolatum gauze pad and a light packing of cotton and bandage from toes to knees. This will invariably give great relief from pain and inspire the patient"s confidence. If inflammation or eczematous erythema is pronounced in the skin about the ulcer, a large wet dressing is required, with perfect rest for a few days. This dressing had better be normal saline solution for the first few times, kept wet by pouring fresh warm solution through a window flap in the oiled silk over the gauze. Should one find the ulcer covered with an old slough, brewer's yeast, if obtainable fresh, every two or three days makes an excellent dressing. It must be changed twice a day, covered with oiled silk or other impervious protective, and applied warm, without antiseptic contamination. Yeast must be kept cold. In old, dry, scaly ulcers with little or no secretion, the suggestion of Wright should be followed: Apply a wet dressing of one-tenth of one per cent. of citric acid and four per cent. sodium chloride solution, and administer citric acid in dram doses every three or four hours for a day or two. This will start a serous drainage from the ulcer and institute the processes of repair. For exuberant granulations there is but one cleanly remedy, the scissors. Pressure applied by means of adhesive straps, gauze pads, and proper bandaging will take care of moderately high granulations. In varicose ulcers a very effective procedure is elevation of the limb. Once the granulations assume something like a healthy, smooth, glistening, moist surface, at or near the level of the surrounding skin, the less one does the better. A simple sterile petrolatum dressing, merely to keep the gauze from sticking to the wound, is all that is ordinarily required. When the granulating surface contracts to an ulcer the size of a dollar, a neutral powder—sterile talcum, for instance—freely applied to the carefully cleansed and dried ulcer, covered with a few layers of gauze, and strapped in place with adhesive strips, is the best management. This should not be disturbed oftener than every fourth or fifth day—or even less frequently if there is no trouble from serous discharge.

10. **Gastric Symptoms in Incipient Tuberculosis.**—M. M. Jacob concludes that pulmonary tuberculosis in its incipient form may present gastric symptoms similar to typical organic or inorganic stomach lesions. Gastric disorders may be considered as among the first symptoms of pulmonary tuberculosis. Hyperacidity or normal acidity is the rule in incipient tuberculosis. The secretion of hydrochloric acid is independent of fever.

## Journal of the American Medical Association.

*February* 8, 1913.

1. School Diseases. E. O. Jordan.
2. Methods of Water Purification for Large Cities. R. Hering.
3. Epididymotomy. A Plea for a Rational Treatment of Epididymitis. R. M. Culler.
4. Developments in the Skin-Grafting Operation for Cancer of the Breast. W. S. Halsted.
5. Ulcer of the Bladder. L. Buerger.
6. Recent Observations on the Influence of the Position of the Stomach on Certain Aspects of Gastroptosis. R. F. Chase.
7. Conservatism in Surgery. A. D. Whiting.
8. Public Health Education. G. F. Reinhardt.
9. Salvarsan in General Paresis. E. H. Trowbridge.
10. Narcotic Addiction—A Systemic Disease Condition. E. S. Bishop.
11. Sulphuric Acid Caustic Pastes. W. A. Pusey.
12. Simple Method of Blood-Transfusion. T. B. Cooley and J. W. Vaughan.
13. The Effect of Strong Purging on Blood-Pressure and the Heart. C. H. Neilson and R. F. Hyland.

14. The Importance of Preserving the Integrity of Contiguous Structures When Operating on the Tonsils. C. M. Harris.
15. A Critical Study of the Albumin Reaction in the Sputum of Tuberculous Patients. J. R. Scott.
16. Death from Spinal Anesthesia. A. E. Rockey.

**4. The Skin-Grafting Operation for Cancer of the Breast.**—W. S. Halsted describes his latest technique as follows: The incision down the arm, made shorter and shorter, was finally abandoned. The vertical cut to the clavicle is made as short as feasible and when considerable skin has been removed above is omitted. Not infrequently the only incision of the skin is the circular one surrounding the tumor, but as a rule the one or the other of the vertical incisions has been made. By means of the two vertical incisions, one above and one below, the dissection of the axilla is, of course, facilitated. Thus the triangular flap has been definitely abolished. The skin of the outer flap between the two vertical incisions is utilized primarily to cover completely, without any tension whatever, and redundantly the vessels of the axilla. The edge of this flap is stitched by interrupted, buried sutures of very fine silk to the fascia just below the first rib in such way that the skin partly envelops the large vessels. Then, along the entire circumference of the wound, the free edge of the skin is sutured to the underlying structures of the chest wall, the wound being made as small as desirable in the process of closure, and tension on the upper or axillary part of the outer flap assiduously avoided. Considerable traction may, however, be exercised on the mesial flap and on the lower portion of the outer flap. Whatever the size and shape of the grafted defect, it should usually extend to the top of the axillary fornix. Thus the thoracic or inner wall of the apex of the axilla is always lined with skin-grafts. The advantages of skin-grafts are given by the author practically as follows: An almost unlimited amount of skin may be removed, and from his experience the results have been better the larger the areas of skin taken away, and the wider berth given the tumor. Skin-grafts present a definite obstacle to the spreading of cancer metastasis, as the growth does not tend as much to invade the grafted area. In some cases when there is a special tendency to dissemination in the skin, which he formerly regarded as hopeless, it occurred to the author that by surrounding the denuded and grafted area, more or less completely, according to the case, with a kind of moat this tendency to spread might be confined to the intervening region between the two grafted areas, the operation wound and the grafted area. The moat is formed by the excision of a narrow strip of the skin with its underlying fat and loose tissues. Possibly the gap made by the mere incision through the skin to the sheaths of the underlying muscles might sometimes be sufficient. If the moat is made at the primary operation the grafts on it should be covered with silver foil, which is an admirable dressing for uninfected surfaces when it is desired to leave them undisturbed for a week or more, as in breast cancer operation. For infected or granulating surfaces some other permeable and non-adhesive dressing like rubber should be used. If the grafting of the moat is delayed the Reverdin grafts are preferable to the Thiersch grafts. Recurrence in the deeper planes can be promptly detected under the thin grafted skin and should be burnt away, down to the pleura if necessary, by the actual cautery. Halsted disapproves of the suggestion of covering the defect by transferring the opposite breast, as it would conceal any deep recurrences. The inner or thoracic wall of the axilla being covered to the apex of the axilla by grafts, the skin of the outer flap can be used, in redundant fashion, for covering the axillary vessels, for obliterating the subclavian dead space, and for elevating the axillary fornix.

**5. Ulcer of the Bladder.**—L. Buerger states that while solitary ulcer of the bladder is considered very rare, two cases have recently come under his observation, which he reports. The condition may be frequently overlooked. Both cases had been examined with the cystoscope, but the cause of the most striking symptom, hematuria, had not been discovered. From the location of the ulcer, on the posterior vesical wall, the region often poorly shown in routine inspection, the ulcer is liable to be missed. The author specially refers to the work of Le Fur and Siredey as the most comprehensive contribution on the subject and summarizes the conclusions that may be deduced from the rather meager observations as follows: A careful search should be made in all cases of vesical hematuria for the presence of a simple solitary ulcer. Bleeding ulcers may be overlooked if one fails to bring every portion of the superior and posterior walls of the bladder in view. The most striking symptom in the cases under observation was hematuria, persisting for more than two years in one of the patients. In the treatment of this condition, as well as in the treatment of tuberculous ulcer after nephrectomy, the fulguration method should be tried, and if this fails mercurial injections should be given in cases of simple ulcer. Future studies should be directed toward the investigation of the etiology of this affection both by careful consideration of the histories of the cases and by thorough bacteriological examinations.

**6. The Position of the Stomach and Gastroptosis.**—R. F. Chase believes that there should be a change in present views as to gastroptosis and its relations to digestive disturbances, neurasthenia, etc. From his examinations and other data he finds that in the horizontal position the greater curvature of the stomach is found a little above the umbilicus in the average individual, though the normal limits range from two and one-half inches above to one inch below. In the vertical position the *x*-ray shows it to be considerably lower. By any reliable determination it would seem that in diagnosing gastroptosis one must find the greater curvature at least one inch below the umbilicus. The generally accepted views must therefore be modified and gastroptosis be less frequently diagnosed. Instead of considering it as present in 33 per cent. of females one will have to reckon on the percentage at somewhere about 10 per cent. The observed infrequency of digestive disturbances in alleged gastroptosis is thus easily accounted for. Fenwick estimates that gastroptosis may be the cause of indigestion in about 5 per cent. of cases. The author also appears to question its importance as a cause of stasis. Even in marked cases of gastroptosis the stomach sometimes empties itself prematurely, notwithstanding the "duodenal hill" over which its contents must be forced. The radiograph will teach more rational treatment and do away with much needless surgery. Far less attention will be paid to the position of the stomach as a cause of symptoms elsewhere as long as it is known to be properly doing its own work.

**12. Blood Transfusion.**—T. B. Cooley and J. W. Vaughan remark that, while the Crile method of direct transfusion is not difficult for one with special training and practice, others may experience difficulties with it that render it almost impracticable. For this reason they describe a case which they report because of the successful method employed. The patient was a baby two days old, who was suffering from severe hemorrhages from the stomach and bowels, until it had become nearly exsanguinated. Horse-serum failed to check the hemorrhage and Crile's method was attempted. Owing to the smallness of the collapsed veins of the child, who by this time was cold and pulseless, immediate action was imperative, so they concluded to try taking the blood from the vein of one of themselves into a glass syringe and injecting it into the child's veins before clotting could begin. The blood was drawn from the basilic vein of the donor into a glass syringe into which 1 c.c. of physiological salt solu-

tion had been previously drawn. It was filled to nearly its full capacity of 10 c.c., the sharp needle was changed for a blunt one and the blood was injected rapidly into the child's vein. This was followed immediately by one of salt solution. Improvement appeared within 15 minutes in the previously imperceptible pulse, and 10 c.c. more were injected. From this time on the recovery was rapid and uneventful and the child was saved. The total amount of fluid, blood, and salt solution injected was not accurately measured, but was probably between 20 and 50 c.c. The father's serum had been injected prior to the transfusion and there were no further hemorrhages. Although the authors say that many bloods will coagulate within three to three and one-half minutes, this affords ample time to carry out transfusion in the way described. Of course, it is essential to work rapidly.

15. **The Albumin Reaction in the Sputum of Tuberculous Patients.**— J. R. Scott concludes that in cases which have been clinically diagnosed as pulmonary tuberculosis, in which also the examination for the tubercle bacilli has been positive, there is an absolutely negative albumin reaction in about 10 per cent. The positive albumin reaction is admittedly of little value, since it may occur in any of a number of different diseases of the respiratory tract. The value of an "inconsiderable" or doubtful reaction is questionable. Practically all the albumin reactions are of no value in the routine diagnosis of pulmonary tuberculosis: (a) because the positive reaction occurs in many affections of the pulmonary tract other than tuberculosis; (b) because a negative reaction may occur in about 10 per cent. of positive pulmonary tuberculosis cases; (c) because with the test there are certain variations which would have to be eliminated in each sputum examined to permit of a reliable result; and (d) because in the case of an "inconsiderable" or "doubtful" reaction, one does not know in any given case how much importance to attach to the reaction.

## The Lancet.

*February* 1, 1913.

1. Malingering in Accident and Disease. Sir John Collie.
2. The Treatment of Syphilis with Salvarsan: First 1000 Cases Treated at the Royal Naval Hospital at Plymouth. L. Kilroy.
3. A Case of Suppurative Post-Typhoid Osteitis 13 Years After an Attack of Enteric Fever. A. H. Tubby and J. A. Braxton Hicks.
4. Progeria and Ateleiosis. A. Keith.
5. New Growth and Inefficient Immunity. H. G. Grünbaum and A. S. F. Grünbaum.
6. A Case of Infection in Man by the *Bacterium Prodigiosum*. H. M. M. Woodward and K. B. Clarke.
7. A Case of Old-standing Dislocation of Hip-joint Treated by Open Operation. A. Gibson.
8. The Treatment of Recent Injury by Mobilization and Massage. J. B. Mennell.

2. **Salvarsan in Syphilis.**—L. Kilroy reports his results as follows: Of 2,147 injections which were given to 1,000 cases there were 13 invalidings, no deaths, and 22 clinical relapses re-admitted to the author's hospital, 2 clinical relapses admitted to other naval hospitals, and 2 occurring in ships. Leaving out of consideration the salvarsan given after relapses, of 17 patients (5 of whom had previously received salvarsan elsewhere) who received one dose of salvarsan, no case reached the hospital as a clinical relapse. Of 901 cases receiving two injections, 21 cases reached the hospital as relapses, 2 are known to have occurred in ships, and 2 have been treated in other naval hospitals. Of 68 cases receiving three injections, one case reached the hospital as a clinical relapse. Of 14 cases receiving four injections, no case reached the hospital as a clinical relapse. One case of relapse after two doses given elsewhere has been treated by two further doses.

3. **Late Suppurative Posttyphoid Osteitis.**—A. H. Tubby and J. A. Braxton Hicks report the case of a man who thirteen years after an attack of typhoid fever developed a suppurative osteitis of the ulna. During the man's stay in the hospital several interesting clinicopathological investigations were carried out. A leucocyte count, taken on admission, showed no leucocytosis, and a Widal reaction with the patient's serum and three different strains of *Bacillus typhosus* was negative in a 1 in 20 dilution of the patient's serum after one hour, though controls readily agglutinated in a 1 in 200 dilution. Agglutination reactions with the paratyphoid group were also negative. The pus from the wound contained in pure culture a bacillus giving all the cultural reactions of *B. typhosus*, and this bacillus was also agglutinated by a known typho-agglutinating serum and fixed complement in the presence of a "typhoimmune" serum. *B. typhosus* rapidly disappeared from the discharge from the wound and could not be found a week after the operation. The urine and feces were examined for the presence of *B. typhosus* with negative results. The patient's serum would not agglutinate this bacillus obtained from the wound, but emulsions of the bacillus and other strains of *B. typhosus* were able to fix complement in the presence of the patient's serum. Complement fixation experiments with the other bacteria and the patient's serum gave negative results. This property of the patient's serum to "fix complement" but not "agglutinate" in the presence of its "own" *B. typhosus* or of foreign strains is regarded as an extremely interesting one. Following operation the patient made an uneventful recovery.

4. **Progeria and Ateleiosis.**—By A. Keith. (See page 345.)

5. **New Growth and Inefficient Immunity.**—H. G. and A. S. F. Grünbaum have observed that after the injection of streptococcus vaccine into the rat, during a period roughly corresponding to the negative phase, there is present in the rat's serum a substance which accelerates cobra venom hemolysis and later on disappears. In sarcomatous rats the following conditions are present: (1) A persistent hemolytic property of the serum. (2) An absence of, and usually an inability to produce, antitoxin to cobra venom; if its production can be excited, the tumor regresses. (3) The administration of antitoxin in the form of antivenom serum causes regression of the tumors. It seems, therefore, reasonable to infer that the absence of some immune body and the present of a hemolytic substance in the serum are factors which exert an influence on the growth of the tumor. Injection of vaccines in man also leads to the appearance of a hemolysophilic property in the blood. The administration of certain immune bodies will cure sarcoma in rats and will diminish new growth in man. The authors report a case of round-cell sarcoma, which steadily improved during the administration of artificial immune substance in the form of antivenom serum but never showed any response by antibody production to cobra venom toxin. The body weight steadily increased and the tumor mass decreased markedly in size. Another case, one of carcinoma of the larynx, likewise showed no reaction to injected toxin, but put on 14 pounds in weight, and improved steadily so long as the artificial immune body (in this case diphtheria antitoxin) was administered (eight weeks).

## British Medical Journal.

*February* 1, 1913.

1. The Exotic Flora of the Uterus in Relation to Fibroids and Cancer. Sir John Bland-Sutton.
2. Atypical Exophthalmic Goitre. H. L. McKisack.
3. The Portals of Entry of the Tubercle Bacillus, Especially in Childhood. E. Emrys-Roberts.
4. The Varieties of Tuberculin in the Treatment of Tuberculosis. N. Raw.
5. On the "Controlled" Therapeutic Use of New Tuberculin in the Treatment of Pulmonary Tuberculosis. A. T. Rigg.
6. Organic Acid Ratio of Urine After Tuberculin. A. H. Gregson.
7. A Year's Experience of Dioradin in Surgical Tuberculosis. A. Stoney.
8. Gastric Hemorrhage and Other Complicatios in a Case of Childbirth. W. D. Sturrock.
9. A Case of Cardiac Asthma. C. Wilson.

1. **Bacteria in Relation to Uterine Fibroids and Cancer.**—Sir John Bland Sutton states that it is undeniable that death from pulmonary embolism is especially frequent after abdominal hysterectomy performed for cancer of the uterus; it is far more frequent than after the removal of the uterus for fibroids, and the evidence indicates that the greater frequency of this catastrophe in operations for cancer of the uterus depends on the greater luxuriance of the flora in cancerous tissue, and that the streptococcus, of all the forms of microorganisms which abound in such uteri, holds the greatest "enmity with blood of man." In order to improve the results of abdominal hysterectomy performed for fibroids, surgeons must be more careful and more moderate in the use of buried sutures when closing the abdominal incision. The risks of operations for cancer of the neck of the uterus will be lessened when surgeons, with the aid of bacteriologists, devise means to rid cancerous tissues of noxious organisms before undertaking hysterectomy. The widespread tilling of the pelvic connective tissue inseparable from the operation ironically called radical abdominal hysterectomy favors the sowing, growth, and rapid multiplication of streptococci, with the result that in many instances death results.

2. **Atypical Exophthalmic Goiter.**—H. L. McKisack refers to cases of this disease in which the majority of the classical signs are absent. These cases are apt to be overlooked. They are too few to permit any reliable generalizations to be founded on them; but it is noted that in all the heart-rate is above normal, and in practically all the patient is aware of the rapid beating, either in the form of general throbbing of the arteries or as palpitation of the heart. This is the symptom which should always arouse suspicion, and when combined with tremor and with even a slight protrusion of the eyeballs it may be accepted as an evidence of hyperthyroidism. This last-named sign was, however, absent in fifteen of the author's twenty-one cases. Careful examination generally reveals an increase in the size of the thyroid—sometimes only to a very slight degree. In three cases it was normal, in five it was of moderate size, in two considerable enlargement existed, and in eleven there was slight enlargement. Tremor was absent in nine of the cases. Twelve of the cases were between the ages of puberty and thirty, and the remainder were between thirty and sixty. All but three were females, and one of the three men, while incomplete in the development of signs when first seen, soon progressed rapidly in an unfavorable course, and became a typical case in a very short time. Two of the cases showed marked vasomotor excitability. As regards the treatment of these atypical cases, it differs in no material respect from that of the fully developed disease. The author advocates a trial of the *x*-ray treatment. This procedure seems to offer a fair prospect of reducing the activity of the gland, without having to subject the patient to the risk of an operation for the purpose of removing a portion of the gland or ligaturing some of its vessels. Finally, the author suggests that the name "exophthalmic goiter" be as far as possible discarded, and that the condition be spoken and thought of as "hyperthyroidism." This term would include all degrees of the abnormal condition, while the more usual description, "exophthalmic goiter," merely suggests two of the chief, but by no means the most constant, symptoms.

3. **Portals of Entry of the Tubercle Bacillus.**—E. Emrys-Roberts states that there exist portals of entry of the tubercle bacillus that have long been recognized. For example, no one denies the transmission into the lungs of tubercle bacilli suspended in air in minute particles of moisture or in dust. Recent experimental evidence has amply demonstrated this very important avenue of infection, and has incidentally shown that the number of bacilli required, all things being equal, to set up pulmonary tuberculosis is relatively small as compared with the number necessary to induce tuberculosis elsewhere—as, for example, into the intestinal tract. No one questions transmission through the intestinal tract, especially in infancy, and here, again, experimental evidence shows that not only may the bacillus induce a lesion in the gut, but may enter the intestinal wall without producing a lesion at the seat of entry. No one, again, questions transmission through the nasopharynx; there is ample evidence, both clinical and experimental. Transmission can occur also through the skin. Experimentally, transmission through the unbroken skin has been demonstrated. Lastly, one reaches the antenatal avenue of entry. Omitting for the present this last portal of entry, one may say, with Calmette, that "the more frequent channels of invasion are the mucous membranes of the natural cavities of the body, particularly the digestive and pulmonary epithelium, and to these may be added the naso-pharynx." Whether one can go further with him and say, "Of these the digestive path is the one most commonly chosen," is, according to the author, open to question.

4. **Tuberculin in Tuberculosis.**—N. Raw concludes on the basis of the treatment of over 600 patients with injections of tuberculin that this is a remedy of the greatest value, especially in early cases and where the deposit of tubercle is localized, as in one apex or in a lymph gland or single joint; but where the tuberculosis is disseminated and complicated by secondary infection the use of tuberculin cannot be expected to be of much avail. It ought, however, to be tried in every case with the hope of some relief or possible benefit, as we cannot allow the patient to suffer and die without making every effort to arrest the progress of the disease. Tuberculin is not going to revolutionize the treatment of tuberculosis. It is a valuable aid to the other methods of treatment, hence it must be used with care and discrimination and with a full knowledge of its dosage and therapeutic effects. The best treatment one can offer to-day to a person infected with tuberculosis is a prolonged open-air life, preferably in a well-conducted sanatorium, excess of nutritious food, gentle exercise followed by plenty of rest, and a course of tuberculin by a careful physician.

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**Studies in Animal Tumors.**—Lewin sums up a long article by stating that the chemotherapeutic method of Wassermann, Neuberg and Caspari may indeed fail in individual cases but is plainly seen to exert a uniform specific activity. The cell poisons which are employed we know to be tumoraffin, but we do not know in just what manner, they influence the cells to their disadvantage. The necrotic change may be due to direct action on the cells or may be effected through the blood vessels. The subject cannot of course be verified upon human tissues. Hence the author prefers to work along strictly biological lines, such as are being tested extensively in other diseases. Tumor substance, tumor autolysates and similar products can be made to antagonize the growth of tumor cells. These substances circulate in the blood and there is no reason for a belief that they can poison the cancer cells in any but the most direct fashion. Unlike some of the metals and other extraneous bodies used they behave inertly to the organism at large. Clinical results have long ago been claimed for serotherapy in malignant diseases—by Coley's fluid, antimeristem, Doyen's serum, etc.—just as they have for chemotherapy (arsenic, silica, etc.). Of the two procedures biological therapy and chemotherapy, the author believes the former to be far better grounded in reason, and that work along this line will be much more profitable than chemotherapy in the long run. —*Berliner klinische Wochenschrift.*

## Insurance Medicine.

### FAITH CURE AND INSURANCE.

To the Insurance Editor:

Sir:—Do insurance societies make provisions for conditions of this kind, which in these days of irrational creeds are by no means uncommon? A short time ago I was called in to give a diagnosis as to whether a patient, who had been sick for four and a half weeks, had enteric fever. Clinical symptoms, Widal, and blood count established a positive diagnosis. I found the relatives Christian Scientists. They would of course accept no advice as to vaccines or medicinal treatment, and I left them with the usual suggestions as regards diet and prevention of infection. Two weeks afterwards I was applied to for a death certificate. Two weeks ago I was applied to under the following circumstances: A man had refused to have any medical advice for his wife who was said to be suffering from pulmonary tuberculosis. The wife apparently agreed with her husband. I was asked if I did not know of some law which would cover this. Beyond the restrictions imposed on such cases by the Health Office I know of none. The latter case is possibly not so serious as the former. If, however, people are through prejudice to let their patients die, when rational treatment would certainly save some of them, it seems to me the insurance societies have a problem on their hands, of increased risks, in these cases.

Francis Mead, M.D.

San Diego, Cal.

[The principles of life insurance are based upon standard mortality tables which were compiled by some of the world's greatest actuaries after studying the experience with hundreds of thousands of insured lives. These lives had been selected after the elimination of all kinds of debatable risks, and they represented individuals who had been strictly orthodox in their views as to the importance of medical aid. The great army of policyholders now living have contracted for life insurance with the understanding that the companies will continue to select risks on conservative and scientific principles and that they will not deviate from or change any of these principles unless they can secure sufficient data to justify them in such a step. The officers of the companies, who are merely custodians of the money of these same policyholders, would be recreant to their trust if they were to violate this understanding.

The daily press furnishes statements from time to time which would indicate that followers of some creed or other have died after refusing medical aid which would have probably saved their lives. The surviving believers in these doctrines or articles of faith will doubtless contend that the statements are not accurate. It is far from our desire or intention to enter into the discussion of the merits of either side in such a controversy. The fact remains, in any event, that there is grave doubt in the minds of nearly all policyholders, the virtual owners of the companies, as to the complete efficacy of any form of faith cure in the treatment of illness or accident, and that they could, therefore, criticise their respective companies for insuring those who, according to their own statements, would refuse medical aid in the event of illness or accident. The companies will not be in a position to assume such risks until they possess reliable statistics which are free from prejudice, uninfluenced by faith or sentiment, and based on a sufficiently wide experience to convince impassionate officers and actuaries that the risks in question can be carried without injury to the interests of the other policyholders.—Editor.]

**The Wassermann Reaction and Its Value in the Detection of Syphilis.**—Dr. Amand Ravold defines the Wassermann reaction as a highly complicated chemicophysiological reaction, the rationale of which is unknown, but which depends upon the physicochemical interaction between substances produced by the growth of the *Treponema pallidum* in the body, and found resident in the globulin fraction, and lipoids of the antigen. The reaction is not specific, but the experience with many thousand reactions performed throughout the world has shown that when properly performed and under certain limitations it is of inestimable value in the diagnosis of syphilis. Every time the test is made the reagents used must be freshly prepared and tested and carefully standardized; this work takes a careful serologist at least five hours. Ravold tells of ninety-eight carefully followed cases to show the value of the reaction. The number of primary lesions among these was forty-two, and Wassermann was positive in three, or 7 per cent. The clinical diagnosis was correct in forty, or 95.3 per cent. The clinical diagnosis was wrong and the Wassermann was negative in two cases. In the early secondary stage there were twenty-one cases, and Wassermann was positive in all but two of these. All had clear histories and typical primary and secondary lesions so that Wassermann was of no other but corroborative value. There were five tertiary cases, all diagnosed clinically, even though Wassermann was negative in three of the cases. In the latent and late stages the Wassermann reaction was positive in a surprisingly large number, 63 and 60 per cent., and when positive was of decided value as confirmatory evidence.

The serum acquires the property of giving rise to the reaction when the spirochetes have passed from the lymph into the blood stream late in the primary stage. The reaction is therefore of little value early in the disease except in cases of extragenital chancres, because the diagnosis can be made and treatment instituted long before the reaction becomes positive. In the secondary cases it is of little value except in atypical eruptions, where a negative reaction several times repeated is of decided value. In the tertiary stage it is of decided value when positive two or three times but it fails to be positive in a large number of cases. A negative reaction in this stage is therefore of no value unless it is repeatedly found.

The reaction is not specific because it has been obtained in protozoal diseases such as trypanosomiasis, in frambœsia, in tuberculous leprosy, malarial fever, some cases of scarlet fever, after treatment with antirabic vaccination, late in some cases of tuberculosis, etc. Ravold thinks that because of the work of inexperienced men the diagnosis of syphilis has been fastened upon a number of persons not ill of the disease, a positive Wassermann reaction being looked upon as surely pathognomonic of the disease. He thinks that the reaction is now generally condemned, and does not approve of this second extreme any more than of the unbounded enthusiasm first noted. Most important of all is a good serologist to perform the test, and the physician should lay aside all sentimentality and prejudice in selecting one to do his work. He should

make sure whether the man does his own work or relegates an important part of it to the office girl or a half-grown assistant. Then his work should be tested by sending him blood from patients manifestly syphilitic or surely free from the disease. The patient should never be sent to the serologist but the blood should be taken by the physician and sent to the laboratory. Ravold describes in detail the method of obtaining blood and warns against a needle with a dull point which simply pushes the vein away without piercing it. He has found that a large hypodermic needle is sufficient to obtain the amount of blood necessary for the test. The specimen should always be divided into two parts and sent to two different serologists or a portion sent to a friend who can send it to the same serologist. The tubes should be differently marked and care should be taken that the serologist should not find out that they are from the same person. Positive results from two different men become of decided value when all these precautions are taken. Often enough they do not agree and the error must then be searched for. Negative reactions are of value only if repeated several times. The laboratory man should not be looked upon as a consultant but as an assistant and his work should be scrutinized with the greatest care.

The Wassermann reaction should be looked upon as a symptom and should take its place in the symptomatology of syphilis. It is not the whole disease, it is not the court of last resort, and it is not infallible. The limitations of the reaction are many and the limitations of the worker with it boundless. In this country, however, the reaction is of greater value because of the extreme rarity of some of the diseases other than syphilis in which it may be present. The reaction has no prognostic value. A continuous reaction indicates in the great majority of cases that the patient is still actively syphilitic and needs further treatment, but a negative reaction does not mean the cessation of treatment. Persistent negative reactions determined several months apart may mean not that the patient is cured but that an equilibrium has become established between the germ and his body, the spirochete having become a saprophyte. There is ample proof, however, that syphilitics are cured of the disease, the best evidence being the number of reinfections reported. In the great majority of cases syphilitics, although apparently well and presenting no active symptoms of disease, are still uncured.

From the life insurance standpoint it is manifestly impossible to require a Wassermann reaction from an applicant who does not acknowledge syphilis. Very few applicants ever admit having had the disease and those that do, but have no active manifestations of the disease, believe themselves to be cured. If a Wassermann reaction is taken and proves negative the applicant would be insurable on a plan in accordance with the views on syphilis of the particular medical director. If positive the applicant would be ineligible and remain so until it had become persistently negative after treatment. Who is to pay for the reaction? Certainly not the company; but if the reaction is positive and the applicant is not admitted, he may only learn what he knows already. Once it becomes known that an acknowledgment of syphilis means added expense in getting insured no applicant will admit a previous infection. Ravold concludes that the Wassermann reaction is of no value to the medical director.

In the discussion that followed Dr. Harris said that the reaction should be tried with several antigens and the serum of the patient should be titrated, for then very weak reactions would not escape notice. He thought that in the secondary stage the reaction is positive in almost all cases and it is more frequent in late stages than is believed by Dr. Ravold. The reaction is of value in life insurance in diagnosing latent secondary and tertiary stages. The reaction may not be constant in such cases but it frequently is the only symptom and should be valued accordingly. The reaction in general is only a symptom of syphilis, but it is the most constant symptom and the longest persistent symptom. These two characteristics make the reaction of great significance both clinically and from the life insurance standpoint. Dr. Harris thought that the expense of having the test made should be borne by the applicant.—Second Annual Meeting of the Medical Section of the American Life Convention.

**Accident and Injury in Relation to Pulmonary Tuberculosis.**—J. B. Hawes, 2d, and A. Drinkwater note that cases of tuberculosis following chest injuries are not uncommon. In such cases the train of events is usually so clear as to leave no doubt as to the part played by the injury as the direct or proximate cause of the subsequent tuberculosis. So far as the question of recovery of legal damages is concerned, it is immaterial whether the injury has led to a definite infection with tuberculosis or has awakened an old latent process. Thiem reports the case of a mason who fell and fractured his skull. On examination at this time his lungs were found to be normal. He recovered from the injury, but during convalescence developed a pleurisy which turned out to be tuberculous. The same author reports the case of another man who was struck in the side by a heavy box. Six months later he had a hemorrhage and developed consumption. Recently the Supreme Court of Minnesota gave damages for the death of a man from pulmonary tuberculosis who had suffered a severe accident eight months prior to his death. He was then 43 years old, in perfect health according to a good medical evidence, weighed 188 pounds and was a big, robust man. He received a severe head injury with considerable shock and concussion, as a result of which he was confined to the hospital for one month. He continued to lose steadily in health and strength and soon developed consumption, from which he died eight months later. The defense argued that pulmonary tuberculosis often attacks men of robust health and kills them. The Court, however, believed that the evidence was sufficient to sustain a finding that the injuries suffered were the proximate cause of this man's death; he further stated that, although these questions are often obscured by technical learning, they are usually questions of fact for the jury, to be solved by the exercise of good common sense in the consideration of the evidence in each particular case. Chief Justice Knowlton states the difficulty in these cases thus: "The question is often difficult to decide whether an unusual condition is the active, efficient and proximate cause of a subsequent event, or is only a producer of conditions which open the door to another cause which directly and actively produces the result." No definite ruling can be laid down according to which these cases can be decided. They are bound to occur more and more frequently, as the public gains knowledge in regard to this disease.—*Boston Medical and Surgical Journal*, January 16, 1913.

# Book Reviews.

Les Produits Biologiques Medicinaux. By P. Byla et R. Delaunay. Price 10 francs. Paris: Société D'Éditions Scientifiques et Médicales, 1912.

This book is published by the manufacturers of biological products, Messeurs Byla and Delaunay. The book gives information as regards the method of preparing the different gland extracts, as well as their therapeutic uses.

The Business of Mining. A Brief Non-Technical Exposition of the Principles Involved in the Profitable Operation of Mines. By Arthur J. Hoskin, M.E., Consulting and General Mining Engineer; Western Editor "Mines and Minerals." Formerly Professor of Mining, Colorado School of Mines; Member, American Institute of Mining Engineers; Member, Colorado Scientific Society. With 16 Full Page Illustrations and one Chart. Price $1.50. Philadelphia and London: J. H. Lippincott and Company, 1912.

This monograph on mining dealing with the subject from the historical, scientific and above all from the business point of view is timely. As the author points out, a large number of persons speculate in mines with no knowledge of the matter whatever and the book has been written with the view of explaining mining mainly from the business aspect. This is a laudable endeavor and doubtless Mr. Hoskins has provided some extremely valuable information, but whether the speculating, or even the investing, public will profit from the facts set down so clearly in this book is another question altogether.

Preventable Cancer. A Statistical Research. By Rollo Russell. Price $1.50. London, New York, Bombay and Calcutta: Longmans, Green and Co., 1912.

The author of this book presents some general evidence that cancer is most prevalent among people who live on a rich diet with meat and eat their food while it is hot. He also believes that alcohol, tobacco, tea, and coffee are etiological factors. Authorities for the evidence that the clay pipe, soot, the Kangri, coal tar, and arsenic may cause cancer are cited.

The book is not a scientific work; where valuable evidence might have been collected, as, for instance, in regard to the prevalence of cancer among the Doukhobors the author has relied upon general reports. As to one of his sources of information in this country the author is evidently ignorant of the large proprietary interests that were really speaking.

An Essay on Hasheesh. Including Observations and Experiments. By Victor Robinson. Contributing Editor Medical Review of Reviews; Pharmaceutical Chemist, Columbia University; Member of the American Chemical Society; Author of "Pathfinders in Medicine." Price 50 cents. New York: Medical Review of Reviews, 1912.

This work shows great promise from the literary standpoint. It is written in glowing language quite in keeping with the subject and the Far East. From the scientific point of view it is of no particular value, although the history, chemistry, and therapeutical merits of the drug are well described. It is an interesting volume and gives rise to the hope that Mr. Robinson in the future may do good and enduring literary work.

The Principles of Hygiene. A Practical Manual for Students, Physicians, and Health-Officers. By D. H. Bergey, A.M., M.D. First Assistant, Laboratory of Hygiene, and Assistant Professor of Bacteriology, University of Pennsylvania. Illustrated. Fourth Edition. Thoroughly Revised. Price $3.00. Philadelphia and London W. B. Saunders Company, 1912.

At the present day Hygiene is one of the most important branches of medical science, in that it aims at preventing disease instead of curing it. The book under review is, so far as it goes, one of the best of the smaller works on the subject, and for the medical student and practising physician it will prove very satisfactory. In spite of the title-page, we think that health officers will require one or more works which deal with the various branches of the subject in a much more exhaustive manner. The volume contains chapters on: Air, ventilation, heating, water, and water-supply, removal and disposal of sewage, garbage disposal, food and dieting, exercise, clothing, personal hygiene, industrial hygiene, school hygiene, military hygiene, naval hygiene, soil, habitations, vital causes of disease, disinfection, quarantine, and vital statistics. The information given is well selected and well arranged; and the book has been written by one who is acquainted with the conditions which prevail and appliances which are found in this country. Many manuals of hygiene, good in themselves, lose much of their value because they describe conditions and apparatus which are foreign, and often unknown to the reader; the present work is a notable exception.

Principles of Human Physiology. By Ernest H. Starling, M.D. (Lond.), F.R.C.P., F.R.S., Hon. M.D. (Breslau); Jodrell Professor of Physiology in University College, London. Price $5.00. Philadelphia and New York: Lea & Febiger, 1912.

The extensive and complex developments of modern medicine require of the student to-day, more than of the student of a decade ago, a comprehensive knowledge of physiology. The pivot of medical studies is found in the elucidation of morbid changes in function to a greater extent than in the mere recognition of pathological changes. Physiology in turn has sought to broaden its foundations and has drawn freely upon the auxiliary sciences of physics and chemistry. The complete textbook of physiology must therefore interpret for the student the important bearings of organic chemistry and of physical science so far as they relate to biological phenomena. In the present volume the author has surveyed the entire domain of modern physiology and has indicated its relation to the frontier subjects of physics, chemistry, and clinical medicine. Within one volume of 1423 pages he has included without the sacrifice of necessary detail and of clearness practically all that is known about physiology at the present day. The philosophical conceptions that lie at the root of this science are not neglected. The deep insight by the author and his facility of expression are perceived in the following statement: "We have no reason for asserting that, in the course of research, we may not finally succeed in describing vital phenomena in the 'conceptual shorthand' used by the physicist involving his ideal world of ether, atom, and molecule. At present we are far from such a consummation. The principle of adaptation is the only formula which will include all the phenomena of living beings, and it is difficult to see how this principle can be expressed by means of the concepts of the physicist." This book is really one for the advanced student or at any rate for one who has already studied physiology in a more elementary textbook. Book Ideals with general physiology, discussing the various properties of protoplasm, and the material and energetic bases of the body. The chemistry of the fats, carbohydrates, and proteins and the mechanism of organic synthesis are carefully presented with the aid of many graphic formulæ. The problems of osmosis, the properties of colloids, and allied subjects are discussed in satisfying detail. Book II deals with the mechanisms of movement and sensation, and Book III with the mechanisms of nutrition. The important recent contributions to the knowledge of the nervous system, as the subject of the autonomic nervous system, sensory localization, cerebellar function, etc., are all carefully discussed. The important advances in the knowledge of the physiology of the circulation, which knowledge lies at the basis of the latest clinical applications of the graphic methods of studying circulatory derangements, are accorded in this book an amount of space commensurate with their importance. The general practitioner who would seek to supplement whatever knowledge of physiology he was able to assimilate in his student days will find this book one which will not only furnish the newer facts, but will coordinate them with his clinical experience.

Aids to Tropical Hygiene. By Major R. J. Blackham, D.P.H. (London), R.A.M.C. Knight of Grace of the Order of St. John; of the Middle Temple, Barrister-at-law; Kaiser-I-Hind Medallist for Public Service in India; Divisional Sanitary Officer, First Division, Indian Army; Fellow of the Royal Institute of Public Health; Member of the Royal Sanitary Institute. Price $1.25. New York: William Wood & Company, 1912.

There are but few works on Tropical Hygiene, and the subject is generally neglected in the textbooks on Hygiene. The present work is small but of distinct value. The author discusses the following subjects: climate, air and ventilation, water and water supplies, food and feeding, clothing, sites, soils and houses, disposal of refuse, disposal of the dead, insects and disease, animal parasites, prevention of malaria, and disinfectants and disinfection. A useful list of references is added, and there are serviceable tables of (1) Tropical diseases with preventive measures, and (2) The distinctive characters of the more important species of flies. All who are interested in tropical diseases and conditions will find the present volume a useful addition to their library.

# Society Reports.

## WESTERN SURGICAL ASSOCIATION.

*Twenty-Second Annual Meeting, Held at Cincinnati, Ohio, December 20 and 21, 1912.*

THE PRESIDENT, DR. L. L. MCARTHUR OF CHICAGO, IN THE CHAIR.

(*Concluded from page* 181.)

**Intussusception.**—Dr. S. C. BEEBE of David City, Neb., said the recurrence of intussusception shortly after its reduction had been sufficiently frequent to make it necessary that the operation performed include such a fixation of the bowel or shortening of its mesentery as would prevent recurrence at this site. Whatever might finally be demonstrated to be the actual cause of death in obstruction of the bowels, experience had shown that drainage of the stagnant fluid in the gut above the point of obstruction promoted the recovery of the patient. Advanced cases of intussusception formed no exception to this rule, and in them provision for such drainage must be made. Threading the gut on a glass tube introduced into it through an incision in its lumen was unclean, time consuming, and involved more visceral manipulation than was admissible in our ideal operation. The method of stitching into the gut a large rubber catheter with rows of pursestring sutures after the manner of a Senn gastrostomy, as repeatedly described by a former president of this association, was decidedly superior and its principle should be included. Important as this drainage might be, it was of still greater moment that gangrenous tissue should be removed from the field of absorption. When it was present, resection of the bowel must be done; and as it frequently existed in the irreducible invagination, whether or not it showed upon inspection, it followed that irreducible intussusceptions must always be excised and the expedient of anastomosing the gut above with that below the obstruction or of simple enterostomy must never be adopted. In his paper he described a technique which best met the indications. It was the adaptation of well known methods with some variations that had seemed of sufficient value in his own work to warrant their presentation.

Dr. DANIEL N. EISENDRATH of Chicago said anyone who had operated on a case of intussusception in an infant and had seen the degree of shock which these children had, knew that the thing that would give the highest mortality. Where it was impossible to pull the intestines apart, it was much better, if the child was in any degree of shock, to bring the intussuscepted part out through an abdominal incision, and do an enterostomy to tide the child over for two or three weeks, and then do resection at leisure when the child was in good condition.

Dr. CLIFFORD U. COLLINS of Peoria, Ill., said these cases should be operated on inside of twelve hours if we expected to decrease the mortality very much. The general practitioner must be educated to bring these cases to the surgeon sooner than he had been doing.

Dr. WILLIAM D. HAGGARD of Nashville said the contention of the essayist, that enterostomy was extremely valuable in these cases as an adjunct, was sound practice, and he thought, moreover, it was preferable to the use of Moynihan's long tube. Those who had used this tube knew that while it was theoretically excellent, it was difficult to thread it through a number of feet of distended intestine, and whenever one touched the intestine the peritoneum broke, so that the use of the appendix was particularly to be commended as a drainage route for enterostomy.

Dr. BEEDE, closing, said he was glad that Dr. Eisendrath had been able to save some of these children by enterostomy, and then later excising or resecting the bowel. He had not been able to find a record of any such case in the literature he had consulted. If such was the base, he would like to know it.

**President's Address: Transplantation of Tissues.**—Dr. L. L. MC ARTHUR of Chicago said that given the appropriate conditions, any tissue might be transplanted, the difficulties increasing with the vascularity rather than the complexity of the structure, those structures requiring the least circulation proving the more successfully grafted. He instanced fat, a tissue made up of a delicate living reticulum, stored with an enormously disproportionate amount of fatty globules. For its existence and maintenance, it required little else than plasma and asepsis under body conditions. Hence it could be transplanted free and in almost any bulk, provided these conditions be maintained. For this reason, we might now look to see the cavities in bones filled, instead of with Mosetig Moorhof's plug or Beck's paste, by pads of living fatty tissue taken elsewhere from the patient, as was recently demonstrated at Garre's clinic in Bonn; or, as the author had several times done, deposit such fatty tissue in areas heretofore treated by Gersuny's paraffin injections, it being particularly adapted to filling out those greater deformities not amenable to paraffin. He gave as an example the cosmetic filling out of the deformity left after a partial resection of the lower jaw. This had given him most gratifying results. Encouraged by the successful transplantation of this tissue, till recently considered so liable to slough, he had stolen elsewhere from the patient an envelope of fatty fascia to protect the musculospinal nerve just released from the callus of a humeral fracture, or a nerve trunk just sutured after resection for neurofibroma. Again, the hygroma that developed after Murphy's interposition of fatty fascia, need no longer be obtained from a pedunculated flap taken from the immediate neighborhood of the joint often at the sacrifice of structure essential to a good result and adding a complication to the operation, but might be secured elsewhere. For the ankylotic hip or knee, the operation could thus be remarkably simplified.

**An Experimental Study of the Therapy of Shock.**—Drs. M. G. SEELIG, J. TIERNEY and F. RODENBAUGH of St. Louis contributed a joint paper on this subject. It was attempted to check up the work of Professor Yandell Henderson on shock. Henderson's theory of shock was that this symptom-complex was due to a lack of carbon dioxide in the circulating blood. The essayists, therefore, attempted by direct methods to increase the $CO_2$ blood content. For this purpose they introduced intravenously into shocked dogs varying quantities of a molecular (8.4 per cent.) solution of sodium bicarbonate. Sodium bicarbonate was dissociated into sodium carbonate and carbon dioxide by three elements in the blood, viz., serum albumin, hemoglobin, and acid sodic phosphate. The quantity of the solution used varied from 5 c.c. to 200 c.c., and the condition of the dogs varied from normal to a state of profound shock. An analysis of the results obtained in a large series of experiments on dogs showed that sodium bicarbonate was a powerful blood pressure raising salt, the rise in blood pressure persisting over a fairly long period of time. Likewise, this salt markedly increased the amplitude of the heart beat, though it had no appreciably constant effect upon the rate of the heart beat. The depth of respiration was always increased by the infusion, though the rate of respiration varied within wide limits. After it had been definitely determined that the above noted effects were constant, it was attempted to determine by what mechanism the rise of pressure was occasioned. To this end the bulk of fluid injected, the alkalinity of the sodium bicarbonate, the hypertonicity of the solution, and the free $CO_2$ resultant from the injection were studied separately. The authors reached the conclusion that bulk and hypertonicity played a minor role in raising the blood pressure; that alkalinity played a more important part, but that it seemed most probable that some additional undiscovered factor was responsible for the pronounced rise. Whatever this factor was, it seemed to act directly on the heart, even when this organ was isolated from its central nervous system relationships. The authors were not able to attribute any of the pressure effect of the infusions to the increased $CO_2$ content of the blood.

**Ostitis Fibrosa Cystica.**—Dr. JAMES F. PERCY of Galesburg, Ill., reported a case, with lantern demonstration, on which he had operated, and reviewed the literature. He said the course of the disease was persistently chronic. The osteoporosis, due to the persevering destructive action of the osteoclastic cells, weakened the bony framework to the point of deformity, suffering, and uselessness. It was this that explained the infrequency of pathological fracture which, according to Pfeiffer, occurred twenty times in his report of 49 cases. Curiously, this author (Pfeiffer) advised against operative measures because the disease was essentially not malignant. He would use the knife only for the purpose of diagnosis or where the pain was excessive. Voit, however, insisted upon radical treatment. The case reported by the author had been greatly relieved by the operative procedures followed. The pain had disappeared and the sense of insecurity and weakness in and about the hip had disappeared. The deformity had not been overcome, but this could be left to subsequent surgical treatment if it seemed wise to attempt it. The most important problem was the method to be pursued in this case where the iliac bone, especially the right, was so extensively involved. This question must also arise when the disease occurred in the small bones of the foot and hand or in the skull. It was necessary to remember that the disease always involved the endosteum and not the periosteum, and this fundamental pathological fact must be the basis of

interference to arrest the destructive process. The indications for operation could safely be enumerated as follows: (1) Interference with function and the development of deformity. (2) Pressure upon important vessels, nerves, and organs. (3) Prevention of pathological fracture from a large osteoporosis resulting from the disease. When the pernicious character of the pathology was considered, especially in relation to the ruinous work of the osteoclastic cells, a permanent recovery could be obtained in no other way than by radical operation.

**Ventral Tumors of the Sacrum.**—Dr. Arthur Aver Law of Minneapolis, after discussing the embryology of these growths, reviewing the literature, and reporting a case, presented the following summary and conclusions: The large tumor showed a loose, rapidly growing connective tissue stroma in which were nests of embryonic cells growing in syncytium-like masses and suggesting malignancy in their manner of growth and appearance. Areas of hemorrhage, necrosis, and calcareous degeneration demonstrated the atypical character of the tissue, its rapid development, and imperfect blood supply. The smaller tumor suggested a neuroma in its general characteristics, although neuroglia fibrils had not yet been demonstrated. That the tumor sprang from some misplaced remnants of the terminal portions of the neural tube seemed a logical conclusion. That portions of it had developed abnormal powers of proliferation and showed signs of malignancy change, while other portions had in an imperfect manner reproduced the adult type of nerve tissue, was the only explanation which apparently explained these rather widely diversified tumor masses.

Dr. E. S. Judd of Rochester, Minn., stated that since Dr. Law had called his attention to this interesting case, he had reviewed the cases of the Mayos of retroperitoneal tumors and found in the list five cases that, in some respects, were similar to Dr. Law's case. The five cases were operated upon, three by W. J. Mayo, one by C. H. Mayo, and one by himself. The first patient was a woman, 44 years of age, who came to the hospital complaining of constipation and bleeding from hemorrhoids. A tumor the size of an orange could be felt per vagina and rectum; it came to the midline in the pelvis and extended to the right side. Examination otherwise was negative. Wassermann was negative. Operation November 21, 1912. Abdominal incision. Retroperitoneal tumor apparently growing from the right wall of the sacrum, about the second foramen, bulging out as a tumor the size of an orange under the periosteum and deep fascia, lying between the upper rectum and lower sigmoid and cervix, completely filling that portion of the pelvis. Abdomen opened; posterior peritoneum and floor of the pelvis to the right opened; tumor enucleated and most of the capsule removed. The tumor resembled hypernephroma. It appeared to be broken down, opening in the sacrum the size of the end of the finger near the third foramen through which the pedicle of the tumor seemed to go. Report of pathologist: Inflammatory. The second patient was Mrs. H. L. N., aged 57. She came June 4, 1912, for a rectal tumor; incontinence; six months ago hemorrhage from bowel; pain and rectal spasm frequently since; bowels gradually became obstructed, and now she is almost unable to get bowel movements. Lost weight, ten pounds; had radiating pains from sacral area to thighs and vagina. Examination disclosed a tumor posterior to the rectum. Operation: Posterior incision at the lower end of the sacrum and all of coccyx removed which was involved in the tumor. Tumor, the size of an apple, was apparently a sarcoma of the anterior surface of the lower end of the sacrum and upper coccyx. Third, fourth and fifth sacral vertebræ were involved. Tumor had perforated posteriorly and a large amount of soft sarcomatous tissue had escaped into the hollow of the sacrum. Report of pathologist: Giant-celled sarcoma. The three other cases were detailed by Dr. Judd.

Dr. Jabez N. Jackson of Kansas City, Mo., had had opportunity to observe two cases of ventral tumor of the sacrum of two different types. One was very interesting from the fact that the woman was under observation primarily for the purpose of cesarean section. She was 26 years of age. She had a tumor behind the rectum which was recognized by a country doctor some time before pregnancy and he warned her at the time not to permit herself to become pregnant. She was in labor forty-eight hours, but as things did not progress as they should, he at once brought her to Kansas City for operation. Cesarean section was done, followed by hysterectomy. The tumor presented itself a little to the left of the rectum, and it turned to the right slightly as well as anteriorly. In splitting the peritoneum the tumor was enucleated without practically any bleeding, and after enucleation it showed no apparent point of attachment whatsoever, except when shelled out the whole anterior surface of the formation of the sacrum was revealed, but it was enucleated without the presence of a pedicle or without definite knowledge as to its original point of development. It was a single solitary cyst which on pathological examination was found to be a simple cyst without a determination of what elements could have been the original focus. The second case that came under observation was a man, 45 years of age, who complained of pain in the lower pelvis, and particularly about the rectum during defecation, and of some pains which radiated down the limb, until his physician thought there might be some trouble about the hip joint. On rectal examination a tumor could be outlined near the lower end of the rectum about the size of a small orange. In operating he made an incision laterally, but upon entering the tumor found the fluid sort of cystic, possibly purulent. It seemed some inflammatory secondary condition had taken place, and the wall was so friable it was impossible to make any enucleation whatsoever. He removed certain portions of it and packed for drainage.

**How Much Pathology Can the Gall-Bladder Have and Still Functionate?**—Dr. B. B. Davis of Omaha pointed out that certain conditions found often at operation were bound to destroy normal function for all time. Undue narrowing or complete obliteration of the lumen of the cystic duct made a continuation of the function of the gall-bladder impossible. If the obstruction was incomplete, bile would slowly flow in, but the process of emptying was so retarded that stagnation, which always invited infection, was sure to occur sooner or later. Although safe and efficient delivery of the bile through the hepatic and common ducts into the duodenum could be carried on by the other forces without its aid, it could be done more effectually and with less liability to damming up of the current when accelerated by a perfectly functionating gall-bladder. He would, therefore, be the last to recommend the indiscriminate removal of this organ. It ought never to be done unless so badly damaged that its function would be permanently lost. When one met with so many patients whose gall-bladders had been drained, but who were not cured, there seemed to be something still to be said. The fact stood out that drainage operations were not followed by the uniformly good results that ought to be obtained. Patients too often felt a regret that they did not keep away from the surgeons. It was his opinion that many of the unfavorable results might be avoided by a more thoughtful consideration of the capacity of the gall-bladder with which one was dealing to carry on its functions.

Dr. Charles H. Mayo of Rochester, Minn., said that very often we took out the gall-bladder when we should leave it. When a patient complained afterward and came back for a secondary operation, he said the gall-bladder ought to have been removed in the first operation. In about one-half of such cases we would find the gall-bladder ought to have been removed primarily. In the other half we would find an enormous mass of adhesions; we would find the duodenum adherent to the liver and scarred; the pylorus adherent to the gall-bladder and margin of the liver. We would say, "Well, I wish I had done something to prevent those adhesions," not thinking at the time that those were the adhesions that made secondary symptoms; that that particular gall-bladder was not diseased, but that adhesions occurred on account of bad surgery and of not utilizing fat, as suggested by our president (Dr. McArthur) in his address to prevent them.

**Pyelotomy for the Removal of Renal Calculi.**—Dr. Daniel N. Eisendrath of Chicago said the method of exposure and of bringing the kidney into the wound did not differ in any manner from that employed for nephrotomy. In order to perform a pyelotomy, one must be able to lay the kidney completely on its anterior surface, either upon the skin edges of the incision, or, at least, to be able to gain access to the posterior aspect of the renal pelvis without much tension on the renal vessels. If the pedicle was short, or there was much fixation of the kidney by adhesions, pyelotomy was out of the question, and too much traction under such conditions would surely result in disaster. In the majority of cases, however, pyelotomy was possible if the incision was not too small and the wound edges well retracted. Through the pyelotomy incision one could introduce the index finger and palpate the entire interior of the pelvis. The extraction of the calculi lying loose in an ampulla or one of the main divisions of a bifid pelvis was very simple. The advantages of pyelotomy were: (1) It was the simplest and least serious method for the removal of calculi lodged at the junction of the ureter and renal pelvis, or for small or moderately large calculi, either free in the

ampullary type of pelvis or in a primary calyx of a bifid or trifid type of pelves. (2) It was the best method for calculi in one or both pelves of a horseshoe kidney, as well as in bilateral cases, especially in those complicated by anuria. (3) Hemorrhage was far less likely to occur either during or after pyelotomy than in nephrotomy. (4) Bimanual palpation of the pelvis and parenchyma lessened the chance of overlooking a calculus. (5) Pyelotomy could be much more rapidly done, and the period of convalescence was much shorter than in nephrotomy. It was seldom more than ten to fourteen days, in his experience. The disadvantages of pyelotomy were: (1) Pyelotomy was contraindicated when the kidney was fixed by adhesions or the pedicle was short, or if extensive infection be present. (2) A fistula might persist after operation. (3) The danger of bleeding either during or after operation from the peripelvic vessels, although slight, must always be borne in mind. Pyelotomy was destined to become an active competitor with nephrectomy in the majority of cases.

Dr. William Jepson of Sioux City, Iowa, said that nine years ago he nearly lost a patient from continuous hemorrhage, which began some eight or nine days after nephrotomy. The hemorrhage ceased from time to time, but reappeared, until it was five or six weeks before danger was passed and his fear was allayed. This was followed a year and a half afterward by another patient, a young man, who died. He had never done a nephrectomy since that time for the purpose of removing a calculus in the kidney. He immediately perfected himself in the technique of operating through the pelvis itself for the removal of stone from the ureter or kidney, if accessible.

Dr. A. W. Abbott of Minneapolis said that one of the greatest arguments in favor of the position taken by the essayist was the irreparable damage done to the kidney by any incision into it. If we incised it, we had to sew it up. It had been shown that the injury by the connective tissue formation after incision and fatty degeneration that followed, also the same process that took place after suture of the kidney, should make it inadvisable to cut the kidney unless we had to.

**Observations on the Radical Cure of Inguinal Hernia.**—Dr. William Hessert of Chicago said our choice of operative technique should be determined by the anatomical findings. We had all seen cases in which it would have been impossible to perform a typical Bassini operation. Owing to the absence of the rectus, the former could not be brought down to Poupart's ligament, without creating too much tension. Either the muscle would tear at once or necrosis would occur later. Attention had been called to the fact that this inner portion of the canal should be especially fortified against recurrence. The technique which was best adapted to meet the requirements of these cases was the imbrication modification of Andrews. By bringing down to Poupart's ligament the edge of the fascia of the external oblique and as much of the muscle as possible, a very firm covering for this weak area was secured; this weak area was further fortified by the overlapping of the lower flap of fascia. In cases where the triangle was especially large, good tecnique would be found of service. By incising the edge of the rectus sheath, the fibers were exposed and a portion of the muscle could be brought down and sutured to Poupart's ligament, thus supplanting the conjoined tendon which was absent. The operation could be completed by following the Andrews technique. Conclusions: (1) The conjoined tendon was deficient or absent more commonly than had been generally taught. (2) This anomaly supplied an important predisposing factor in the development of direct hernias, and probably played a certain rôle, though a minor one, in the etiology of oblique hernias. (3) The presence of this defect precluded the performance of the Bassini operation as a routine, except in children. (4) The Andrews imbrication method had fulfilled the indications regardless whether the tendon was present or absent. The Bloodgood transposition of the rectus was an excellent aid when required.

Dr. C. M. Nicholson of St. Louis stated that in probably five cases out of ten that had come under his observation of hernia there had been a separation of the aponeurosis of the external oblique, and the intercolumnar fibers could be seen plainly a distance of an inch and a half. Every one who had dealt with inguinal hernia had noticed this. If the trouble were due in a large percentage of cases to the absence of any structure, it seemed surprising that clinically we got such excellent results by doing some modification of the Bassini operation, probably infolding in accordance with Ferguson's suggestion. He felt very sure that in something over five hundred herniotomies, not strangulated or complicated, but simple hernias, he had seen but three recurrences, and these were all due to a condition other than that described by the essayist. All three were in children and were due to a lack of development of the external oblique muscle. He had therefore come to the conclusion that the cause of hernia was not due to a preformed sac except in that variety of hernia which was congenital, that is, irrespective of the time it formed.

Dr. A. E. Benjamin of Minneapolis thought the essayist was right in his conclusion that the conjoined tendon was very often absent. It had been his practice in these cases to transplant the fat; after tying it off he passed it back of the transversalis and brought it up high, so as to have the intraabdominal pressure in the sac after that come against the transversalis muscle. In that way we took off the strain, but the fibers of the transversalis and internal oblique he had brought underneath Poupart's ligament with modified Halsted mattress suture, bringing that out through the skin. This frequently was done because at the time he first developed the operation he did not have suitable catgut or suture material which he could rely on. At the present time this did not obtain.

Dr. F. Gregory Connell of Oshkosh, Wis., agreed as to the necessity of operating on the other side where there was a slight bulging, even though there were no demonstrable hernia, as he had had the same experience as others of a subsequent hernia following the repair of the side where it had developed. He had met with the absence of the conjoined tendon. In these cases there was a direct hernia of the deep epigastric vessels formed under the internal margin; the internal ring, while not bulging, was below. We might call it a ventral hernia rather than inguinal, as it was not inguinal in the strict sense of the word in that it did not come through the inguinal canal.

Dr. M. L. Harris of Chicago stated that as the result of personal observations he was fully convinced that all hernias that developed in the active period of life were congenital in origin. By this he meant they were due to congenital defects. He would exclude the hernias—the simple hernias—that developed in the aged, coming at a period of life when there was general atrophy and wasting of the tissues, as in old people with chronic bronchitis, emphysema, enlarged prostates, etc. Every hernia developing in the inguinal region during the active period of life had its origin in a congenital defect. He had had the opportunity of operating on several so-called traumatic hernias that appeared soon after an injury or a fall. In every one of these he had found congenital sacs, and there had never been any difficulty in determining after the operation that the sac was of congenital origin. The absence of the conjoined tendon was a material factor in the causation of hernias, as was pointed out in an article which appeared two years ago from Russia. It was discovered that during the last Russian war an unusually large number of the conscripts constantly appeared with ruptures, who were otherwise healthy young men, who ought to be sent and were capable of going into service, but who escaped by reason of having ruptures. The authorities investigated the matter and after getting confessions from some of the subjects, it was discovered there was a regular place where these young men went and had these hernias produced, and they were produced by a young doctor who had discovered that by passing his finger up into the external ring and forcibly tearing the conjoined tendon from its insertion, these young men would all develop hernias within a short time. That demonstrated clearly the influence of the conjoined tendon in producing hernia.

Dr. Daniel N. Eisendrath of Chicago, said that his observation of this class of cases had taught him that it was possible to make a diagnosis before operation, so he made it a rule to ask the patient to let him operate on both sides, even though on the other side no hernia had appeared, because sooner or later a hernia would appear on the other side, and the patient might feel that there had been some negligence on the part of the surgeon in having operated on one side only, because he could not associate that with the fact that he had continually weak muscles there. In addition to the fact oftentimes of lack of development of the conjoined tendon or atrophy of the fibers of the internal oblique, this condition was found when the conjoined tendon was fairly well developed. It was found in stout individuals who had attenuated oblique muscles, where there was practically only white muscle and lying between the white fibers we found quite a lot of fat. What good did it do to perform the old Bassini operation? To do so would invite disaster. If one sutured this attenuated internal oblique, this weak or imperfect conjoined tendon,

to Poupart's ligament and put the cord on top of it, he would have trouble or a recurrence, no matter whether he transplanted it or not. Those who were acquainted with the operation had adopted as a routine the Wyllys Andrews method of imbrication of the muscles because it had a tremendous advantage.

Dr. Hessert, in closing, said he did not claim that the absence of the conjoined tendon was the cause of hernia, except as having a certain bearing on the formation of direct inguinal hernias. He thought Dr. Harris put the matter tersely when he said that the hernias which occurred during young adult life were based on certain developmental defects. It was either a congenital hernial sac or some developmental defect, such as absence of the conjoined tendon or peritoneal muscles or fascia in this region. Added to that, it was essential to have the predisposing factors which brought down the hernia.

**Spinal Anesthesia.**—Dr. J. W. Andrews of Mankato, Minn. said ether was the best anesthetic to use. For local anesthesia cocaine was the best anesthetic. Cocaine was likewise the best spinal anesthetic. The solution used should be weak, one-half of one per cent. to one per cent. was strong enough. The lumbar was the regional point of election for spinal puncture. Under spinal anesthesia the tissues would not bear pulling or tearing. Pulling or tearing or roughly handling living tissue was bad surgery. Busy surgeons could not use spinal anesthesia. The dangers of spinal anesthesia were practically none, and the advantages very few.

Dr. James E. Moore of Minneapolis said the chief objection to spinal anesthesia was its danger. The most recent case in which death occurred on the table following spinal anesthesia was that which occurred at the meeting of the Clinical Congress, of Surgeons in New York City. Spinal anesthesia was first suggested by Corning, was first put into practice by Bier in 1898, who abandoned it for a time on account of the mortality connected with it. In 1903-4 stovain and novocain were introduced. At the present time novocain was the favorite drug for this purpose. In the University of Minnesota they used no other drug for local anesthesia or for spinal anesthesia. So far, they had had no mortality and no uncomfortable symptoms. They had used it locally for hernia operations and the like. He had used it more in private practice than in the University Hospital.

Dr. M. L. Harris of Chicago differed with the essayist that the element of time was not a factor in the ill-effects of an anesthetic. One could kill any animal by keeping him under an anesthetic for a certain length of time, and if the quantity was the same the animal would inevitably die. The changes were in direct proportion to the time in which the anesthetic was given.

Dr. H. G. Wetherill of Denver said the time had come when chloroform as a general anesthetic ought to be abandoned. Our present knowledge of the late poisonous effects of chloroform, as originally cited by Guthrie in London and Stiles of Edinburgh, and by Bevan and Favill in this country, had played an active part in taking chloroform out of our hospitals as a general anesthetic, as it should do, because it was known, notwithstanding the enormous danger of chloroform in comparison with ether and other anesthetics, it produced death two or three days afterward.

Dr. A. W. Abbott of Minneapolis recounted some experiments in reference to ether as compared with nitrous oxide, and said that for two or three years he had kept records of these cases in reference particularly to the results on the kidneys. In many instances he had been able to secure the urine in from ten to fifteen minutes after ether anesthesia was begun, and he found a slight albuminuria was produced. It was not 1 per cent. or 10 per cent., but every one of the cases had had a slight albuminuria. As a general thing, casts began to show in the urine taken in the course of an hour. His experience in that line directly corresponded with what Dr. Harris had said, namely, that an amount of injury to the kidney followed in proportion to the length of time one gave the anesthetic. The longer you gave it, the greater the amount of albumin, and the more abundant the casts. He had the records of 100 of these anesthesias, and he believed what he had stated was absolutely correct. This applied in a minor degree to nitrous oxide with oxygen, which he had used a great deal. It was followed by the same disturbances. Whatever anesthetic we used, we were going to have kidney complications, and that was a good reason why we should get through with an operation as quickly as possible and not keep the patients under the anesthetic any longer than possible.

Dr. S. C. Beede of David City, Neb., said there was nothing that succeeded like success. He believed in ether anesthesia because it gave the best results. Yesterday he stated that there were only two cases reported in the literature at his command of the successful treatment of irreducible invagination in a child under one year of age. Conversation with a number of members since then had confirmed that statement. Both of those cases were operated under spinal anesthesia. While spinal anesthesia was limited, it still had a field.

Dr. L. L. McArthur of Chicago in speaking of the toxicity of novocain and cocaine, said he would like to call attention to the fact that it took seven times as much novocain per kilogram of body weight to kill as it did cocaine.

So far as their anesthetic properties were concerned, they were practically identical. Novocain was now the drug universally used on the Continent and in England, instead of cocaine, on the basis of its toxicity.

**Final Results in Hypophyseal Surgery.**—Dr. Allen B. Kanavel of Chicago reported a case of typical Froelich type of hypophyseal disease, suffering with marked signs of intracranial pressure; operated upon two years ago; infranasal route, cyst evacuated, recovery, result of feeding pituitary gland over two years. The indications for operation in cases of hypophyseal disease might be classified as absolute and relative. Operation was absolutely indicated in those cases in which the tumor immediately jeopardized the life of the individual or was causing progressive blindness. It was relatively demanded when because of perverted, or increased, or decreased secretion, the wellbeing and, ultimately, the life of the individual was threatened. Therefore, if the tumor was growing rapidly or had grown to a large size, or if a cyst had suddenly filled, we would have pressure symptoms both locally and generally that would imperatively demand intervention. As the safety of the operation increased, the field of the relative demand would be broadened. Acromegaly should be treated more conservatively, particularly since many of the cases had passed over into the stage of hypopituitarism. As the safety of surgical procedures grew, operation should be attempted in the early stages of the disease before the growth had left the sella. The more complicated and late cases and those with atypical signs should be treated medically until the results in the typical cases were well established.

**Pregnancy in the Rudimentary Cornu of Uterus Unicornus and Report of a Case with a Full Term Fetus.**—Dr. E. P. Quain of Bismarck, N. D., said a correct diagnosis of pregnancy in the rudimentary cornu had been made in but a few instances before operation. The usual diagnosis made was extrauterine pregnancy. In view of the similarity of treatment, this mistake was not serious. To call this abnormality a uterine fibroid or an ovarian cyst, as had been done a few times, might have dire results. The important diagnostic points to be determined were: (1) Whether or not a pregnancy existed. (2) Whether the uterus unicornis could be palpated as distinct from the tumor, but attached to it by a pedicle opposite the internal os. (3) Whether intermittent contractions in the rudimentary cyst wall were palpable as in a normal pregnant uterus. (4) A possible palpation of the round ligament external to the tumor; this would eliminate tubal pregnancy. The treatment was that of ectopic pregnancy in general. The removal of the gravid rudimentary cornu would be indicated when diagnosed, whether the fetus was dead or alive. If diagnosed in the seventh or eighth month, the question might be raised whether it would be advisable to wait in an attempt to save the child. It was to be remembered that a pregnancy in a rudimentary cornu was less liable to rupture than were the other varieties of ectopic pregnancy. But no temporizing measures should be practised unless the patient be put to bed and within instant reach of the operating room. At operation it would seem wrong to exercise a sterilizing technique on the normal tube. Normal pregnancies had followed in uteri unicornes after removal of the rudimentary side, and no instance of tubal pregnancy was recorded.

**The Growth, the Death, and the Regeneration of Bone.**—Dr. H. G. Wetherill of Denver spoke of the radical differences of opinion which characterized the teaching of the theory of the growth and regeneration of bone. Macewen not only denied to the periosteum an osteogenetic function, but assigned to it a function of a diametrically opposite character, that chiefly of a "limiting membrane" for the osteoblasts to prevent their overgrowth into the soft tissues. As an example of the eccentric growth of bone through rents in its periosteal envelope in an untreated fracture, the author presented a specimen from a young elk he killed in Colorado in 1892. The unconfined osteoblasts distributed through the periosteal rent by the constant use of the animal's leg had produced a large amount of exuberant callus in addition to that required to

unite the fragments. Another striking example was the formation of a bony wall for a false aneurysm where the ends of the fractured bone had at once lacerated the limiting periosteum and a large artery. The osteoblasts swept from the bone through the rent and carried by the blood stream to the side wall of the aneurysm formed plates or plaques of bone upon it, though they be entirely disassociated from both the bone and the periosteum. The well-known importance of the epiphysis and of the plates of the cartilage lying between the epiphysis and the diaphysis in their relation to the growth of the diaphysis was experimentally confirmed, as was also the protection afforded by this cartilage against the diffusion of infection. Viewed from Macewen's standpoint and in his light, the author found the two typical cases, quoted in his paper, confirming his other observations under similar conditions, and he was quite ready to accept the new doctrine and adapt himself to it in its actual application to the day's work.

**Coexisting Infection and Sarcoma of the Thyroid.**—Dr. Miles F. Porter of Ft. Wayne, Ind., said sarcoma of the thyroid was very rare, and sarcoma complicated with infection still more rare. Only 11 cases were reported in the United States to June, 1906. A previous history of goiter existed in 53 per cent. of cases of malignant thyroid (carcinoma and sarcoma), and in half of these for more than ten years. Two-thirds of the cases were in women, and 53 per cent. of the cases were between forty and sixty years old. Metastasis of sarcoma of the thyroid by way of the lymphatics was not infrequent. Four additional cases of sarcoma were reported from the literature and one in the author's own practice in a boy of eleven years with metastasis in cervical lymphatics. The spindle cell variety was the most common. No other case complicated by infection was found in the literature. The neighboring bones were frequent seats of metastasis. It was difficult to differentiate between the round cell variety and lymphosarcoma. Complete destruction of the gland tissue by sarcoma was quite common. Sudden growth of an old goiter, especially if accompanied with pain, was significant of malignant invasion, as was hemorrhage into a goiter. Careful examination of all goiters removed would develop the fact that malignancy was more frequent in the thyroid than it was now supposed to be.

**Observations on German Surgery.**—Dr. Charles H. Mayo of Rochester, Minn., said the twenty-five university centers in Germany might be classified according to equipment, wealth, numbers of students and large centers of population. Their hospitals were large, usually constructed on the pavilion system. Their beds numbered from hundreds to a few thousands. The hospitals were all well equipped with modern Röntgen apparatus, and this department of diagnostic work seemed to have been developed to a wonderful degree of perfection. Much care and thought had been given to the arrangement of the operating rooms, and especially to the lighting system, several of them having the powerful arc focused on to mirrors. In all the operating rooms were a great many assistants, and after the essential details had been carried out by the master surgeon, the case was passed on to the first, second, and third assistant surgeon who completed the work. The surgeons were exceedingly well prepared for their work. They had served long apprenticeships, and they all took pride in speaking of the well-known men with whom they had studied and served as assistants. The excellent team work of those engaged in diagnosis in all departments was worthy of note, each diagnostician following his cases to the operating table to witness the conditions found upon exploration. German surgeons had a great liking for reconstructive work, and much could be learned in a study of their bone, joint, and plastic work. In several clinics he witnessed the entire transplantation of joints immediately upon their removal from amputated limbs to replace ankylosed ones. Various forms of local anesthetics were used and the method had been highly perfected. German surgery might be spoken of as a "school of surgery," and had more or less dominated the surgery of the world. The German surgeon was most efficient. While his surgery had originally developed almost entirely from the laboratory side, the clinical work to-day had certainly advanced remarkably. The methods of hospital support and control had created a system which was adapted to the masses, in contrast to the system in this country which considered individuals. Although many of their methods were not adapted to our institutions and people, they were well worth a visit from any of our surgeons since there was much that could be learned from them.

**The Present Status of the Radical Abdominal Operation for Cancer of the Uterus.**—Dr. Reuben Peterson of Ann Arbor, Mich., stated that the chief reason for the unpopularity in this country of the radical abdominal operation for uterine cancer was its high primary mortality. Surgeons were not accustomed in these days of highly perfected technique to a primary mortality of from 20 to 50 per cent., which would be a fair estimate of the mortality of the radical abdominal operation, if all reported and unreported cases could be collected. Surgeons necessarily must be content with such a high mortality in emergency operations, neglected cases where the knife held out the only hope of saving life. Under such circumstances the surgeon consoled himself with the thought that without operation it was sure death for the patient within a few hours or days, and that every life saved was so much gain. The present status of the radical operation for cancer of the uterus in this country was directly dependent upon early diagnosis of the disease. Unless patients could be operated on earlier, we had about reached the limit of what could be accomplished by the operation, except as the primary and end results might be improved somewhat as the technical skill of the individual operators increased. The main points to be emphasized were: the poor results obtained in the operative treatment of carcinoma; the possibility of improving the results of such treatment by earlier recognition of the disease by both the profession and the laity; the necessity of inaugurating a campaign of education on carcinoma through committees appointed from the various national, surgical, and gynecological societies, and finally the desirability of having this society be the pioneer in this movement.

**Some Phases in the Modern Treatment of Fractures.**—Dr. W. D. Haines of Cincinnati, said that given a competent surgeon with good hospital facilities, those fractures which might be reached in which the ends of the broken bone could not be kept in proper relation to allow union to take place with a reasonable assurance of overcoming marked deformity and the restoration of function, should be subjected to some type of open method in their management; that fractures occurring in the long bones should, after complete reduction, show crepitus as a final test for freedom from interposed soft structures; in the absence of this confirmatory evidence, union will depend upon examination through an incision and removal of the interposing structures: that all open fractures, after proper cleansing, should be freely exposed, and reduced and retained by appropriate mechanical means. Finally, that ununited or old fractures in which union had taken place at a faulty angle, inducing pain and loss of function, should be subjected to operation.

The following papers were also read: "Fracture of the Carpal Scaphoid," by Dr. Joseph F. Smith, Wausau, Wisconsin; "Temporo-Maxillary Ankylosis," by Dr. D. W. Basham, Wichita, Kansas; "The Application of a Protected Gauze Pack Used as a Quarantine in Certain Abdominal Operations," by Dr. R. C. Coffee, Portland, Oregon; "Two Cases of Obstruction of the Bowels from Unusual Causes," by Dr. Clifford U. Collins, Peoria, Illinois; "Boning of the Thoracic Precardial Wall in Certain Affections of the Heart," by Dr. John E. Summers, Omaha, Nebraska; "Bilateral Cerebral Abscess Involving the Motor Areas," by Dr. Warren D. Dennis, St. Paul, Minnesota; "A Method of Bone Plating," by Dr. Carl E. Black, Jacksonville, Illinois.

**Officers.**—The following officers were elected: *President*, Dr. Jabez N. Jackson, Kansas City, Mo.; *Vice-Presidents*, Dr. Joseph Rilus Eastman, Indianapolis, and Dr. M. G. Seelig, St. Louis; *Secretary-Treasurer*, Dr. Arthur T. Mann, Minneapolis.

St. Louis, Missouri, was selected as the place for holding the next meeting; time, December, 1913.

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## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held January 16, 1913.*

The President, Dr. William M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Orthopedic Surgery.

**An Exposition of the Abduction Treatment of Fracture of the Neck of the Femur.**—Dr. Royal Whitman read this paper which was illustrated with lantern slides of *x*-rays. In speaking of the anatomical basis of the treatment he stated that the normal inclination of the head of the femur of about 130 degrees permitted a range of abduction of the hip of about 40 to 50 degrees, a movement that was directly checked by contact of the upper border of the neck with the projecting rim of the acetabulum. During the movement of abduction the head of the femur glided downward until its lower third emerged from the acetabulum and distended the lower part of the capsule. At

the limit of abduction, under anesthesia, the base of the neck was in contact with the rim of the acetabulum, the tissues covering the trochanter were apposed to the tissues covering the pelvis, and the capsule was tense. It should be evident that any change from the normal, either in the forward, backward, or upward inclination of the femoral neck, must induce a corresponding change in function. Shortening of the neck or loss of its normal angle would, for example, limit the range of abduction, and this limitation was almost always present after fracture of the neck of the femur treated in the conventional manner, even when union had been attained. The treatment should be adapted to the anatomy of the part. In complete fracture of the neck of the femur, the limb was usually shortened, somewhat fixed, rotated outward, and often slightly abducted. Thus, the outer fragment was turned forward, displaced upward, and usually lay on a lower plane than the head. As one had no control over the inner fragment, contact could be assured only by adjusting the outer fragment to it. This was accomplished as follows: The patient having been anesthetized was lifted to a sacral support, the shoulders resting on a box of equal height, while the extended limbs were supported by two assistants. The assistant holding the uninjured limb then abducted it to the anatomical limit to illustrate the normal range, which varied in different individuals and at different ages, and incidentally to fix the pelvis by direct bony contact. The operator first flexed the thigh to disengage the fragments. The assistant then extended the limb and by manual traction overcame the shortening, as demonstrated by the relation of the trochanter to Nélaton's line, and by measurement. He then, under traction, abducted it to the normal limit, the operator meanwhile lifting the thigh from beneath. Inspection should now show absolute correspondence between the extended limbs, as to abduction, rotation, length and position of the trochanters. In this attitude the injured part was securely fixed by a plaster spica extending from the nipples to the toes. The advantages of the abduction treatment should be obvious to one who understood the mechanism of the joint. In abduction the outer fragment was turned downward and inward toward the inner fragment. In full abduction under traction, the capsule was made tense, and being attached about each fragment this tension would align them. At the limit of abduction the trochanter was brought into contact with the tissues covering the pelvis, or if the fracture was near the head the outer fragment was engaged beneath the rim of the acetabulum, thus providing a direct check against displacement. In abduction the direction of the muscles was so changed that the contraction could no longer displace the fragments. Finally, the attitude of abduction, which was so directly opposed to that indicative of deformity and symptomatic of weakness, was the attitude most favorable to restoration of function when support was removed. Attention was especially called to the sequence in manipulation. 1. Disengagement of the fragments. 2. Complete reduction of shortening by traction in the line of the body. 3. Abduction to a degree that should make the capsule tense. 4. Fixation in complete extension. So-called impacted fractures might be treated in the manner described, the deformity being readily reduced by manual traction. True impaction was very rare; what passed for impaction was usually a fracture with but slight displacement. Another type of so-called impaction was the incomplete fracture. Such and similar deformities might easily be corrected by the aid of slight leverage, as follows: Normal abduction must be limited in direct proportion to the lessened or lost angle. Thus the range of abduction under anesthesia was checked by contact of the neck with the upper border of the acetabulum, a contact that fixed it. Now under steady traction aided by downward pressure on the projecting trochanter the limb was still further abducted, with the aim of overcoming or lessening the deformity. In other words, the deformed neck lay in a plane representing normal abduction while the shaft was in the median line. The shaft was therefore abducted until the normal relation was restored, at least to the degree that was practical. When this was accomplished, a plaster spica was immediately applied. This method, in which secure support was at once applied, was both safe and effective. The reduction, or at least the lessening of deformity, should be as much a matter of routine in the treatment of this as of any other fracture, since otherwise, shortening, insecurity, and discomforts were practically inevitable even when union was attained. In the classical but unusual cases of true impaction, corrective manipulations might not be indicated. In the treatment of every variety of this fracture a thorough understanding of the principles of treatment and common sense in their application were in the absence of skill and experience essential. Dr. Whitman referred to various unfavorable criticisms that had been made of this abduction treatment and showed that they were mostly founded on misconceptions. The treatment of this fracture by the abduction method was more difficult than any of the routine surgical methods because of the lack of training and experience on the part of those who undertook it. The intelligent novice, however, who understood the principles of the method and had sufficient knowledge of typographical anatomy to apply it correctly could treat the fracture with a better prospect of success than by any of the time-honored methods with which he might be familiar. When this fracture occurred in young subjects it was usually one of the neck or of the epiphyseal junction. In either form the abduction method was essential. In the reduction of deformity in the epiphyseal form the manipulations of abduction and inward rotation must be forcible and persistent. If the case was one of long standing with forward and upward displacement of the neck in relation to the head, an open operation was required to properly oppose the fragments. The abduction method was not only the most efficient, but the most comfortable and the least dangerous of any treatment of this injury. It relieved pain, permitted change of posture, notably elevation of the head in bed, and was the best preventive of bed sores. The period of fixation varied from eight to twelve weeks or even longer. Sometimes the plaster was changed in six weeks for a shorter one. When the plaster was removed, massage and passive movements were of great value, but the only essential manipulation was to draw the limb outward to the extreme limit of abduction several times a day. Weight bearing should not be permitted until sufficient time had elapsed to permit firm union, confirmed, if possible, by *x*-ray pictures, nor until the essential movements at the hip were relatively free and under control.

Dr. F. J. Cotton of Boston, Mass. (by invitation), gave a lantern slide demonstration of the *x*-rays showing push and pull tests under treatment—artificial impaction with abduction. He believed that this abduction treatment was the proper method and the one that they should use after a very careful study of the method. He did not know exactly what the results were but there were certainly a great many of good ones, especially veracoxa cases occurring in adults. As Dr. Ochsner of Chicago had stated, there was no one method which would cure all of these cases. In a great many of these cases the impaction was not solid enough. During the past six years Dr. Cotton had had four cases of impaction, and in all of these the fractured part was entirely loose and was due to the trauma. The first *x*-ray pictures would not always tell one accurately what the condition absolutely was. They showed what happened in the pull up and the pull down when there was a fibrous union. They were saying that they obtained good results in these cases of fracture of the neck of the femur when, in fact, they were not good results. In these cases of abduction *per se* the question was how were they going to obviate the deformity. Many were now using this method, but it should not in his opinion be used as a routine method. In none of these cases should any routine method be used. Dr. Cotton said that he had been interested in the question of the unimpacted fractures of the neck of the femur, the cases that had been so successfully handled by the technique of Dr. Whitman. He had placed many of these cases in abduction, and they got well. With regard to the impacted fractures there was no doubt but that they were in the majority and there were only one or two things that should be done. One was to carry the limb well out and the other was to break up the impaction and keep the limb in proper position by means of a Buck's extension apparatus with the perineal sling. Abduction, particularly in elderly people with fracture of the neck of the femur and with a stiffened joint, played a great part. The abduction should be forced to the normal. Dr. Cotton showed some *x*-ray pictures bearing on this subject.

Dr. John B. Roberts of Philadelphia said they had been compelled to modify their methods of treating fractures, first those of the skull, radius, and humerus, and now those of the femur. Impaction was probably often green stick fracture, untorn periosteum, or entangled fragments. Non-union was probably often due to forcible and unwise tearing apart of fragments in order to make a diagnosis followed by inefficient coaptation or failure in maintaining coaptation. Hence there was a fear of setting the fracture lest handling break up impaction or partial fixation. This was admitted to be justifiable when the surgeon realized his inefficiency to get good results or for other reasons, as lack of efficient nursing or deficiency in the patient's curative processes. After reviewing the opinions of Scudder, Cotton, and Whitman in regard to the treatment of frac-

tures of the femur, the speaker said that the checking of abduction by the neck striking the upper rim of the acetabulum and the trochanter tissues striking the iliac tissues might not be the anatomical explanation but it seemed to him likely to be the correct explanation of the result achieved. As asserted, steadying of the replaced fragments might not be due to the tension of the capsule from abduction and traction and the altered direction of the iliopsoas muscle and the other muscles by full abduction might not lessen their tendency to displace the fragments but it seemed to him probably the correct theory. Whitman believed that "impaction" might be partial fracture and that abduction to reduce deformity and to secure fixation was not breaking up impaction. The retention of some control over the limb passed for impaction; it might be only entanglement, or preservation of the periosteum without tearing, or, in the young, "green stick" break, or some contact of the fragments as in diastasis. Whitman believed that loss of the femoral angle on which abduction depended was of great importance and that abduction to restore the femoral angle was not breaking up impaction necessarily, but that it restored the anatomical relations of the fragments in complete fractures and in those which were incomplete obtained apposition of the fragments. It corrected deformity and fixed the fragment in good position until union could occur. The shortening might be due to ascent of the trochanter without separation of the fragments. Dr. Roberts said it appeared to him to resemble the condition in classic fracture of the lower end of the radius which was so long misunderstood and which until this day caused that injury to be badly treated. To break up that impaction and entanglement was long considered unwise; hence, deformity, pain, and stiffness were the results for most patients sustaining the ordinary fracture of the radius near the wrist with backward displacement. Whitman believed that fixation of the apposed fragments by posterior support was absolutely essential; this was obtainable by a gypsum spica encasement of the leg, thigh, and pelvis up to the nipple line, holding the limb in a normal abduction. He also believed that the benefit of this method should be given to all ages if any local treatment was practicable in the case. He said that pain was relieved and that the patient could be moved without discomfort; bed-sores were not to be feared, and the head of the bed might be raised to relieve congestion of the lungs. Dr. Roberts believed that Dr. Whitman was right and was convinced that there was an analogy between this fracture and those of the shoulders, the wrist, and the elbow. The troubles came from imperfect anatomical reduction. After reduction, retention of apposition was not followed by such pain, discomfort, and functional loss as were formerly considered inherent in the injury. Whitman believed that skill and experience were needed at the outset in the application of the method, but there was compensation in that the surgeon controlled the situation at the start and need not depend on the extraneous aid of nurses and assistants week after week as was essential in the usual traction methods. Moreover, there was the stimulation of hope and belief in a good prognosis in the mind of patient and surgeon. Whitman believed that especially in transverse fractures union proceeded very slowly and from the interior of the bone rather than by external callus; hence accuracy of adjustment was essential and the weak part must be long supported. Weight bearing should be postponed for at least six months and not permitted until freedom of motion and muscular control showed that repair was complete. A modified hip splint that would permit motion without weight bearing was useful as an adjunct in treatment. The abduction method should be tried, as Whitman said, because it was an attempt to deserve success by trying for more ideal results than those with which they had been satisfied heretofore. The speaker believed that the method was based on true surgical principles, and that when it was checked by the *x*-ray before, during, and after its adaptation to the patient it was satisfactory in many cases. Open operation might be demanded when fragments were so displaced as to be irreducible by ordinary manipulations or when it was necessary to freshen and appose the fragments when non-union had occurred. There might also be cases where one would hesitate to employ this method because of danger from the ether or other causes.

Dr. John B. Walker said that a number of years ago he had his attention called to Dr. Whitman's treatment of fractures of the neck of the femur and five years ago he made a study of 100 of these cases at Bellevue Hospital and his findings corresponded with those of Scudder and Whitman. A great deal had been said regarding the giving of anesthetics to these patients but he thought that reduction could be made with the employment of any anesthetic. The reduction was made much easier when some form of traction apparatus was used. He was sure that there were many cases of unimpacted fracture of the neck of the femur admitted to the hospital in which the results were very unsatisfactory. An *x*-ray taken twenty-four hours later often showed the fragments to be in poor position. During the past year Dr. Walker had seen five cases where the radiogram taken six months after the injury showed that there was non-union. Out of about 116 cases examined, 40 per cent. were under 55 years of age. Dr. Walker had had three cases under fifteen years of age and five cases under 25 years of age. He now had a patient 65 years old who weighed 170 pounds; he came to the hospital with a fracture of the neck of the femur and a traction apparatus was applied without the use of any anesthetic. He was confident that at Bellevue Hospital the use of the Whitman method gave good results. In his cases there had been no mortality. Dr. Walker referred to a paper on "Operative Treatment of Fractures," which he had read before the American Surgical Association in 1912, in which he hoped that an increasing number of members would become more interested in developing the operative treatment for selected cases of fractures. Two weeks later at a meeting of the American Medical Association Mr. Lane presented a paper upon the same subject. These papers brought out very little discussion, the general sentiment prevailing that the average results after fracture were satisfactory and that operations were unnecessary. In 1911, at Denver, President Harte called especial attention to this subject and stated his belief that careful observation of the end results after fracture justified the conclusion that these results were not as satisfactory as was generally believed, and that members of the profession were not fully utilizing all the advantages in their power to secure the best results in fractures; therefore he advised the operative treatment for selected cases, especially in fractures of the femur. In 1912 the literature was full of references to operations. During the last two years surgeons had become convinced that the results must be improved. In fractures, the rapidity of union was proportional to the accuracy of reduction and the retention of fragments; delayed union was very largely due to faulty adjustment. Plating the fragments did not increase the nutrition, but it brought the fragments into early intimate contact. As their experience grew they would be able to select, after a study of the *x*-ray plates, those cases in which operation was indicated.

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### Philadelphia Neurological Society.

At a stated meeting held January 24 Dr. Alfred Gordon presented "A Case with Cerebellar Symptoms." The patient was a man, about thirty-five years old, who, following an illness thought to be paratyphoid fever, presented tremor in the right upper and then in the right lower extremity, followed later by the same phenomenon on the left side. After a time ataxia was observed in the extremities, with a tendency to double up toward the right and to fall in the same direction. There was complaint of headache, with beginning optic atrophy in each eye. The reflexes were preserved.

Drs. C. W. Burr and G. B. Crow presented "A Man Showing Mirror Writing and Curious Associated Movements Without Palsy." The patient was a sailor in the navy about twenty-two years old who, after difficult birth, was thought to present some want of power in the use of both hands only. As time went on, it was found that movements performed with either hand were almost exactly duplicated by the opposite member. There was no peculiarity in the use of the lower extremities. The patient was ambidextrous, and in writing, normally with the right hand, he had learned to use also his left hand simultaneously for the same purpose, but with this, writing in mirror fashion. He could also write alone with the left hand, but always in mirror fashion only. There was no wasting or deformity, no palsy or sensory disturbance, the reflexes were preserved, the lower extremities were unaffected and intelligence was normal. The disorder was thought to be due to a cerebral anomaly in consequence of which movements of the hands on both sides of the body were controlled in equal degree by impulses from each side of the brain.

Dr. Wm. G. Spiller exhibited "A Case of Friedreich's Ataxia." The patient was a young man about nineteen years old, who from an early period of life had exhibited weakness in the lower extremities, with ataxia, but with exaggerated knee-jerks. In order to bring out the knee-jerks the patient sat with the thighs and legs considerably separated and the soles of the feet upon the floor, but making pressure on the ball of the foot, and at the same

time invoking reinforcement by means of movements in the hands. The gait was ataxic and there was slight incoordination of movement in the upper extremities. Also there was some want of control of the bladder, an unusual symptom in this disease. There was no history of syphilis.

Drs. G. L. Howell and S. D. W. Ludlum presented a communication entitled "Blood-pressure in Nervous Affections." They reported a number of cases in which observation showed that failure of the blood-pressure to rise with change from the recumbent to the erect posture was indicative of an atonic state and of a failure on the part of the patient to improve. Also this sign was used as a guide in treatment, as it was found that more physical activity could be undertaken in proportion as the blood-pressure rose with the change in posture.

Dr. J. H. W. Rhein delivered "The Presidential Address," in the course of which he discussed the relations of the neurologist to mental disease. He pointed out the need for psychopathic institutes in which diseases of the mind could be studied clinically along modern lines and anatomical studies and original investigation carried on, with the hope of shedding light upon the causes and mechanism of insanity, especially with a view to its prevention and cure.

The following officers were elected for the ensuing year: *President*, Dr. George E. Price; *Secretary*, Dr. Samuel Leopold; *Treasurer*, Dr. S. D. W. Ludlum.

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Pathological Society of Philadelphia.

At a stated meeting held January 23 Dr. John Reichel and Dr. M. J. Harkins presented a communication entitled "Peptotoxin Production by the Bacillus of Contagious Abortion of Cattle." By treating animals with cultures of the bacillus of contagious abortion grown in beef broth to which peptone was added they succeeded in inducing a condition of hypersensitiveness or anaphylaxis.

Dr. Arthur H. Hopkins reported "Two Instances of Chronic Family Jaundice." In each of the families there were several individuals who from early life presented a varying degree of icterus, with occasional exacerbations, without signs of biliary obstruction, but with evidences of diminished resistance on the part of the red corpuscles of the blood.

Dr. Penn Gaskell Skillern, Jr., presented a communication entitled "Syphilis in the Etiology of Osteitis Fibrosa." He reported a case of this disorder in a girl at about the age of puberty in whom, in addition to the usual signs, a positive reaction to the Wassermann test was present. Improvement took place under treatment with mercury and iodide. In cases studied histologically the lesions resemble those induced by syphilis. Accordingly, Dr. Skillern formulated the conclusion that fibrous osteitis is a form of late hereditary syphilis.

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# State Medical Licensing Boards.

## STATE MEDICAL EXAMINATION QUESTIONS.

Arkansas State Medical Board.

*May 14 and 15, 1912.*

*(Continued from page 275.)*

BACTERIOLOGY.

1. Give the morphology of bacteria.
2. State briefly a method for obtaining a pure culture.
3. What is the difference between active and passive immunity? Give example of each.
4. What are the protective agencies by which the body protects itself against the harmful effects of pathogenic bacteria?
5. What is the difference between an antitoxin and a bacterial vaccine?
6. What are opsonins and what do you understand by the opsonic index?
7. Describe the *Bacillus typhosus* and state briefly how you would differentiate it from the *Bacillus coli communis*.
8. Describe in detail the process of finding tubercle bacilli in urine.
9. In what disease may the pneumococcus be the etiologic factor?
10. Differentiate between the gonococcus and the *Diplococcus intracellularis meningitidis*.

THEORY AND PRACTICE OF MEDICINE.

1. What complication is likely to appear in the last part of the second week and all of the third week of typhoid fever?
2. Give (a) physical signs of pneumonia; (b) treatment for first stage of lobar penumonia.
3. (a) At what age do patients usually suffer from catarrhal stomatitis? (b) Give treatment.
4. Give etiology and treatment of acute gonorrhea.
5. Give cause and treatment of epidemic cerebrospinal meningitis, carefully giving detailed technic of treatment.
6. Outline the normal liver dulness.
7. Give diagnosis and treatment of measles.
8. (a) Give the causes of malaria. (b) Name two forms of malarial fever and give the varieties of organisms found in each form. (c) Give treatment for estivo-autumnal form of malarial fever.
9. Give causes, diagnosis, and treatment of rickets.
10. What would you do for pulmonary hemorrhage occurring in the course of tuberculosis?

OBSTETRICS.

1. How would you determine the death of a fetus *in utero?*
2. Define abortion, miscarriage, premature labor.
3. Name possible sources of puerperal hemorrhages and treatment of each.
4. Define menstruation; age at which it appears; the name given to this period of woman's life; the age at which it ceases.
5. Give the normal duration of pregnancy. Give limit of duration from a medicolegal standpoint.
6. How frequently must you examine the urine during pregnancy? To what particular normal or abnormal constituents would you pay attention in this urinary examination? In the presence of general edema with albumin and casts in urine, which increased in spite of proper treatment, what symptom would lead you to bring on artificial labor?
7. What would lead you to suspect extra-uterine pregnancy?
8. How would you determine that a dead infant had been born alive?
9. In breech presentations describe the different methods of delivering the after-coming head.
10. What are the dangers of traction on the child and placenta?

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## ANSWERS.

BACTERIOLOGY.

1. *According to form, bacteria may be classified* as: (1) *Cocci*, which are round or oval, and may appear singly, in pairs, in chains, or in groups; example—streptococcus of erysipelas. (2) *Bacilli*, which are rod shaped, with the longer sides parallel and the short ends either straight, rounded, or concave; example—bacillus of tetanus. (3) *Spirilla*, which are spiral; example—spirillum of relapsing fever.

2. *To make a pure culture:* "All that is necessary is to inoculate the liquefied gelatin with the mixture of bacteria, and after thorough agitation so as to separate each cell from its neighbor, to pour the liquid on to the surface of a sterile plate. The gelatin now solidifies and imprisons, as it were, the separated cells. Each of these now multiplies and reproduces its kind; eventually, in the course of a day or two, a small growth, perhaps of the size of a small pinhead, appears. This is called a colony, and since it is derived from a single cell it constitutes a pure culture. Such is the principle of the dilution method for obtaining pure cultures. The isolation once accomplished, all that is necessary is to transplant the colony to sterile culture media so as to keep up the growth." (*Reference Handbook of the Medical Sciences.*)

3. "*Active immunity* follows an attack of a certain disease and secures immunity for that alone, which may last but a short time (erysipelas, cholera) or for a longer period (typhoid), or even for life (variola); or it follows inoculation of a virus weaker than necessary to cause the typical disease (vaccination against smallpox); or it follows inoculation by bacterial products apart from the organisms themselves.

"*Passive immunity* is the term applied to the effect of a serum derived from an immunized animal and injected into one not immune, the theory being that in the blood of the former there is a chemical substance (antitoxin) which neutralizes the toxin in the donating animal, or otherwise it would show symptoms, and by borrowing its serum for the infected animal the toxin is opposed by the

alien antitoxin."—*Example:* Diphtheria. (From Thayer's *Pathology.)*

4. *Protective agencies against pathogenic bacteria* are: The acidity of the gastric juice, the urine, and the vaginal secretion; the bactericidal action of the blood and lymph; the action of the leucocytes and phagocytes; the alkalinity of the blood; and the agglutinating action of the blood.

5. *Difference between an antitoxin and a bacterial vaccine:* "The antitoxic sera act directly upon the poison secreted by the living bacterial cell and neutralize its toxic property, while the bacteriolytic sera affect the bacteria themselves and destroy them or paralyze their action. Since the antibacterial sera are without effect upon the formed toxin, they are mainly useful in practice as a means of protecting against the bacterial invasion, while the antitoxic sera (*e.g.* diphtheria) may be employed to combat an infection already in progress. Broadly speaking, the latter are curative, the former protective." (Jordan's *Bacteriology.*)

6. *Opsonin* is that quality of a serum which makes a microorganism more susceptible to phagocytosis.

The *opsonic index* is the relative amount of opsonins in a serum, as compared with the normal standard. It is obtained by dividing the average number of bacteria taken up by a leucocyte under the influence of a given serum by the average number taken up by a leucocyte under the influence of a standard normal serum.

7. *Bacillus typhosus* is a rod-shaped organism, with rounded ends, is from 2 to 4 microns in length and about three-fourths of a micron in breadth; it does not stain by Gram's method, but stains with all the anilin dyes; it has flagella, no spores, is aërobic and facultative anaërobic, and is motile.

*To distinguish the typhoid bacillus from the colon bacillus:* (1) On gelatin plates, the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media, which contain sugar; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and coagulates milk within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol; the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum; the colon bacillus does not.

8. *To find tubercle bacilli in the urine:* The urine should be drawn by a catheter, with the utmost regard to cleanliness and asepsis (so as to exclude the smegma bacillus). The urine thus obtained must be centrifuged for a long time. Some of the sediment is placed on a slide with a small quantity of egg albumin; it is covered with some carbolfuchsin, and allowed to steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin, red rods, while all other bacteria will appear blue.

9. The *pneumococcus* may be the etiological factor of lobar pneumonia, pleurisy, pericarditis, endocarditis, meningitis, enteritis, and conjunctivitis.

10. The *gonococcus* does not usually grow on the ordinary culture media, whereas the *Diplococcus intracellularis meningitidis* usually does.

### THEORY AND PRACTICE OF MEDICINE.

1. Perforation of the intestine.

2. *Physical signs of lobar pneumonia: "Inspection* reveals during the first stage deficient movement of the affected side, due to pain. The apex-beat is normal in situation, and the interspaces do not bulge. In the second stage the healthy side rises normally, the affected side lagging behind. If both lower lobes are impervious to air the diaphragm cannot descend and the epigastrium does not project during inspiration, the breathing being conducted by the upper part of the chest (superior costal respiration). *Palpation* during the first stage shows the vocal fremitus to be more distinct than normal, especially over the diseased portions. In the second stage the vocal fremitus is markedly exaggerated, except in those rare instances of occlusion of the bronchi by secretion. The cardiac impulse is felt in the normal position. *Percussion*: In the first stage the percussion note is slightly impaired at times, having a hollow or tympanitic quality. In the second stage there is dullness over the affected parts, with an increased sense of resistance. Over unaffected adjoining areas the resonance is increased (Skoda's resonance).

*Auscultation.*—In the first stage there is heard over the affected part a feeble vesicular murmur, associated with the true vesicular or crepitant (crackling) râle, heard at the end of inspiration only. In the second stage there is harsh, high-pitched, bronchial respiration, at times resembling a to and fro metallic sound, except in those rare instances in which the bronchi are more or less filled with secretion. Bronchophony, or distinctly transmitted voice, is present and at times pectoriloquy, or distinct transmission of articulated sounds, may be heard. In the third stage the breathing changes from bronchial to bronchovesicular and the crepitant râle (crepitation redux) returns. As resolution proceeds the breath sounds are associated with large and small moist and bubbling râles." (Hughes' *Practice of Medicine.*)

*Treatment:* There is no routine treatment. The patient should be put to bed in a well-ventilated room; milk diet, and fractional doses of calomel followed by a saline should be administered. Symptoms are treated as they arise.

3. *Catarrhal stomatitis* is most common during infancy and childhood. Treatment consists in the removal of the cause, attention to the diet, and cleanliness of the mouth. The mouth should be washed out with cold water, or Dobell's solution, or a solution of boric acid or borax. In severe cases a solution of silver nitrate (two to five grains to the ounce) may be necessary.

4. *Gonorrhœa* is caused by infection with the *Diplococcus gonorrhœæ.*

*Treatment:* Support the penis and testicles with a bandage; avoid violent exercise, alcoholics, and all sexual excitement; drink plenty of water; avoid spicy foods; urethral irrigation of hot corrosive sublimate solution, 1:20,000, or of warm potassium permanganate solution, 1:4,000.

5. Epidemic cerebrospinal meningitis is caused by the *Diplococcus intracellularis meningitidis.* Treatment consists of rest in bed and the administration of anti-meningitic serum; for details of this latter, see THERAPEUTICS, question 10. Liquid but nourishing diet is necessary; and cold compresses may be applied to the head and spine.

6. The outlines of liver dullness are shown in Hutchinson and Rainey's table:

| | | Middle Line | Mammillary Line | Midaxillary Line | Scapular Line |
|---|---|---|---|---|---|
| Upper limit.. | Deep dullness | ..... | Fourth space | Seventh space | Ninth space |
| | Superficial dullness | Blends with heart dullness | Sixth rib | Eighth rib | Tenth rib |
| Lower limit..... | | Hand's breadth below base of xiphoid | Costal margin or somewhat above or below it | Tenth space | Blends with kidney dullness |

7. Measles is diagnosed by its gradual onset, nasal catarrh, Koplik's spots, papular eruption on fourth day, and branny desquamation. *Treatment* consists in rest in bed, isolation, protection from bright light, a diaphoretic and mild laxative, cold sponging, and inunction with vaseline; tonics are required during convalescence.

8. Malaria is caused by the *Plasmodium malariæ.* The tertian variety is caused by the *Plasmodium vivax,* and the estivoautumnal variety by the *Plasmodium præcox. Treatment of the estivoautumnal variety* demands rest in bed, and the administration of quinine sulphate (5 grains every 4 hours for a week); this is then reduced to about 2 grain doses for several weeks. Mosquitos must be exterminated or kept out of the house.

9. *Rickets* is a disease of young children characterized by nutritional changes, deformities of the bones, weakness of the muscles and ligaments, and various nervous disorders. Heredity, faulty hygiene, and improper feeding are etiological factors of importance.

*Symptoms:* The early symptoms may be very mild, but in severe cases restless sleep, profuse sweating of the head, digestive and nervous disturbances, and perhaps slight fever are present. The bones soften and enlarge at their articulations. Dentition is delayed and the fontanels remain open. The appetite is capricious, constipation is marked and may alternate with diarrhea, and the abdomen is enlarged and tympanitic. The affection predisposes to

inflammation of the various mucous membranes, and various deformities are liable to result from the changes in the bones. The course of the disease is chronic, although marked improvement takes place after proper treatment has been instituted.

*Treatment* consists largely of fresh air, sunlight, daily bathing and proper feeding. Cod-liver oil (gtt. 10 to 3i), syrup of the lactophosphate of lime (3½), syrup of the iodide of iron (gtt., 2), and similar remedies may be administered. Sweating may be controlled by atropine (gr. 1/800-1/200). Small doses of calomel and soda are beneficial in gastrointestinal disturbances. Deformities may be prevented by postural methods, friction, massage, and the avoidance of exertion. (Pocket *Cyclopedia.*)

10. *Pulmonary hemorrhage in tuberculosis.* "If there is more than a mere trace of blood in the sputum the patient should be put to bed and given cracked ice, which is to be allowed to melt slowly in the mouth from time to time. According to the severity of the case some or all of the following measures are to be adopted: An ice-bag may be applied to the precordium, and kept on constantly especially if there is an elevation of temperature. Tincture of aconite may be given in sufficient dosage to quiet the heart and to reduce and keep the pulse-rate to 60 a minute. Crystallized calcium chloride may be given in solution in doses of 15 grains every second hour, for about 4 days; it is then to be intermitted for 4 days or more, and used again, if need be. In the interval lead acetate, in doses not exceeding 5 grains, thrice daily for 3 days, may be given, to be followed for 2 days by aromatic sulphuric acid in doses of 30 drops, well diluted, thrice daily or oftener. Hydrastinin hydrochloride in doses of 1/24 to ⅛ grain hourly or less often is sometimes useful. Among drugs to be recommended are also the turpentine group, of which erigeron is among the best. Codeine may be given by the mouth in doses of from ⅛ to ½ grain every second hour or less often; or morphine acetate may be given by the mouth in doses of ⅛ grain every hour or two; or morphine sulphate hypodermically in dose sufficient to prevent coughing absolutely in severe cases. Atropine sulphate, from 1/2000 to 1/60 grain, may be given hypodermically at the beginning of the attack, and will often cut it short. The patient must be forbidden to speak, except in a labial whisper. Cold liquid food should be given in small quantities at intervals of about 2 hours. The bowels should be moved daily, without straining, by enema, glycerin suppository, or saline purge, as necessary. (Gould and Pyle's *Cyclopedia.*)

OBSTETRICS.

1. Symptoms of death of fetus are: cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements are absent, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time, crepitus of its cranial bones may be elicited.

2. *Abortion* is delivery of the product of conception before the twelfth week.

*Miscarriage* is delivery of the product of conception between the twelfth and twenty-eighth weeks.

*Premature birth* is delivery of the fetus between the twenty-eighth week and full term.

3. *Hemorrhages of the puerperium:* Caused by (1) retained secundines; (2) displaced uterus; (3) displaced thrombi; (4) fibroid tumors; (5) hypertrophied decidua; (6) carcinoma.

The treatment in general consists, first of all, in removing the cause.

"In the presence of actual hemorrhage the treatment varies according as the placenta is still within the uterus or has already been expelled. In the former case the uterus should at once be grasped through the abdominal wall and firmly kneaded. If firm contractions come on, all is well, but if the hemorrhage continues and the uterus relaxes as soon as the kneading is stopped, the placenta should be expressed by Credé's method; and if this cannot be accomplished and the patient's condition is alarming, manual removal may become necessary. . . . If the hemorrhage does not cease after the delivery of the placenta, the cause should be ascertained and suitable treatment instituted. Tears should be located and their edges brought together by sutures. On the other hand, if the hemorrhage is the result of the retention of placental tissue, the carefully disinfected hand should be carried up into the uterus in order to seek for and remove the retained cotyledon. . . . After separating the retained portion of the placenta the hand should not be withdrawn at once, but should be allowed to recede gradually as it is forced down by the contraction of the fundus. If the hemorrhage is due to atony the uterus should be vigorously kneaded, and from forty to sixty minims of ergot or of ergotol administered hypodermically. . . . If these measures are not attended with the desired result, a very hot intrauterine douche of several liters of sterile salt solution should be employed. . . . If the hemorrhage persists in spite of the douche, our only hope of controlling it is by packing the uterus tightly with sterile gauze. Before resorting to the use of the pack it is always advisable to palpate the interior of the uterus, as occasionally a portion of the placenta may have been retained, even though immediately after expulsion the organ may have apparently been entire." (Williams' *Obstetrics.*)

4. *Menstruation* is a periodic disturbance in the female characterized by a bloody mucous discharge from the uterine cavity; it lasts during the period of a woman's sexual activity, but is temporarily suspended during pregnancy and early lactation. It usually appears between the 13th and 15th year, at the period of puberty; it usually ceases in woman about 45 years of age, but the period is quite variable.

5. The normal duration of pregnancy is about 280 days. In this country there are no legal limits to the duration of pregnancy. Each case must be taken on its own merits, and the result will probably depend upon many factors, such as (1) the special conditions in each case; (2) the ascertained truthfulness or untruthfulness of the woman and her layers and witnesses; and (3) the gullibility or otherwise of the jury.

6. In the early part of pregnancy the urine should be examined every month or six weeks; so long as everything is normal this will suffice. Later, the examination should be more frequent, say every two weeks. Particular attention should be paid to the quantity of urea excreted, and to the presence of albumin and casts. When there is a diminished output of urea, or when albumin and casts are present the examination should be made twice a week or oftener.

The induction of artificial labor would be indicated (when other treatment failed) in the presence of: Continued headache; tinnitus aurium; dizziness; digestive, visual, and nervous disturbances; vomiting; vertigo; and convulsions.

7. "When extrauterine pregnancy exists there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterilty; nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy; pains are often very severe, with marked tenderness within the pelvis; such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating; this tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The *os uteri* is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 are *positive signs.*" (*American Textbook of Obstetrics.*)

8. If respiration has taken place the lungs will float on being put into water; if respiration has not taken place the lungs will sink. Further, the lungs before respiration are situated at the back of the thorax and do not fill the cavity; whereas, after respiration has occurred they fill the whole cavity.

9. The different methods of delivering the after-coming head are: Compression of the fundus uteri; the Prague method (traction on feet and shoulders); Martin's method traction on the jaw, with external pressure in the suprapubic region); Smellie's method (traction on jaw and shoulders); and forceps.

10. *Traction on the child* may cause abrasions, contusions, laceration of the skin, depression of the cranial bones, or even fracture of the same, laceration of the blood-vessels, or possibly temporary facial paralysis from injury to facial nerve.

*Traction on the placenta* tends to pull the placenta flatwise (like a button in a buttonhole) and thus obstructs its egress; it also tends to cause inversion of the uterus, to tear the cord or placenta, and to leave portions of the placenta behind.

(*To be concluded.*)

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## Original Articles.

### ADDITIONAL REMARKS ON CARDIOSPASM AND IDIOPATHIC DILATATION OF THE ESOPHAGUS.*

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IDIOPATHIC dilatation of the esophagus or dilatation without real stenosis is usually the result of a long persisting and repeatedly recurring cardiospasm. The proof that the latter is the main cause of the dilatation of the esophagus is apparent by its successful treatment by stretching the cardia.

The diagnosis of cardiospasm is ordinarily easier if accompanied already by esophageal dilatation. For the latter produces more marked symptoms.

Cardiospasm is by no means a rare occurrence. It is, however, frequently overlooked, because the subjective symptoms are taken for hysterical phenomena. About two years ago I published a paper on a similar subject.†

This article deals with my new experiences in this class of cases. In looking over my record of the last two years (1911 and 1912) I find that I have treated during this period 37 new cases of benign cardiospasm, of which 12 were accompanied by marked dilatation of the esophagus.

In the following I intend to describe out of this group three cases of severe cardiospasm with esophageal dilatation, two on account of the difficulty they presented in diagnosis, and one on account of almost insurmountable obstacles of treatment. I shall then add two cases of cardiospasm of a malignant type, due to neoplasms of the stomach, which I observed during the year 1912.

CASE I.—Cardiospasm with moderate dilatation of the esophagus. Dr. W. W., age 44, had a severe attack of pneumonia in 1904. In 1907 he had typhoid fever, in 1908 blood poisoning due to a decayed tooth. In this attack he lost three teeth and part of the lower jaw bone. Patient is about 5 feet 5½ inches tall and in 1908 his weight was 118 pounds stripped. At this time a cough was noticed, especially when eating. The pupils of his eyes were dilated in various ways. For instance the right pupil might be dilated for a week or more and then become normal, while the left pupil became dilated.

Vision normal, 25/20 in each eye. Accommodation normal. No fundus changes—no oculist consulted could give an explanation. Eserine 2 per cent. solution was used to contract the pupil. In April, 1911, a diagnosis of the trouble was made by me. An *x*-ray picture taken. At this time cough was very frequent. Eye symptoms were present, one pupil always being larger than the other. In the morning the right pupil might be large, in the evening small, while the left was small in the morning and large at night. After severe coughing the pupils might be the same size for a moment. Sometimes, not often, food was vomited two or three hours after eating, no signs of digestion having taken place in the vomited matter. After treatment for 3 or 4 months increase of weight began. At the end of 9 months the patient had increased 20 pounds in weight.

At this time, January, 1913, the patient weighs more than ever before—138 pounds without clothes. Cough is present though not so frequent or severe. Eye symptoms about gone. Once in a while if tired one pupil gets larger than the other. The influence

FIG. 1.—Dr. W. W. showing dilatation of the esophagus.

of smoke or wind on the eye is very marked. For instance a ride in the wind in an auto without goggles will make the pupil small in one eye and large in the other.

If in a room where men are smoking the same result takes place, showing that the eyes are very sensitive to irritation. A short time ago the patient was laid up in bed for a few days with a cold. Carlsbad salts were used every morning. During these days there was no cough. When patient is well he takes salts every two weeks. If he takes the salts on Monday morning he has more cough on Monday due to the irritation. On Tuesday he will cough possibly two or three times during the entire

*Read before the Section on Practice of Medicine at the New York Academy of Medicine on Feb. 18, 1913.

†Max Einhorn: "Stretching of the Cardia in the Treatment of Cardiospasm and Idiopathic Dilatation of the Esophagus," *American Journal of the Medical Sciences*, October, 1910.

day. Wednesday he will cough more than Tuesday but not so much as if salts had not been taken. After salts are taken not very much mucus is expectorated; at other times quite a great deal during the entire day. Lungs and heart normal. In the morning about three hours after eating a very hard fit of coughing takes place. This is not so marked now (January 19, 1913) as a year ago. General health fine, bowels always very regular.

April 25, 1911. Swallowing sound absent. Bougie 43 F. passes cardia and enters stomach. Dullness at the right manubrium sterni. Radiograph of esophagus (Fig. 1) taken by Dr. L. G. Cole confirms the diagnosis.

Case II.—Cardiospasm with moderate dilatation of the esophagus. December 17, 1912. John H., 31 years old, clerk, has always been well until seven months ago. He then had "gas on the chest," and toward the end of March food started to disagree with him. The rolls in the morning used to come up in his mouth. He had no pains. In July he had a hemorrhage. He did not, however, vomit the blood, but it simply welled up into his mouth. There was then a little pain on pressure in the chest over the sternum. Never had pain two or three hours after meals, nor immediately after eating. Bowels are somewhat constipated and need artificial help. He never had difficulty in swallowing. After this hemorrhage he would vomit every two or three days. He had been on a milk and egg diet for two months. He would raise considerable mucus while eating and right after. In March, 1912, he weighed 135 pounds. He has complained of pressure in the chest at night. Sometimes he would have to leave the table in order to vomit; at other times this would not occur. At times even liquid food could not be ingested. Patient would raise mucus. December 2 he weighed 118 pounds; on December 23 he weighed 132 pounds.

Case III.—September 23, 1911. Impermeable cardiospasm. Miss Jennie B., 27 years old, teacher.

Fig. 2.—Miss Jennie B. Showing dilatation of the esophagus.

Family and previous history unimportant. When she was about 16 years old she had the sensation as though her food was too dry. There was a choking feeling in her throat. She also suffered from nervous prostration. When she was 17 years old she began to vomit her food, but until the food came up she would choke violently. She never had to put her finger into her mouth to produce vomiting. Whenever she took any food she would always feel a fullness and a pressure in the thorax. If after taking food or water she would take a deep breath, set her chest muscles and compress the thorax, it felt to her as though the entrance to the stomach suddenly opened and she would immediately be relieved of the choking sensation. She coughed a great deal at night, particularly after partaking of a large supper. During her sleep chyme would run out of her mouth upon the pillow. Bowels were always constipated. During the last three years she lost about 36 pounds. Whenever she had any nervous strain her trouble would always be worse. She never had nausea; the food was simply regurgitated into the mouth and she ejected it.

Fig. 3.—Caspar G. Showing a dilated esophagus.

September 14, 1911, swallowing sound absent. Bougie (43 F.) engages at 16 inches at the esophageal wall. It does not enter the stomach. But on pushing drags the wall downward. A radiograph of the esophagus (Fig. 2), taken by Dr. L. G. Cole, corroborates the diagnosis of dilatation of esophagus.

September 25, 1911, the duodenal olive (17 F.) has entered the duodenum. December 26-28, the cardia was stretched by means of the pyloric dilator. January 12, 1912, this method of stretching the cardia backwards from the stomach was demonstrated on the patient at the Clinical Society of the German Hospital. During January, February, and March, 1912, the patient's cardia was stretched with the pyloric dilator. We succeeded in pulling up size 52 F. and patient was markedly better. She could partake of ordinary meals. She soon gained about fifteen pounds in weight.

*Cardiospasm Caused by Malignant Growths of the Stomach.*—Case IV.—November 2, 1912. Caspar G., 50 years old, began to be troubled with a difficulty in eating about four months ago. At first

the patient noticed that in taking solid food he would require some liquid, in order to make it go down. Later on this maneuver did not help, and the patient had to subsist on liquid food. Ultimately even this would cause immediate regurgitation. The patient was able to retain barely a few tablespoonsful of milk, suffering great discomfort in his chest even then. During the four months of illness the patient had lost about twenty pounds. The examination showed thoracic organs apparently normal. Nothing could be discovered in the patient by palpation in the abdomen.

Esophagus.—Swallowing sound absent at the ensiform process. Bougie 43 F. enters the esophagus up to 19 inches from the teeth, where an elastic resistance is felt. Whether the latter was caused by a deep-seated esophageal sacculation, or by the stomach wall, was difficult to decide. The blood showed a moderate leucocytosis.

The short history spoke against an idopathic dilatation of the esophagus due to cardiospasm, and pointed rather to a malignant neoplasm. The *x*-ray picture of the esophagus (taken by Dr. W. H. Stewart at the German Hospital) showed marked dilatation of this organ and no constriction at cardia (Fig. 3). In as far as the patient was unable to partake of even small quantities of fluid a gastric fistula had to be established. At the operation performed by Dr. Willy Meyer a thorough exploration showed the cardia and pylorus free from any growth, while a malignant tumor was found at the lesser curvature of the stomach.

The symptoms of dysphagia were therefore due to a spasm of the cardia due to a growth in the vicinity.

Case V.—November 23, 1912. Mrs. Yetta M., aged 28, complains for the last six months of a feeling as if food stopped before reaching the stomach; choking sensation after swallowing, and

Fig. 4.—Mrs. Y. M. Showing the position of a growth in the stomach.

regurgitation of food. Vomits immediately after eating, especially after partaking of meats and heavy foods. Frequently vomits after drinking water, especially if cold. Rarely vomits at night, and then only mucus and water. Rarely vomits after breakfast, but nearly always after luncheon and dinner. Has considerable pain under sternum on swallowing. At present she is only able to eat eggs, occasionally a cracker, milk, and soups; of the latter only small quantities. The patient has lost about thirty pounds in weight.

Present condition.—Physical examination of the chest does not reveal anything abnormal. Palpation of the abdomen shows an oval mass of walnut size to the left of the ensiform process, situated under the margin of the left costal arch. Swallowing sound is absent at the ensiform process. Bougies 48-54 enter the stomach, a slight resistance being felt at cardia and easily overcome. Wassermann's test was negative.

Notwithstanding that the cardia was not stenosed, severe dysphagia existed. The latter must be ascribed to cardiospasm caused by the growth in the lesser curvature of the stomach. The radiograph taken by Dr. Holding corroborates this diagnosis (Fig. 4). The patient was treated by me at the Postgraduate Hospital. She refused any operative intervention.

*Remarks.*—Case I (W. W.) illustrates that coughing spells may be caused by dysphagia due to cardiospasm. This patient, in fact, complained of nothing else but his cough during or immediately after eating, and he came to me merely for this affliction. Patient, who is a distinguished eye specialist, made observations with regard to his pupils, which seemed to be affected reflexly from the anomaly at the cardia. The description of these phenomena were given in his own words.

Case II (John H.) came with the diagnosis of gastric ulcer. His short report consisted in the statement that he suffered from indigestion since February, 1912; in June he had a hemorrhage from the stomach (vomiting of a cupful of blood). He was treated with rectal feeding and then with the regular Leube rest treatment, but without much improvement. Notwithstanding the liquid diet in which he persisted all along, and of which he took but sparingly, he continued to suffer and lose. The diagnosis of gastric ulcer appeared certain, and it was left to me merely to map out a plan of treatment. Before doing this I wished to ascertain, if possible, the localization of the ulcer, and gave patient the duodenal bucket. The next morning it was found that the bucket did not enter the stomach. It had remained over night in the esophagus. This indicated that there was an abnormal condition present within the esophagus. A further examination showed that the swallowing sound was absent. A bougie (43 F.) met with a slight resistance at 12½ inches, and again at 17 inches from the lips, which both were easily overcome after waiting a few seconds and pushing the instrument downwards. Bougie 48 F. showed a very similar state of affairs. The diagnosis of esophageal spasm and cardiospasm was now easily made. The case shows how important it is to enter into the details of the symptoms and to examine the neighboring organs in instances in which the picture of the disease is either not fully clear or its cause obscure.

Case III (Miss Jennie B.) serves as a good example of an impermeable cardiospasm. A bougie always failed to enter the stomach, the end regularly becoming engaged in the sacculation of the dilated esophagus. An attempt to introduce a dilat-

ing catheter over the thread of a duodenal olive failed, the former being caught in the same sacculation. The pyloric dilator was given to patient during the afternoon, and left in the digestive tract until the following morning. It was found that the end had reached either the duodenum or the stomach. After inflating the balloon we succeeded in stretching the cardia backwards from the stomach. This method was demonstrated on patient at the Clinical Society of the German Hospital on January 12, 1912. The patient then rapidly improved. The pyloric dilator will thus be found of practical utility in some cases of impermeable cardiospasm.

Cases IV and V show that cardiospasm may at times be encountered associated with, or more correctly due to, a malignant neoplasm of the stomach. In case IV the cardiospasm was accompanied by dilatation of the esophagus, as the radiograph well shows. In case V, which is very similar to case IV, esophageal dilatation is likewise present, though not so pronounced. (See Fig. 4.) Here a small nodular tumor could be detected by palpation, while in IV the physical signs with regard to a tumor were absolutely negative. In both the diagnosis of malignancy was made, in four principally by the symptoms (gradually increasing dysphagia for a period of four or five months, with loss in flesh and no cessation in the ailment), and in V by the same symptoms in association with the result of palpation. In IV the diagnosis was verified by the *autopsia in vivo* at the operation, and in V by the further growth of the tumor.

The treatment of this malignant form of cardiospasm will be quite different from that of the benign form. It will consist in an operation for the removal of the growth, and if this be impossible, in the establishment of a gastric fistula. Forcible stretching of the cardia is here too dangerous, and therefore inadvisable.

Before concluding I may be permitted to emphasize a few points with regard to diagnosis and treatment of cardiospasm.

The symptomatology and diagnosis of cardiospasm and idopathic dilatation of the esophagus are well known, and have been also briefly described in my previous paper. Here I wish to lay stress on the great importance of Meltzer's swallowing sound. If it is found present either at once or seven seconds after deglutition, there is neither cardiospasm nor idiopathic dilatation of the esophagus present. If it be considerably delayed twelve to twenty seconds after swallowing of water, or if it be now delayed and now absent, cardiospasm is frequently present. Again, if it is always absent, and bougies (43-48) enter the stomach there is as a rule idiopathic dilatation of the esophagus. Radiographs will be able to confirm the diagnosis and must be considered of great assistance.

As regards treatment cases of mild cardiospasm quickly improve under the influence of a nerve sedative also after the passing of a somewhat larger bougie (43-54 F.) through the cardia into the stomach. In severer cases of cardiospasm, and in all instances of idiopathic dilatation of the esophagus, the forcible stretching of the cardia by means of a cardiodilator (up to size 8-10 cm. circumference) is essential. Acording to my new experiences, the forcible stretching of the cardia gives such excellent results that I consider it a sovereign remedy for cardiospasm and primary dilatation of the esophagus.

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# TIBIAL BONE TRANSPLANTATION IN THE POSTOPERATIVE MASTOID WOUND.

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Since the introduction of operative procedures on the mastoid bone, surgeons have endeavored to devise methods by which the mastoid wound would heal more rapidly and would be associated with as little deformity as possible. In all these surgical measures it has been the aim to eradicate all the diseased tissue as thoroughly as possible, in order to permit the development of healthy granulation tissue, and eventually to bring about complete closure of the wound.

This process of repair does not progress the same in all cases. It varies in accordance with the size of the mastoid cavity and the pathological changes in the middle ear and external auditory canal at the time of the operation, and is also influenced by the age and constitutional condition of the individual. As a rule one may expect closure of the wound in from four to six weeks, although some cases may remain open for months. Even at best, healing of the mastoid cavity is slow and tedious.

The usual open method of packing and repacking every third or fourth day until complete recovery is in itself more or less painful, and frequently taxes the patience, not only of the individual, who may be of a very nervous temperament, but also of the attending surgeon.

In order to hasten the early or primary closure of the mastoid wound, to avoid the packing and repacking, and to obtain a better result cosmetically, various methods have been suggested from time to time.

The following may be mentioned as some of the more important: (1) Blake's blood clot method;[1] (2) the serum method devised by Stuart-Low;[2] (3) filling the wound with vaseline dressings (Roy);[3] (4) filling the cavity with bismuth paste as suggested by Beck;[4] (5) soap emulsion dressings; (6) picric acid dressing (Bondy);[5] (7) treatment without packing (Mühlen, Zarniko);[6] (8) filling the healthy granulating wound some days after the primary operation with melted sterile paraffin (Politzer's method);[7] (9) Gruber's method of secondary suture of the wound;[8] (10) Bondy's secondary blood clot method recently revived by Held of New York; (11) filling the wound with glutol (Kretchman) and with Mosetig bone (Biehl); (12) periosteal flaps after the mastoid operation.[9]

These have been used with varying success by otologists of to-day and do in many instances give very satisfactory results. The above, as well as the method of bone transplantation as suggested by me, are used in the acute cases of mastoiditis.

Having been interested for some time in bone transplantation and having observed the splendid results obtained by the general surgeon by this method of treatment, and in particular by the results of Dr. A. A. Berg, who read an excellent paper on this subject at one of the meetings of the New York Academy of Medicine last winter, I conceived the idea that the same procedure might be applicable to the vascular mastoid bone. I did not know at the time whether transplantation of bone would be feasible here, but thought I would give it a trial when the opportunity presented itself.

I was intensely gratified to see this belief substantiated by a most excellent result, and made a brief report of the case in the August number of the *American Journal of Surgery* as being the first instance in which a bone graft had been used in a postoperative mastoid wound. The case in question was as follows:

Case I.—A young man, H. R., aged 31 years, was admitted into the otological service of Mount Sinai Hospital on Thursday, June 27, 1912. Six weeks prior to his admission into the hospital he had an attack of influenza, which was followed by an acute otitis media in the right ear. The drum ruptured spontaneously and was followed by a profuse purulent discharge. The patient noticed a swelling behind the ear which was of three weeks' duration, so that when I saw him he had all the evidences of an acute mastoiditis. I therefore deemed it advisable to open his mastoid, and two days after admission, June 29, I performed the ordinary Schwartze-Stacke operation. Having removed all the diseased tissue as thoroughly as possible, I packed the wound in the usual way. Five days later I removed the dressing and found a clean granulating wound, with only a slight seromucous discharge. Two days later, July 6, in other words, one week after the primary operation, I decided to do a bone transplantation. The patient was again anesthetized and, taking a proportionately sized piece of bones with its periosteum attached from the crest of the patient's tibia, I cut it so as to fit into the open mastoid cavity. The section of bone was rectangular in shape and measured an eighth of an inch in thickness, half an inch wide and two inches in length. The raw edges were slightly beveled so as to lie in close contact with the granulating surfaces of the mastoid cavity. The skin was then completely sutured, with the exception of a small opening in the inferior angle, in which I placed a small gutta-percha drain. As there was no reaction, I allowed the patient to get out of bed two days later, but did not disturb the dressing until the following day. Finding merely a slight mucous discharge, I removed the drain and allowed the opening to close, so that I had a perfect primary union on the tenth day after the original mastoid operation. I kept the patient in the hospital for three weeks in order to observe the course of the wound; as there was no reaction, I considered the case cured. I have had him under observation since July, seeing him from time to time. It is now a period of six months from the time of the operation. The transplanted bone has been retained and the wound has healed perfectly. There is no depression at all, and one finds only a smooth linear scar. The patient's hearing is well preserved. The wound in the leg healed by primary union and did not cause the patient the least inconvenience.

I have also used this method in two other cases which I will briefly detail:

Case II.—A young girl, L. F., aged 14 years, was operated upon one year ago for a double mastoid, and discharged as cured. On July 15 of this year she was readmitted into the hospital, as her left ear again discharged and her mastoid also became involved. I performed a secondary operation on the 17th. Ten days later, July 27, I did a tibial bone transplantation and sutured the wound with the exception of a small gutta-percha drain just as in the previous case. In removing the bone from the leg I injured the periosteum, owing to a slipping of the saw. Nevertheless I used this transplant. The wound was perfectly clean and covered with granulations, as far as I could judge, yet within a few days the edges came apart but the bone remained in place. I applied wet dressings and removed the drain, at the same time touching the edges with a 10 per cent. solution of silver. Subsequent dressings consisted merely of applying sterile gauze and an antiseptic powder.

On August 26, 1912, the patient was discharged with the wound nearly united. It failed to close completely, however, as a portion of the transplanted bone acted as a foreign body, which, being removed, allowed the wound to heal rapidly. It is now ten weeks since closure of the wound, but owing to its failure to close by primary union, the cosmetic result is not as good as it might have been.

Case III.—A young lady, F. K., 20 years old, was admitted into the otological service of Mount Sinai Hospital on September 1, 1912, with an acute suppurative, left-sided otitis media of four days' duration. The drum had ruptured spontaneously and there was a profuse purulent discharge. The mastoid process was exceedingly painful. I performed the ordinary Schwartze-Stacke operation on the following day, September 2, 1912. Dressings were changed every other day. On September 19, having a clean granulating wound, I did a tibial bone transplantation. Four days later the sutures and gutta-percha drain were removed. Unfortunately I also injured the periosteum in removing the bone from the tibia, as in the previous case. The edges of the wound separated somewhat, but closed by granulation, the transplanted bone remaining *in situ*. The patient was discharged from the hospital on October 1. For a few weeks thereafter the superficial dressings were changed every other day and the wound edges touched with a 10 per cent. solution of silver nitrate. There is a slight depression behind the ear, but the transplanted bone has been retained. It is now a period of six weeks since closure of the wound, and there has been no reaction. I believe that had there been no injury to the periosteum, union would have been better and more rapid. The hearing is well preserved.

*Technique of Bone Transplantation.*—The piece of bone which I use for the transplant is taken from the crest of the patient's tibia. As a matter of convenience I select the leg corresponding to the side of the mastoid wound. The operation is performed under general anesthesia, although it is perfectly feasible under a local anesthetic.

Having removed the packing from the mastoid cavity, I freshen the edges so as to obtain a better union, but do not touch the granulating surface of the wound itself. In the meantime an assistant prepares the leg over the tibial region. I then make an incision 6 or 7 inches in length down to the periosteum, but exercise care not to injure it.

With a bent probe I now measure the distance from the upper to the lower angle of the mastoid wound and mark off the corresponding length on the exposed priosteum. I then outline with a sharp scalpel the piece of bone I wish to remove, cutting through the periosteum to the bone itself, but being careful not to cause any injury. I usually outline a quadrangular bone flap, from half an inch to one inch in width, the length varying according to the mastoid wound.

Having done this, I bore a small hole with a bone drill through the crest of the tibia, about half an inch below the surface. Through this I pass a small Gigli saw as shown in the diagram, Fig. 1.

This is fastened into the handle of a scroll saw and one then removes a bone flap as shown in Fig. 2, so that the raw edges are somewhat beveled. I find it better to use a saw than a chisel for this purpose, as there is less possibility of injuring the

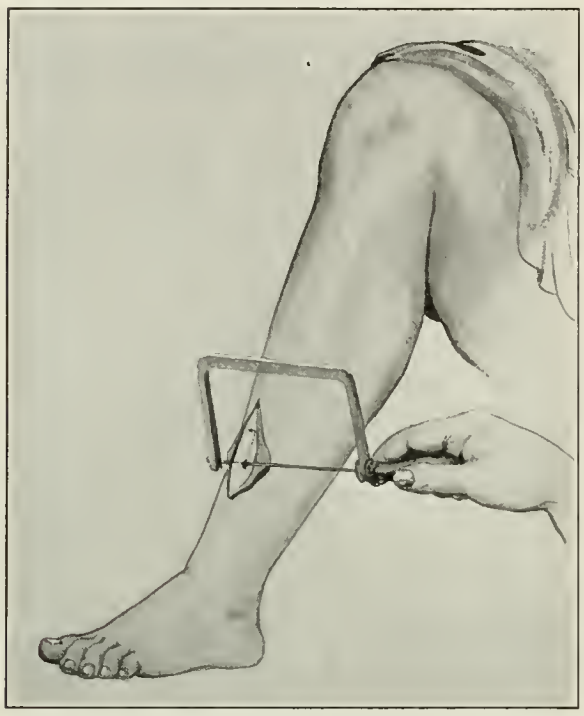

Fig. 1.—Exposed crest of tibia showing Gigli saw introduced through drill hole, and bone flap with periosteum outlined by dotted lines.

periosteum, and if one follows this little precaution of first drilling a small hole the saw cannot slip.

The bone with its periosteum now being detached, it is carefully immersed with a pair of forceps into warm saline solution. It is thereupon placed into the mastoid wound as quickly as possible in such a manner that its raw surfaces come in contact with the clean granulating surfaces of the mastoid bone itself. The skin is then carefully sutured with the exception of a small orifice in the lower angle, in which I place a small piece of gutta-percha drain for a few days.

If at the end of three or four days I find that there is merely a slight mucous or mucohemorrhagic discharge, I remove the drain and allow the opening to close entirely.

The transplanted bone acts as a bridge, as shown in Fig. 3, and upon this rests the skin of the mastoid region. From the transplanted living periosteum new osteogenetic cells penetrate into the transplanted bone and gradually replace it by new formed bone, whilst union between the transplanted periosteum and the periosteum of the adjacent bony tissue also takes place.

The air space below the transplant fills up with a blood clot, which becomes organized and eventually replaced by new bone from the transplant, so that after a time the cavity becomes obliterated.

It is important to remember that even in cases in which the bone transplant is exfoliated, portions or the entire transplanted periosteum remains. It eventually produces a new bone formation, which fills the defect created by the operation.

In performing bone transplantation one must observe the following precautions.

(1) The postoperative mastoid wound must be free from purulent secretion and covered with healthy granulations.

(2) The wound must not be curetted or bathed with antiseptic solutions.

(3) Transplantation must be performed as a secondary operation, and may be undertaken a week, ten days, or even longer after the primary operation, depending entirely on the condition of the mastoid cavity.

(4) The bone flap must be taken from the patient's own tibia; in other words, an autogenous transplantation.

(5) Bone alone is insufficient; one must always take the bone with its living periosteum attached. This has been conclusively demonstrated by the experiments of Ollier[10] as early as 1858, and confirmed later by Radzimowsky,[11] Marchand,[12] Bonome,[13] and others, and more recently by Auxhausen.[14] The consensus of opinions of most investigators proves that in order to make a bone transplant viable it is imperative to preserve the healthy living periosteum.

(6) The periosteum must not be injured; for, if it is, the ultimate result will be doubtful. The chances of success are much greater with an uninjured periosteum.

(7) In making the bone flap, one must handle it as little as possible, so as to avoid injury and infection.

(8) Inasmuch as a good blood supply is absolutely essential to the successful issue of all kinds of transplantation it is advisable to make use of this method only in such cases in which a good vascular bed for the transplant is present. This would exclude those cases in which there is a hard, ebonized sclerotic mastoid bone.

Transplantation of the bone in mastoid surgery is a procedure which I do not advocate as a routine measure. I am of the opinion, however, that it is of value in cases in which there is a clean granulating wound, for if we succeed we not only obtain a better cosmetic result and greatly shorten the time of healing, but we also overcome the packing and repacking of the wound as is customary in the usual open method.

I may state that the procedure has one drawback,

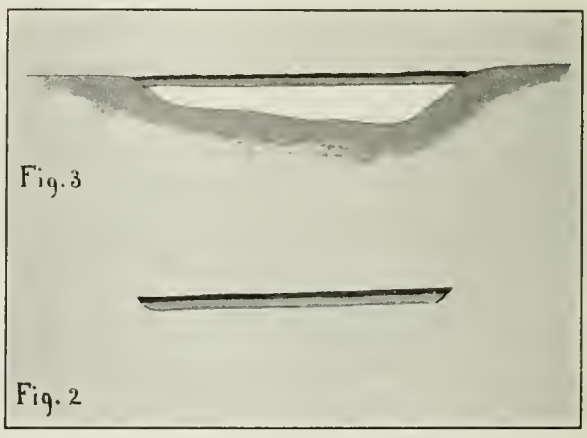


Fig. 2.—Lateral view of bone transplant, showing layer of periosteum and the raw beveled edges.

Fig. 3.—Mastoid cavity showing bone transplant with its periosteum in position, and air space below.

if one may call it so, and that is that the patient is subjected to a second general anesthesia. However, I believe most patients will readily submit to this, if they can be convinced of the time and annoyance saved in the after treatment. There is no doubt

that the method is perfectly feasible under local anesthesia, as already stated.

Exposure of the sinus and dura, I do not consider a contraindication to a bone transplantation, for if these parts are covered with healthy granulations there is no reason why the result should not be satisfactory. I was asked if there was no danger of a retention of pus beneath the transplanted flap with a secondary infection of the surrounding structures, as the sinus, etc. I do not believe that this is likely to occur, for, if there is a suppurative process going on beneath the transplant, union will not take place, and the bone will be exfoliated within a very short time. Under such circumstances, transplantation will fail, and one is compelled merely to resort again to the usual open method of treating the wound. In other words very little has been risked and we have given the patient a chance for a more rapid and painless recovery.

In conclusion I wish to state that a few cases are indeed insufficient to prove the value of any surgical procedure. However, I feel that the encouraging results obtained by these first attempts at a solid bone graft in a mastoid wound, and as far as I know the first attempts of this kind, demonstrate the feasibility of this method and trust that future cases will prove it of value in the postoperative treatment of mastoid wounds.

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53 East Fifty-eighth Street.

## JUNG'S MODIFICATION OF THE FREUDIAN THEORY OF THE NEUROSES.*

By S. P. GOODHART, M.D.

NEW YORK.

The radical conceptions of Freud, with especial reference to the theory of the origin and cure of hysteria and the neuroses, although for some years lying dormant, have been, as we all know, within the recent past suddenly revived and have gained a strong hold upon scientific thought both here and abroad. Bitter as was the opposition to the Freudian theories among the majority of psychiatrists, yet staunch were many of his adherents.

*Paper read before the Neurological Section of the New York Academy of Medicine, November, 1912.

Perhaps no observer has so judiciously and in such an unbiased manner studied the Freudian doctrines as has the eminent psychologist Jung of Zürich. Originally an investigator of these theories and a supporter of them, he has gradually found himself going further away from them in their originality. The virulent criticisms assailing them have likewise been applied to Jung, although he has often expressed himself as one in search of truth and studying the subject with an unprejudiced mind.

Those who heard the most recent expressions upon the subject by Jung himself must have been impressed with the brief but comprehensive discussion of psychoanalysis which he delivered in October before the Neurological Section of the Academy of Medicine. However, the discussion which his remarks evoked indicated that the radical departures from the Freudian doctrines were not entirely grasped; in a conversation with the writer a day or two later it transpired that Jung himself was of the same opinion. With his approval I have undertaken a brief, critical review of his argument.*

As is well known, the original idea that hysteria and related neuroses took origin in trauma or mental shock of a sexual nature in early child life was given up fifteen years ago; for, as Jung says, it soon became obvious that sexual trauma itself could not be the real cause of a neurosis, since almost every human being has had a sexual shock in early youth, though of course we know that this serious consequence, a neurosis in later life, is relatively infrequent. Freud himself, the original expounder of this idea, soon learned that sometimes patients in whom an early traumatic event of a sexual nature seemed to be the basis of their psychoneurosis really invented the story, it being with them a phantasy or, in other words, a representative experience constructed entirely as a result of their mental imagery.

Through further investigation it became obvious that even a trauma which had really occurred could not always have produced such a violent effect as one sometimes determines through psychoanalysis; this apparent effect is really not so much the trauma itself, even if that trauma has occurred, but rather a morbid phantasy. Freud showed that sexual phantasy reaches back to early infantile age when it is connected with, or preceded by, bad habits and so-called infantile sexual perversities. In this conception of the etiology Freud traced back the neurosis to some sexual activity in early infancy, and this conception led him up to his more recent view that a neurotic is, so to speak, *transfixed* to a certain period of his early infancy; he even makes the attempt to classify or differentiate the particular neurosis according to the time or stage of infantile development in which the so-called "fixation" occurred.

From this standpoint the neurotic appears to be entirely dependent upon his infantile past, and all the morbid psychic manifestations in later life, the moral and intellectual conflicts develop through the powerful influence of the past. The Freud therapy and its leading thought is in full accordance with this theory, conceived by its author as an unraveling of subconscious attachment of the sexual "libido" to infantile phantasies and habits. Restoration to health demands that the "libido" become detached from the subconscious phantasies or infantile fixation.

This sums up briefly the essence of Freud's

*The author is indebted to Prof. Carl Jung for his kindness in reviewing this paper.

theory. Jung pertinently remarks that this conception warrants the important inquiry as to the reason of the fixation of the libido to the old infantile phantasies and habits. Nearly all of us have had infantile phantasies and habits corresponding to those of the neurotic; still we do not all become fixed with them, and do not necessarily become neurotic later on. The etiological element of the neurosis, therefore, does not consist of the mere existence of infantile phantasies, but must then be contained in the so-called fixation. All the manifold statements of the existence of infantile phantasies in cases of neurosis are worthless as having etiological significance, for the same phantasies are often found in normal individuals. To this, those of us who have had a larger experience give absolute concurrence. Hence it is only the fixation itself which seems to be characteristic.

Jung is careful to do full justice to the sincerity of Freud, and thinks that his investigations of psychoanalysis led him very reasonably to this hypothesis. Psychoanalysis, as we know, unveils the subconscious existence of manifold sexual phantasies which may have their final root in the infantile past and which often revolve around what the Germans have called the *kern*, or nucleus complex. This so-called complex, or subconscious system, has been spoken of in the male as the Œdipus complex and in the female as the Electra complex. These terms refer to the sexually emotional relationship between the son and the mother, or the daughter and the father.* Freud lays great stress upon the importance of this as a common point of fixation. As Jung says, the mere existence of this so-called conflict cannot be characteristic of the neurotic, since in some form there exists in all of us this complex in the subconscious. It is characteristic of each neurosis that the patient appears to be strongly attached to his complex.

Much has been said of this Œdipus and Electra complex; probably its importance has been unreasonably emphasized. In neurotic children it seems that phantasies are prone to assume a sexual character. A morbid affection, Œdipus complex, may not infrequently be bound up in such a neuropathic constitution. The Œdipus or Electra complex, according to both Jung and Freud, is always present. Its presence can be postulated. The only question is whether or not it becomes reinforced in emotional upheaval so that when neurosis develops it stands out and becomes a prominent factor. In neurotics the Œdipus or Electra complex is of great importance. The question arises, is the intensity of the complex derived from fixation or from regression? Here there is an apparent difference of opinion between Freud and Jung.

We must admit that the hypothesis of fixation has more to commend it, since it is known that certain periods of human existence, especially the early years, the pubescent and adolescent, leave a determining trace throughout life. The pertinent question is whether or no this explanation is sufficient. It is true that in some cases the neurosis seems to have been present since the time of infancy, the nucleus complex having remained permanent and powerful throughout the entire life of the individual. If, however, we study the many cases that never show traces of neurosis and apparently become ill at a late period of life, the applicability of this principle becomes doubtful. If there is really a fixation, are we not allowed to base a new hypothesis upon this principle that sometimes, and at certain periods of life, the fixation becomes loosened and inefficacious, while at other times it suddenly becomes strengthened?

As a matter of fact it is a common observation that the outbreak of the disease rarely occurs at an indifferent time, but usually at a critical psychological moment and when a new psychological adjustment or adaptation is demanded. If fixation were the invariable basis of the neurosis we might expect a constant influence of it; that is, a constant neurosis throughout life. This is surely not the case. Jung refutes the idea of fixation, as expounded by Freud, in so far as the former does not believe that it is a question of an abnormal fixation to a certain complex. According to Jung, there is a certain conservatism preserving ancient infantile ways of adaptation or infantile attitude. This is in itself a normal phenomenon and cannot be called "an abnormal fixation." Therefore, even in neurosis it is not that there is abnormal fixation. The neurotic, it must be remembered, has some very individual tasks in life—tasks, efforts, impulses not readily understood. The neurotic is obliged to relinquish, to give up much more of his infantile attitude than a normal being; the latter can remain unconscious of the many callings from within; need not make the constant effort at adaptation; can remain, as one might say, "unconscious of himself" throughout life. The normal being simply follows established lines, the usual avenues of life. He is not a "peculiar" being, has no particular and very individual life tasks. Jung gives the term "regression" a conceptual application more complete than does Freud and in this wider conception applies it as herein described.

Jung believes that all psychological phenomena may be considered as manifestations of energy in the same manner that all physical phenomena are so considered. This energy, variously conceived as desire, or any form of inherent force, he speaks of as the "libido." In a broad sense, he regards it as the vital energy. Its first manifestation he sees in the suckling as the instinct of *nutrition*. It will be recalled that Freud, on the other hand, considered this as *sexual* in character. Jung's conception of the transformation of the libido, its development through the phases of nutrition, sexuality, and the higher functions is splendidly elucidated in his work "Wandlungen und Symbole der Libido."

In the presexual stage of development the *libido* is still in part a *nutritional* function. In the *period of childhood* the libido first appears entirely in the form of an *instinct for the partaking of food* which provides for the growth of the body. As the body develops, new domains are opened up successively for the application of the libido. The last domain for its application, predominant in its functional importance, is the sexuality which originally appears extraordinarily dependent upon the nutritional function. (The influence of nutritional factors on propagation of the lower animals and plants.) It is in the domain of sexuality that the libido acquires a shaping of tremendous significance so as to justify the employment of the term "libido."

*In the Iliad it is related that Œdipus, not knowing his mother, when he met her, misjudged the nature of his filial love and married her.

The normal love of a daughter for her father was perverted in Electra by her desire for revenge for his murder, so that its strength incited her to connive at the assassination of her own mother by her brother.

These are the most striking examples in history, or tradition, of this form of complex.

The libido here manifests itself as the instinct of propagation; originally in the form of an undifferentiated vital energy of growth.

Jung, when he refers to "libido," associates therewith the genetic concept which enriches the recent sexuality by an arbitrary amount of desexualized, primary libido—"urlibido." The transference of Freud's libido theory to psychotic conditions becomes possible only through this genetic concept of the libido, which in all directions extends beyond the recent sexuality.

The libido of the young at first manifests itself exclusively in the zone of the nutritional function; in the act of suckling, the food is ingested through rhythmic movements with all organs of pleasure and satisfaction. As the individual grows and his organs develop, the libido seeks new avenues for its needs, its manifestation, and its satisfaction. The primary model of the rhythmic function, which produces pleasure and satisfaction, must now be transferred to the zone of other functions with the ultimate goal in the sexuality. A considerable part of the hunger libido must be transformed into the sexual libido. This transition does not take place suddenly at the time of puberty, but it occurs very gradually during the course of the greater part of childhood. The libido must free itself with difficulty and very slowly from the peculiarity of the nutritional function in order to enter into the characteristics of the sexual function. In the course of its ingestion the libido carries considerable material from the nutritional function into the sexual zone, thus readily accounting for the numerous intimate connections between the nutritional and the sexual function. When, after the conquest of the sexual zone, an obstacle of any kind arises against the new form of application of the libido, a regression takes place to the just passed earlier stages.

Normally liberated, the libido finds expression in desire, ambition, endeavor, etc., and is, in maturing adult life, devoted to an adaptation to the external world. Whenever the application of the libido, in the process of adaptation, meets with an obstacle, in the normal individual there is an accumulation, a damming, or storing up of this energy, manifesting itself in an increase of effort to overcome the obstacle. If the difficulty assumes unsurmountable proportions and the individual renounces the idea of overcoming it, the libido or energy becomes, figuratively speaking, anchored, and a *regression* results. This is to say, the libido gives up the task and, in the neurotic, assumes a former and more primitive adaptation. Jung understands this process of regression as a tendency to assume former juvenile life habits that have been stored up within the subconscious.

In his work, "Metamorphosis and Symbolism of the Libido," Jung develops the psychology of regression. Thought processes are conducted in two ways: (1) As directed thought, in which there is conduction in language only. This form produces new material, adapts, initiates reality, and attempts to deal actively with it; the attending mental processes are fatiguing; they demand constant energy liberation. (2) Associative thought, as in dreaming, thinking in pictures, or in the waking state as in revery, day dreams, etc.

Dreaming in pure imagery is attended by practically no mental effort; it is the use of spontaneously appearing reminiscences. Reality is disregarded, subjective desires are liberated. Here there is no productiveness in regard to adaptability. We can readily see here how the activity of the subconscious demonstrates itself. Waking or directed thought is progressive. Dreaming or associated thought is regressive. Here is indicated how the phantasies of child life, stored up in the subconscious, find their re-enaction in the regressive period following a psychic upheaval. Progressive thought ceases and associative thought and imagery —regressive psychic process—takes its place. By psychoanalysis the same mental state may be induced as in dreams in which regressive thought-excitation from the subconscious may be stimulated and the sometimes hidden desires of a personality revealed.

Thus we see the neurotic in time of psychic conflict and consequent regression returning to a primitive method of thought—associative thinking in imagery—as does the child and as did primitive peoples. Phantasies, too, thus arise; to the child the moon is a man, a shepherd of the stars; the clouds in the sky are sheep; a dog the husband of a cat, etc., etc.

Psychologically speaking, phantasy I understand to be a form of mental representation of psychic images, often of subconscious origin, quite distinct and severed from their usual relationship in actual experience. Someone has well defined a phantasy as a form of imaginative ornamentation—not to be taken with indubitable credence, but as allowable of an imaginative mind's vivid coloring and rich embroidery in the coarse texture and dull neutral tints of truth. This well illustrates the form that phantasy may take; often based upon an experience, it at times assumes a grotesque form, or again is perverted into some elaborated idea. The phantasy rarely, or never, is the bare experience and is often a purely fanciful construction. The form and character of these phantasies reveal the nature of the pathological psychic content.

The juvenile life of the neurotic is, as we all know, full of emotional upheavals and unstable psychic processes, and I take it that Jung assumes that the process of regression brings to the surface these morbid entities. The disturbance may give rise to defects of nutrition, manifested as disturbances of metabolism and various hysterical outbreaks—psychic regressive manifestations. Here we may even have a revival of the so-called Œdipus or Electra complex. It is observed that the events of juvenile life suddenly assume unreasonable importance or are regressively animated, so to speak.

Finally, taking issue with Freud, Jung says that if we could take off this immediate impediment that is present in the path of life, the whole system of infantile phantasy would at once break down and become inactive. We cannot do this as a rule, and hence the obstacle must be overcome.

To return to the subject of phantasy:

The whole coterie of infantile phantasy, the real and the fanciful experiences of child life, do not give any etiological explanation of the neurosis; nor does fixation; the real issue lies in the inflating, so to speak, through the regressive libido, which has not found its natural outlet. In this we observe a most important therapeutic suggestion; namely, the proper directing or adaptation of the patient's libido in harmony with his environment. A sensitive and somewhat disharmonious character, as the neurotic often is, will meet particular difficulties and more unusual tasks in life than the more normal individual who, as a rule, has but to follow the well-established line of the ordinary. The sexualisms of

the neurotic phantasy are only secondary, being a consequence and not a cause of regression. The real cause of a neurosis is an innate resistance against new adaptations; not, as Freud says, infantile perversions.

Through psychoanalysis one seeks only to establish the connection between the conscious and the desire, the libido, in the subconsious, through restoring the energy or wish or desire to the field of consciousness; in this way the formerly split-off libido becomes again applicable to the new tasks of life. The suppressed desires of the individual should be brought forth and mirrored, so to speak, so that the subject may learn to make a voluntary selection and see for himself just what his attitude must necessarily be in the situation in which circumstances have thrust him. With the gentle, the patient, the persuasive operator the narrow, obstructed path will widen to the comprehensive view of the subject.

I am inclined to believe, however, that there are experiences that lie within the subconscious and entirely forgotten experiences of juvenile life that must of necessity in many instances be brought to consciousness, since I am sure that they have a directly operative influence upon the waking self.

From this standpoint psychoanalysis does not appear to be a mere reduction of the individual to his primitive desires, but rather an educational process, one tending to the development of strength, character, and directed will in the patient. Jung disapproves of the attempt in psychoanalysis invariably to force out the remote past. He doubtless believes that these juvenile experiences may, figuratively speaking, undergo sclerosis, the important elements being really disintegrated and having no influence upon the later mentality of the individual. He believes, however, that the juvenile experiences have of course a certain influence upon the later formation of a personality, but not the exaggerated influence which they apparently have in neurosis; here they become exaggerated, inflated, through regression. In psychoanalysis Jung adds the attempt to discover a way to the unsurmountable task and to find the manner of its accomplishment. The technique of psychoanalysis requires an understanding of the purposes of the method, and, if carried out according to the latest ideas of Jung, need never offend the sensibilities of the most reserved.

Psychoanalysis, then, as we now view it, has not a destructive, purely analytical purpose; it is rather constructive in an effort to synthetize the natural forces of the individual, directing him and enabling him to find himself; to lead him into an avenue which will afford a natural outlet for his creative ability, or energy, or libido. It is indeed an educational endeavor, making for the upbuilding of all which tends to develop the best within the individual. It is a scientific opposing force which rationally meets the demand that has given rise to the deteriorating influence of the various cults, isms, and all the demoralizing institutions of mental malpractice.

34 West Eighty-seventh Street.

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**Physician and Pharmacist—Sale of Liquor.**—The Washington statute, prohibiting the sale of liquor generally, with or without a license, within 2,000 feet of any normal school, is held to apply to a physician who was a pharmacist, prescribing whisky for a patient as a physician, and filling the prescription at his pharmacy within the prohibited district.—State v. Pomeroy, Washington Supreme Court, 123 Pac. 514.

## POST-OPERATIVE GASTROENTERIC PARESIS.*

By James Taft Pilcher, M.D.,

Brooklyn, N. Y.

The occurrence of acute dilatation of the stomach and the usual concomitant paresis of the gut after operation has always been considered a most serious complication, and the percentage of deaths that has been attributed to it would probably be much greater if all the cases had been correctly diagnosed. That it is not so rare a condition as has been heretofore supposed is evidenced by the fact that within the hospital experience of the writer over sixty cases have been observed.

In a recent statistical review comprising some 225 cases (Nicolls) the mortality was stated as having been between 65 and 70 per cent. In this present series of sixty personal cases the mortality has been below 5 per cent. due, we feel, to the earlier recognition and immediate institution of proper treatment. In the last twenty patients there have been no fatalities.

*History.*—The most imperative feature of this class of cases, the acute dilatation of the stomach, was recognized as far back as 1842 by Rokitansky, who considered the condition the result of a mechanical obstruction, owing to the fact that he observed a case in which the duodenum was compressed by the root of the mesentery and its contained vessels. Brinton, in 1859, published the results of a careful study, and concluded that the acute dilatation was of paralytic, rather than of mechanical origin. But it was not until 1873 that Hilton Fagge, in the eighteenth volume of Guy's Hospital Reports, gave the first clear and concise description of the condition which has not been improved upon as regards the description of the symptomatology and diagnosis, even by many writers on this subject at the present day.

Acute dilatation of the stomach and the accompanying paralysis of the intestine has been described under many titles which represent the pathologic-anatomic pictures presented in the cases observed, usually post-mortem, such as pseudoileus, arteriomesenteric ileus, gastromesenteric ileus, mesenteric incarceration of the bowel, post operative arteriomesenteric intestinal obstruction, acute paralysis of the stomach, post-narcotic gastric paralysis, acute duodenojejunal intestinal obstruction, combined ileus, duodenal ileus, duodenal compression, and post-operative acute dilatation of the stomach.

This chaotic condition of nomenclature is another instance of the pernicious results which may follow the drawing of conclusions from post-mortem observations alone since these may give one impressions absolutely erroneous, as has been so conclusively demonstrated lately to have been the case in the compilation of statistics as to the relative occurrence of gastric and duodenal ulcer, pancreatitis and the correlation of ulcer and cancer of the stomach. One cannot draw proper conclusions as to the preexisting physiologic and anatomic relations of an organ which has been deprived of its innervation through death, the study must be based on the living pathology of the organ considered.

*Phenomena of Occurrence.*—Acute dilatation of

*Read before the Kings County Medical Society, Brooklyn, N. Y., March 19, 1912, and before the Society of Alumni of Bellevue Hospital, February 7, 1912.

the stomach *per se* has occurred many times without a preceding operation, cases having been recorded during convalescence from typhoid fever and pneumonia, also in the course of severe debilitating diseases, in the acute infectious diseases and as a result of brain and spinal injuries. Scattered instances are found of acute atony consequent to overindulgence in food or liquids, and in many instances merely eating a very small quantity of certain substances, usually of an innocent nature, has caused dilatation of the stomach through the formation of gas, from which the patients have suffered the most acute distress, and in some unconsciousness has supervened. The most surprising element in this class of cases is the continued production of such great quantities of gas. Many of them suffer a repetition of the dilatation on the slightest error in their diet, the attacks usually following over exertion or conditions of general fatigue. Four typical instances have been observed by the writer of this class of non-operated cases. One of particular interest seen in consultation with Drs. Williams, Bird, and P. M. Pilcher, occurred in a middle aged man, who had no previous indication of stomach trouble and seemed to result directly from having eaten moderately of some smoked herring and caviar. About one hour later, without giving any premonitory signs, he suddenly fell from his chair and almost immediately became unconscious, remaining, however, in a state of normal tonic spasm. Examination disclosed an enormously distended abdomen. On introduction of a tube the gas escaped in such quantities and with such force that it was to be heard distinctly twenty feet away. In fifteen minutes the stomach was again noted to be distended and a similar phenomenon was evoked on the second passage of the tube. The formation of gas was checked by thorough lavage, and in a short time consciousness was regained, the patient feeling perfectly well the next morning. What caused such an extraordinary production of gas, I am unable to explain, but surmise that the attack originated as a result of some toxin, and the syncope was consequent to displacement of the heart.

The cases considered as the basis of this communication followed direct trauma of the upper abdomen in the majority of instances, and were particularly sequelæ of gall-bladder operations. The minority comprised cases of appendix, colon, uterine, and kidney manipulations.

It may occur at any age; Nicolls reports an instance at nine months, and Lucas one in a child eleven months old. From these the extreme is reported by Smith, as occurring in a patient of seventy-four. The average, however, is between twenty-five and thirty-five, probably because more people are operated on at those ages than at any other. There seems to be no predilection of sex.

*Etiology.*—In order to be able to intelligently treat any condition one should have a thorough understanding of its etiology, and this is particularly pertinent as regards the question of gastroenteric paresis. The two questions for consideration primarily are: Is the condition mechanical or paralytic? Both premises have for many years had adherents, those of a mechanical conception fathered by Rokitansky in 1842, and those maintaining a primary paralytic factor, following the precepts laid down by Brinton in 1859.

There is no question that both factors are present when the condition has developed—but which is primary? Does the dilatation cause the kinking in the duodenum, or does the kink in the duodenum cause the dilatation? As Smith has so definitely demonstrated, "the evidence favoring compression of the duodenum by the root of the mesentery as the primary factor in producing dilatation of the stomach is equally conclusive that the compression is secondary. The evidence is post-mortem," and any observations made from such examination show the end results, not the inception. The compression does not account for the inability of the stomach to empty itself by vomiting nor will it even account for the stomach being dilated. The writer has seen several hundred cases of pyloric and duodenal obstruction from cancer and ulcer and in only a very few cases was there any considerable atony of the stomach, and in none acute dilatation, and further, in no instance was the vomiting reflex absent.

Nicolls found, in analyzing a large series of autopsied cases, only one-third of them showed evidence of duodenal compression. Possibly more illustrative is the fact that acute dilatation has occurred in several instances after a gastroenterostomy, which was found patent at autopsy. All of these clinically observed phenomena have been satisfactorily and conclusively substantiated by experimental studies and would indicate that *the compression of the duodenum is secondary.*

How are we to explain its occurrence, for it does occur, as shown by the regurgitation of bile, indicating that the obstruction is distal to the papilla of Vater, and high up in the intestine, evidenced by the lack of fecaloid odor, and further, by its absolute demonstration at autopsy.

The key to the whole situation may be found in the title of this paper—"Gastroenteric Paresis," for the acute dilatation of the stomach is only one factor in the picture, though the most important from a systematic view; the paralysis, as demonstrated by Smith, is not local in its effects. "There is present a general alimentary paralysis and the primary obstructing factor is to be found in the paralyzed bowel," as will be readily appreciated by those accustomed to doing intraabdominal and intestinal surgery, any portion of the gut suffering from a lack of peristalsis offers a relative obstruction and in these cases the entire upper intestine has lost its property of propulsion as well as the stomach.

With these facts in mind consider what occurs at the only absolutely fixed portion of the small intestine, namely, the transverse duodenum, where it is crossed by the root of the mesentery. Nicolls and Smith pictured it clearly in stating that "there is what may be termed a physiological tendency to obstruction or constriction,—a potentiality that may become an actuality from an apparently trifling cause." This factor is present in the paresis of the intestine, the potential obstruction quickly becomes an actual one, the secretions from the stomach and duodenum continue to be poured out and the vomiting reflex is absent. Thus a vicious circle is formed, each factor accentuating the other.

Considering these facts, it seems reasonable to conclude that the original factor in the production of gastroenteric paresis is not to be explained on a purely mechanical basis. This then leads to but one inference that the condition must be one

of nerve exhaustion produced either through direct trauma or through reflex impulses.

In substantiation of this inference we have confirmatory experimental evidence. Cannon and Murphy have proved that excitation of the splanchnic nerves markedly inhibits both gastric and intestinal peristalsis, while Braun and Seidel have demonstrated that if the vomiting reflex is destroyed by cutting the vagi, acute dilatation invariably occurs. Further, Smith has shown that this condition ensues whether the pylorus or duodenum be stenosed or not, indicating therefore that interference with the action of the vagi inhibits peristalsis as well as the vomiting reflex. This interference with the normal nerve tone of intraabdominal structures is probably caused in the majority of cases reflexly, as it very infrequently follows operations on the stomach itself, but rather manipulation of adjacent organs. The nearer their situation to the semilunar ganglion the more frequent the occurrence of post operative paresis, as is indicated by considering that the majority of cases have occurred after operations on the biliary passages, duodenum and pancreas. To this list the writer would add operative manipulation of the kidney, which has very frequently been noticed to be followed by epigastric distress to a greater or less degree. Kelling, Payer, Smith and others attribute the paralysis to the action of the narcotic, particular stress being laid on ether. But their conclusions are vitiated by the fact that acute gastroenteric paresis has occurred after operation done under local anesthesia, as in a typical case reported by Lyle, in which an inguinal hernia was done under the combined infiltration and intraneural method. Recurrence occurring shortly necessitated a secondary operation which was done under ether anesthesia, which resulted in an uncomplicated convalescence. The writer has seen the most obstinate paresis occur after the use of nitrous oxide for the very short period of time necessary for an amputation at the knee.

Kuru and Morris suggest that the chromaffin secretions are disturbed through shock or the production of toxins, and the suprarenal gland being the chief elaborator of such hormones, suggests the thought that possibly the temporary exhaustion of this gland may be responsible for the resulting paralysis as its secretion seems to have some property for regulating the action of the stomach.

Witherspoon concludes from an experience in two cases that intoxication from the overactivity of the colon bacillus in the bowel may possibly prove of etiologic import, but neglects to appreciate that in many instances where we have known foci of extensive colon infection there is no accompanying paresis of the gut. Hendon also attributes the phenomena to absorption of peculiar and highly specialized toxins of unknown nature.

The writer feels, however, that the simpler explanation, namely, paralysis due to reflex inhibition is much more probably correct, as experiments on dogs in which the adrenals have been extirpated have not shown that the stomach or intestines have become paralytic and further the results of treatment based on other premises than that of inhibited adrenal secretion have proved most satisfactory.

*Symptoms and Signs.*—The symptoms are few, characteristic and easily recognized, but are frequently overlooked in the general activity of many hospitals because at first they are considered merely a prolongation of the usual sequelæ of etherization. The cardinal factors in this condition are vomiting, distention and collapse. Of the less important symptoms, pain, thirst, and obstipation complete the picture.

There is a prodromal symptomatology, which is very suggestive, consisting principally in restlessness, depression, excessive thirst, increasing rapidity and feebleness of pulse, and scanty urine, which collectively are quite as reliable guides, if appreciated, as is the regurgitation and distention itself.

Vomiting is a misnomer, as that is not what occurs in the general acceptance of the term, in acute dilatation of the stomach. Regurgitation is, however, much more descriptive. The stomach is emptying itself from overflow, the cardia acting as the safety valve. These tremendously dilated stomachs do not burst, but the slightest movement of the body causes its contents to *well up* into the mouth. In the terminal state it may be profuse, but it will usually be noted at first to consist merely of mouthfuls at varying intervals of bitter, acrid, greenish, frequently coffee-ground material which appears without any appreciable effort on the part of the patient.

This phenomena may be a continuation of the post anesthetic nausea and vomiting. More frequently, however, there is an interval of several days before dilatation occurs, or in many instances, there may have been no immediate post operative vomiting, and nausea and regurgitation were first noted to occur between the twenty-fourth and forty-eighth hour, appearing seemingly without any evident cause. Such a report should at once direct the physician's attention to the abdomen, which will be found greatly distended after the removal of the ever-present, well-reinforced, secretive abdominal binder.

Distention.—The writer has not observed any of the socalled typical pictures of acute dilatation of the stomach where the outlines of the organ were perfectly traceable through the abdominal wall, and the remainder of the abdomen flat. The distention has always been quite general, possibly more marked in the left hypochondrium and epigastric quadrant, and he fully agrees with Smith that the very fact that a large percentage of deaths and autopsies have been reported is good proof that the condition was not recognized early, if at all, and the flat abdomen observed in these cases is the result only of the enemas employed, while the patient died from the unrecognized dilatation of the stomach.

Collapse.—There rapidly develops in this condition an almost pathognomonic languor and apathy on to which there is engrafted, usually within twenty-four hours, very evident symptoms of collapse, recognized by the small, rapid and almost running pulse and the rapid shallow respirations.

Pain.—The pain complained of is not as a rule a marked feature. It is more frequently characterized as a distressed feeling or one of fullness or pressure, usually upward, impeding respiration. There is one point of pain, however, which has been noticed in several cases and corresponds to the position of the root of the mesentery, where it crosses the duodenum.

Thirst.—In many instances thirst has been the chief complaint, and it is for some time impossible to relieve it as no fluids introduced are absorbed.

Obstipation is absolute.

The temperature is seldom affected or at most is

at great variance with the obvious intra-abdominal condition were it anything but gastroenteric paresis.

*Differential Diagnosis.*—There are but three conditions which could possibly confuse the observer in making a differential diagnosis. *Acute pancreatitis* is the most difficult of these, and particularly when considering instances of acute abdominal paralysis in non-operative cases. The antecedent history may afford no clue, and even the local condition may appear on superficial examination to be the same; as in acute pancreatitis, the first few feet of the small intestine are almost invariably paralytic and distended, but on introduction of a tube, the stomach will not be found to be dilated and the vomiting reflex is present. The pain is very much more intense in pancreatitis, but the onset and general picture of the collapse may be almost identical.

Acute intestinal obstruction is relatively simple to differentiate, as the stomach is never dilated and the vomiting usually occurs early and is of a projectile nature and frequently fecaloid in character.

Acute perforative peritonitis offers to the clinician an increasing leucocytosis and rising temperature, and locally, general rigidity and uniform tenderness, and the stomach is not found dilated at the inception of distress.

*Prognosis.*—The prognosis in untreated cases is bad, probably resulting in a mortality of 70 per cent. In cases recognized at their inception and properly treated the mortality is reduced to practically *nil*.

*Treatment.*—Treatment may be considered under the captions Prophylactic and Active.

*Prophylactic.*—Thorough evacuation of the intestines before operation. The intramuscular or intravenous injection of 20 to 40 c.c. of hormonal before operation in suitable cases. A minimum manipulation of the intra-abdominal structures, particularly those in the upper abdomen. The introduction of two quarts of saline solution at 110° F. into the rectum in a lithotomy position at the conclusion of all intra-abdominal operations. A minimum use of ether or chloroform, and administration by the open method, and the introduction of 2 ounces of olive oil into the mouth shortly after the patients reflexes have become re-established.

*Active Treatment* consists primarily of immediate lavage of the stomach, early, repeated and prolonged. No matter how piteously the patient may beg to be let alone *it must be done.* There is no existent contraindication to its use. Any tube which can be most conveniently passed into the stomach is the right one, and any non-toxic solution the correct one. Warm water to which has been added sodium bicarbonate, 1 dram to the quart, is perhaps the most efficacious. The lavage must be continued until the return is clear and be repeated at the first evidence of redistention, continued nausea or a return of regurgitation. Stimulating enemata, such as turpentine, milk and molasses, or alum should then be employed. These procedures may alone be sufficient to relieve the condition, if the paresis has been of short duration, but there is a certain class of patients who are more resistant, in whom the stomach refuses to empty itself and the peristalsis of the bowel does not become re-established.

*Medical Treatment.*—Heretofore we have used in these cases injections of eserine sulphate or of salicylate, grain 1/40, repeated as necessary, with favorable results eventually in some cases after prolonged discomfort on the patient's part. In certain recent cases we have employed an intravenous injection of 20 to 40 c.c. of hormonal (which is a peristaltic hormone discovered lately by Zuelzer). Thus far our experience in its use has been most fortunate. Those, however, who have employed it more extensively particularly in clinical work (chronic obstipation) report that in approximately 25 per cent. of the cases it fails to act. However, if it is going to act its results are quickly appreciated and it seems to be fairly innocuous when properly administered. In some patients with chronic bowel atony and habitual constipation the results have been most remarkable, but seem rather evanescent.

Before employing this agent in cases of post-operative gastroenteric paresis, occasion was taken to verify by animal experimentation the efficacy of this peristaltic hormone, for which purpose rabbits were used. By injecting intravenously, amounts varying from 3 c.c. to 7 c.c., we were able to conclusively demonstrate that a physiological peristalsis was evoked, varying in degree, however, in different animals. In control of these observations, eserine salicylate, grain 1/130, was similarly injected intravenously, from which administration, spastic contractions of the intestine were noted to occur, which incisures remained for some time with but little propulsion of the bowel contents in some instances. Certainly its action was in no way a reproduction of physiological peristalsis but seemed to affect more the circular musculature while that resulting from hormonal appeared to affect only the longitudinal fibers.

Under no circumstances whatever should any cathartics be employed until *after* the stomach has been thoroughly evacuated, as the retained secretions become after a very short time exceedingly toxic, and if success should crown the efforts of the surgeon to effect a large bland smelling green or grumous stool, it has been our experience, which has been corroborated by others, that while felicitations and congratulations are being indulged in, return to the bedside will be rewarded by seeing the patient die suddenly as the result of intestinal absorption of its toxic contents.

Instillation of warm saline solution per rectum by the drip method is frequently an important adjunct, especially in assuaging thirst, as but very small amounts of water should be allowed by mouth even after the condition is relieved, and the diet for several days should be practically dry.

*Treatment by Posture* has been advocated by many, exclusively by some, particularly those upholding the mechanical theory, while others have combined it with lavage. The knee-chest position or ventral decubitus will, however, not appeal to most surgeons in the treatment of immediate post operative cases, and the patient will most certainly object.

*Operative Treatment* although still undertaken by some had best be discontinued as its results thus far show a mortality of practically 100 per cent., and when one stops to consider what the condition is that is being dealt with, they will realize that the reason for their failures is because they are adding insult to injury.

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## WARMING ANESTHETIC VAPORS NEITHER USELESS NOR FALLACIOUS.*

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In a recent article Cotton and Boothby, after reporting the temperatures observed in three experiments and in one clinical case, make this deduction: "These experiments seem effectively and permanently to dispose of the argument for the necessity of artifically warming the respired mixture."[1] Still more sweeping is the caption under which this article appears, "The Uselessness of Warming Anesthetic Vapors." Seelig likewise reports temperature records of some experiments, and purports to show "The Fallacy of Warmed Ether Vapor."[2] It is the purpose of the writer to show by the self same experiments that these conclusions are unwarranted and unscientific; that artificially warming anesthetic vapors has well established scientific merit, both theoretically and clinically; that the real and only fallacy lies in the deductions made by these writers from their own experiments; and that in the only clinical case reported by these adverse critics the very anesthetic vapors they administered were artificially warmed.

First, a word as to nomenclature: "The closed or so-called vapor method"[1] of administering ether would better be and is here called the insufflation† method, as this term is accurate and completely descriptive. The term insufflation method is used in its broad significance and is not to be confused with the intratracheal insufflation method, which is a subdivision. The closed method is synonymous with the rebreathing method, whereas there is usually no rebreathing in the insufflation method, although there may be. The term vapor method is misleading, as all respired anesthetics are administered as vapors, consequently they are all vapor methods.

Cotton and Boothby show that in the insufflation method of administering ether, when a 3-foot conducting tube is used, the vapor is slightly below room temperature when respired by the patient.[1] This method though, admirable as it is, is used in only a small percentage of ether administrations; a most liberal estimate would be 1 per cent. What, then, warrants the unqualified caption "The Uselessness of Warming Anesthetic Vapors"? Are the 99 per cent. of ether administrations to be ignored?

Certainly the great preponderance of other methods deserves some consideration, especially as the thermal condition varies with the method.

In the open drop method, which is most generally used, the inspired vapor is admittedly cold; temperature records show that it approaches and even reaches the freezing point in an operating room temperature of 75° F.[3 4 5] Seelig, in his experiments, shows that by the time this cold vapor reaches the lungs it is warmed to body temperature.[2] But the fact that the vapor is warmed to body temperature by the time it reaches the lungs nowise warrants the conclusion that, therefore, the cold ether vapor, *per se*, is not injurious to the patient, for this evades the whole matter at issue. What is the effect of the cold vapor before it is warmed, and what is the source of the heat that warms the cold vapor? Surely there can be no doubt as to the proper answer to these questions.

Cold ether vapor is more irritating than warm. Therefore it is a scientific, as well as a clinically observed fact that cold ether vapor causes more irritation of the upper air passages than the warm. The injury to the cells thus produced and the augmented secretion of mucus both increase the liability of postoperative infection, for the patient's resistance against infection, at this particular time, is considerably lowered by this anesthetic. Besides, the energy required to warm the cold vapor is abstracted directly from the patient's vitality. Why should the patient be forced to sacrifice any vitality needlessly, at such a critical time?

In order to prevent the unnecessary irritation of the admittedly cold ether vapor by the open drop method, and the needless extraction of heat from the patient in warming this cold vapor to body temperature before it reaches the lungs, I devised a special inhaler and a small electric heater, which I have previously illustrated and described.[4 5 6] This is the only apparatus, to my knowledge, that delivers to the patient ether vapor at body temperature in the open drop method. This delivery to the patient of warmed ether vapor is not a presumed fallacy, it is an established fact, and whether or not it is a useless procedure is better attested by those who use this method of administration. Quoting T. W. Kilmer, of this city: "The induction is smoother, cough and laryngeal spasm are hardly ever seen, and I think the patient is in a better physical condition, especially after a long anesthesia, when the above open drop method of warm ether anesthesia has been used."[7]

In the rebreathing method of administering ether, which was introduced by Clover nearly forty years ago and which is in quite extensive use, there is an artificial warming of the respired vapor to a pronounced degree. The practical value of this feature has long since been recognized and is mentioned by many writers.

Gwathmey has clearly shown that anesthetic vapors administered at their normal or original temperatures are much more toxic than when administered warm, and this is the essence of the whole matter.[8]

It is a curious yet significant fact that Cotton and Boothby, in attempting to show the uselessness of artificially warming anesthetic vapors, artificially warm all their own vapors.[1] After the anesthetics are vaporized they conduct the vapors through a 3-foot rubber tube, and this, by their own experiments, warms the vapors so that by the time they reach the end of the tube, or the patient's respiratory passages, they are only slightly below room temperature. This tubing, while designed for conduction only, acts as a warming device as effectively as if designed primarily for this purpose, and the warming, being accomplished through mechanical means, is therefore artificial. Even the temperature of the operating room in this climate is, the greater part of the time, maintained artificially. The error of overlooking the fact that by this method all the vapors are artificially warmed might be of little importance were it not for the erroneous and misleading conclusions that have been deducted and applied generally.

*Read before the New York Society of Anesthetists, Feb. 13, 1913.

† "A forcible blowing."—Standard Dictionary.

It is universally conceded that the crucial test is the regular operating room experience, and fortunately these writers report the temperature observations in such a case. The anesthetic was nitrous oxide and oxygen with a small amount of ether. After one hour's administration they report "the temperature on inspiration was 34° C." (or, in other words, it was 16° F. *above* the temperature of the operating room. This is artificial warming with a vengeance! Either the temperature records are incorrect or other artificial means were used in warming the respired mixture so much above the temperature of the surrounding media. It would be contrary to the laws of physics for the temperature on inspiration to be so much above that of the operating room unless further artificially warmed. Rebreathing is the explanation, but in this there is the additional warming of the respired mixture.

These experiments and clinical case show that in the rebreathing method of administering nitrous oxide a special heating device is not needed, but Gatch had previously established this point, as will later appear. In the insufflation method with ether Cotton and Boothby show that the temperature of the vapor when it reaches the patient is 12° F. higher with an efficient heating apparatus than when it is not used. The only questionable proposition in the whole matter is whether, in this particular method, the vapor is delivered to the patient at a higher temperature when a special heating device is used, as without it there is always artificial warming of the vapor anyway as it passes through the tube leading to the patient. Their own experiments more than prove all previous claims of achievement in this respect.

Let us not, however, be confused by these recent experiments concerning the long established laws of physics or by the discussions as to whether, in the insufflation method of administering ether, the temperature of the vapor as it reaches the patient is affected by a special heating device or not, lest we miss the merits of the question as to whether warm anesthetic vapors are beneficial or useless. A special heating device in this particular method may be entirely useless and yet warm anesthetic vapors be distinctly beneficial. There is always an artificial warming of the vapor in this method, and whether by a special heating device this warm vapor can be delivered to the patient at a still higher temperature, is quite aside from the question as to whether warm anesthetic vapors are beneficial or not. The latter is a general proposition, and does not depend upon how much the vapor is warmed in any particular method, provided only that it is warmed to an appreciable degree. The essential physics of this matter is very simple: anesthetic vapors are primarily cold, but may be delivered to the patient in temperatures ranging from the original to body temperature, or even higher. It matters not whether you call the process warming the vapor, effective vaporization, or any other name. The constant, conspicuous, and demonstrable physical feature is that the temperature of the vapor is artificially raised, and that is all that is embraced in the term "warming anesthetic vapor."* That does not even imply, much less require, that a special heating appliance be used, or that the vapor be delivered to the patient above room, or any other specific temperature.

*This completely corresponds with the definition of warm, namely, "to communicate a moderate degree of heat to," as given by Webster's International and the Century Dictionaries; also with that of the Standard Dictionary, "to communicate warmth to; to raise the temperature of."

In the methods brought into question by these adverse critics they, themselves, show that the vapors are warm, consequently we may now drop the physics and study the physiology. To do this best, let us leave their laboratory and go to the operating room of Johns Hopkins Hospital.

Davis shows that the difference in the loss of body temperature under similar conditions of patients, operations, etc., is quite marked, with only different temperatures of ether vapor.[9] In ordinary procedure when ether was administered by the open drop method the loss of body temperature averaged 1.02° F., and when the vapor was warmed the loss averaged only 0.29° F., and in extensive operations involving much exposure the difference in loss of body temperature averaged 1.2° F. in favor of the warm ether vapor. As far as this discussion is concerned it makes not the slightest difference whether this vapor reached the patient at room temperature, nearly room temperature, or nearly body temperature. The essential points are that the vapor was warmed, and that when the warm vapor was used there was a decided beneficial effect.

As regards warm nitrous oxide vapor Gatch says: "The carbon oxide is not the only product of expiration the effect of which must be studied with regard to rebreathing. The heat of the exhaled gas has an important action. Normally the body loses a large amount of heat in the expired air. This loss is prevented by rebreathing. Therefore there is a rise in body temperature. This I have almost always found to be over half a degree in anesthesias of thirty minutes or more. During an administration of three hours the temperature arose 1.3 degrees. Rebreathing is thus a most effective method of heating the gases, which are cold on being freed from their cylinders."[10]

The above are extracts from the official clinical reports from Johns Hopkins University records, not laboratory experiments—clinical reports covering hundreds of cases, clinical reports clearly showing a marked conservation of the patient's vitality when the vapors are administered warm. In other words, there is an abundance of authentic, clinical evidence to show that warm anesthetic vapors are of decided benefit to the patient, and are, consequently, conducive to ultimate recovery. The practice of warming anesthetic vapors stands the test of the most searching scrutiny, being neither useless nor fallacious, but well serving the best interest of the patient.

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# THE LUETIN SKIN TEST IN THE DIAGNOSIS OF SYPHILIS.*

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After the discovery of the *Spirochæta pallida*, several observers attempted to obtain a cutaneous reaction for syphilis by applying extracts prepared from syphilitic tissue to the skin of syphilitic patients.

For this purpose, Tedeschi employed watery extracts of chancres. Nobl watery and alcoholic extracts of early lesions, rich in spirochetes. Ciuffo made use of glycerin extracts of congenitally syphilitic organs; he obtained more marked reactions in healthy individuals than in luetics, whereas Nobl's results were entirely negative. Nicholas, Favre, and Gauthier by intradermic applications of syphilin (a concentrated glycerin extract of liver rich in spirochetes) succeeded in producing nodular infiltrations, while on the other hand, Bruck, Bertin, and Bruyant obtained opposite results. Neisser and Bruck found that a similar reaction could be produced with a concentrated extract of normal liver, as with a syphilitic extract.

More recently, Fontana carried on a series of similar experiments with syphilin, sodium glycocholate, lecithin, and extract of syphilitic heart. Syphilin gave positive reactions in twenty-seven of fifty syphilitics (53 per cent.) Two of sixteen non-luetics (12½ per cent.) also gave positive reactions. In forty of these, the Wassermann reaction was done at the same time, with a positive result in thirty-four, against nineteen positive syphilin reactions. The positive reactions were characterized by infiltrations at the site of injection, varying in size from a grain of wheat to a grain of corn.

As can be seen, the work of these observers, while in some respects encouraging, is on the whole contradictory. These discordant results are not surprising, when we realize that the extracts injected were made from syphilitic tissues, which contained in addition to a small number of the spirochetes secondary organisms and a larger amount of body fluid, which not only diminished the concentration of the extract, but modified its activity and rendered it innocuous, as injections of the preparations in animals would not produce syphilis. Von Pirquet predicted that it would be possible to make the diagnosis of syphilis by means of cutaneous and subcutaneous inoculations, as soon as the syphilitic virus could be obtained in pure culture without admixture and in sufficiently concentrated form. How well von Pirquet's prediction has been fulfilled Noguchi's discovery indicates.

Several investigators lay claim to have grown the *Spirochæta pallida*. In 1907 Levaditi, Yamanouchi, and several others, noted that the *Spirochæta pallida* remained motile for weeks in a collodion sac filled with serum of a monkey and injected into the peritoneal cavity of that animal. Schereschewski, in 1909, claimed to have grown an impure culture of the *Spirochæta pallida*, by employing gelatinized horse serum as a culture medium. In 1910, Bruckner and Galesco, and Sowade in 1911, reported the successful inoculation of rabbits by employing impure cultures produced by them. In 1909 Mühlens, by modifying Schereschewski's technique, succeeded in isolating a pure and luxuriant growth of spirochetes for one generation. Hoffmann, in 1911, working with Mühlens, also reported the growth of the spirochetes in pure culture. In the impure cultures of Bruckner and Galesco, and Sowade, the further growth of the spirochetes was impossible. The objection could not be removed, therefore, that the inoculations were due to contaminating organisms. The cultures of Schereschewski, Mühlens, and Hoffmann were non-pathogenic. All the above observers based their claim for the successful growth of the spirochete upon the morphological characteristics alone. Noguchi has shown that it is often impossible to differentiate the *Spirochæta pallida* from *S. dentium* by the morphology, but certain cultural requirements are essential before the differentiation is absolute. Noguchi lays down the following dicta in identifying a cultivated spirochete with *S. pallida:* (1) The spirochete must be morphologically correct. (2) It must not produce a putrefactive odor. (3) It requires the addition of fresh tissue for growth. (4) Its extractor emulsion must bind complement with the immune serum (rabbit is preferred) produced by repeated injections of the tissue pallida (to be obtained from syphilitic orchitis of rabbits). (5) Its extract of emulsion must give an allergic reaction in certain cases of syphilis. (6) It should be pathogenic. The last requirement is highly important, but we can not exclude the possibility of the organism still being the pallida, even if it is avirulent, as long as it fulfills the other five points, because it is not impossible that a strain of pallida may become attenuated in cultivation.

Noguchi has succeeded in cultivating six different strains of *S. pallida* from the orchitis material of rabbits and seven directly from chancres, condylomata, and skin papules of human subjects. The methods used are different, according to whether the pallida is cultivated from the orchitis of rabbits or directly from man. After obtaining the pure cultures of *S. pallida,* Noguchi made repeated intravenous injections of pallida antigens into rabbits for several months and then giving them a month's rest, tested them with an extract, which was termed luetin, to see if they could not be made allergic to the extract of the pure pallida. They all gave a very decided reaction, characterized by marked inflammation, some leading to pustulation. While he was still working with animals, Professor Welch suggested that he try it in human syphilis.

*Preparation of the Cultures for the Cutaneous Reaction.*—Briefly stated, luetin is nothing but an emulsion of dead *S. pallidæ* and the control is composed of the same constituents as the luetin, minus the pallida. In order to secure a polyvalent antigen, six different strains of the spirochetes are employed. Noguchi prepares it as follows: Cultures are allowed to grow for periods of six, twelve, twenty-four, and fifty days at 37 C. under anaerobic conditions. One is grown in ascitic fluid to which a piece of sterile placenta has been added and the other in ascitic fluid-agar also containing placenta. The lower portion of each solid culture in which a dense growth occurs is cut out and the tissue removed. The agar columns which contain innumerable spirochetes are then carefully ground in a sterile mortar, and the resulting thick paste is gradually diluted by adding little by little the fluid culture,

*Read at the meeting of the Baltimore City Medical Society October 18, 1912.

which also contains an enormous mass of organisms. The dilution is continued, until the emulsion becomes perfectly liquid. The preparation is next heated to 60° C. for sixty minutes in a water bath and then 0.5 tricresol added. When examined under the dark ground illuminator, many dead pallida per field can be seen. Cultures made from this suspension remain sterile and with them no infection can be produced in the testicles of rabbits. The suspension is kept in a refrigerator when not in use. In order to ascertain, if the reaction produced with the suspension might not be due to inoculation of the tricresolized culture medium alone, it is necessary to prepare a similar emulsion with uninoculated media to be used for control purposes.

Technique and Method of Application.—To the luetin at the time of application, an equal amount of normal, sterile salt solution is added and the injection is made intradermically in the right arm, previously well sponged with alcohol. The amount injected, with a very fine needle, .07 c.c. for adults, .05 c.c. for children, is accurately measured and the proper application evidenced by a small, raised, blanched papule, which subsides in about ten minutes. The control is prepared and injected in the same manner in the left arm. For the control, I employ a one cubic centimeter tuberculin syringe and for the luetin a half cubic centimeter tuberculin syringe. In the latter, the graduations are wider, making measurements easier and more accurate. Further, it avoids any possible confusion between the two. Separate sterilized pipettes, tubes, etc., are kept for the luetin and control, thereby preventing contamination.

Up to the present time we have given 150 to 200 luetin injections, but in the present study we are only including such cases as have been followed to a positive termination or watched over a period of at least thirty-six days. The number of such cases is 117.

*Description of the Reactions.*—Noguchi's apt classification is followed.

Normal or Negative Reactions.—After about twenty-four hours in about one-half of my normal or negative cases, nothing except a slight erythema at the site of injection appeared. In forty-eight hours, this had practically disappeared. In the other half after twenty-four hours, there was a definite raised, indurated, papular formation, surrounded by a more or less marked erythematous zone. The beginner in luetin work will at once predict a positive reaction for this patient. This gradually recedes, however, so that by the fifth day, with the exception of a slight pigmentation, nothing more may be noted. On this account reactions appearing at this early period have no diagnostic significance. They are due to the irritation caused by the injection of the foreign material. In a smaller group of cases, however, an eruption presenting the following characteristics appeared. After twenty-four hours, a small, raised, red, indurated papule appeared surrounded by a definite erythematous zone. After forty-eight hours the erythematous zone would disappear, leaving the papule, which would persist as long as two weeks or more, showing only a change in color from red to dark red, then a purplish hue. No pain or itching was complained of. In my early experiences I was in doubt as to the correct interpretation of these lesions, particularly as they were in types of syphilitics in whom the positive reaction is found with the greatest frequency, viz., tertiary lues. At the time I recorded these as doubtful positive reactions. Later on some of these developed at the site of the doubtful reaction lesions of the torpid form of reaction, to be described later. In the beginning of my work most of the patients injected were syphilitic patients and in order to elucidate this point further and determine if a similar doubtful reaction could be produced in non-luetic individuals, I injected twenty-eight persons who were thought to be normal or suffering with other diseases than syphilis. The experience in these cases showed that in none was there after four or five days anything except a slight pigmentation of the skin to indicate the site of the former injection. As Noguchi does not mention this phenomenon I am impelled to record these eruptions as mildly positive reactions.

Positive Reactions.—Papular Form.—Twenty-four to forty-eight hours after the injection a large, red, raised, indurated papule, 5 to 10 mm. in diameter, appears. The papule may be surrounded by a zone of erythema which may also appear slightly edematous. The papule, instead of slowly receding, gradually progresses for the next two or three days, becoming dark or bluish red, when it gradually subsides, disappearing completely within seven to ten days. Evidence of it may persist, however, as long as two or three weeks. In our series the papular form of eruption was noted three times in secondary lues, six times in tertiary, and once in parasyphilis. Total ten.

Pustular Form.—In this form for the first four or five days the lesions will assume the papillary type. After this the surface of the indurated papule will become capped by small vesicles and a beginning central softening will be noted.

After a short time the papule becomes definitely pustular, containing at its apex at first a semi-opaque serum, which later becomes definitely purulent. Pain and itching more or less severe may be complained of. This later ruptures, either spontaneously or by rubbing against the sleeve, leaving an opening surrounded by the indurated margin of the pustule. The gap left by the discharge of pus becomes quickly covered by a scaly crust, which falls off in a few days. The induration gradually subsides, with little or no scar formation. But a pigmentation remains, which may persist for several months. Some of the pustular lesions, instead of breaking down, present a small, central, soft, red, fluctuating mass which is gradually reabsorbed. The number of cases of this type in our series was one in primary, two in secondary, nine in tertiary, and three in parasyphilis. Total fifteen.

Torpid Form.—In this form, the injection site fades away after three or four days, so that the case is recorded as a negative reaction, when suddenly it reappears and progresses to papular or pustular formation, following the course of the types described above. Noguchi regards this type as a rare form, but I have seen it four times in secondary, five times in tertiary, once in latent, and once in hereditary syphilis—total eleven, or 9.3 per cent. of cases recorded. The cause of this rather large percentage of the torpid form in our series is due, I believe, to the neosalvarsan injections, which often follow the luetin test. In one case it did not appear until thirty-six days after the injection. The earliest it appeared was eight days, the average time being fifteen days. On this account I do not consider any injection negative unless the patient has been observed for a period of at least thirty-six days. My plan is to make daily observations for

five or six days, and if at this time the reaction is negative the patient is instructed, if he is an ambulant case, to report every few days, unless he notes the site of injection again flaring up when he is to report on the same day. I have seen no constitutional reaction, excepting a slight rise of temperature, 99° to 100° F., and a slight transient headache. In connection with the various types of eruptions appearing in positive cases, it is interesting to note the changes appearing at the site of the control injection. In fourteen cases the control site evidenced changes of the same character, as on the opposite side, viz., a papular or pustular formation. The lesions are usually, but not always, of a similar character as on the opposite side, although in five cases they were more pronounced than at the site of the luetin injections. One of these, a case of tertiary syphilis, presented a lesion characterized by a broad, rounded, erythematous zone, in the center of which was a sharply circumscribed, hemorrhagic pustule, about the size of a large pea. A few days later, he developed a similar reaction on the right or luetin side. The control side ruptured, discharging a dark grumous material, whereas that on the luetin side was reabsorbed without rupture. This same phenomenon has been observed by Wolfsohn and Robinson. The cause of the reaction on the control side is due to the peculiarity of the skin of spyhilitics, especially tertiary syphilitics, to be prone to infection and traumatic irritation. This is a fact often commented upon by dermatologists and surgeons. For an explanation of this phenomenon Finger advanced the theory of superinfection. He presupposes that, following the trauma, owing to a point of least resistance being present, the syphilitic virus is deposited there and produces the lesion. On the contrary, Neisser after failing to find *Spirochæta pallida* in the lesions, attributed the cause to a peculiar pathological condition of the skin of syphilitics, which he has termed "Umstimmung." That this condition exists is quite evident, as in none of my non-luetic cases have I once observed such a reaction. But the most interesting cases of this character were those, numbering two, in which a typical reaction appeared on the control side, with a negative reaction on the luetin side. Care was taken to avoid contamination, injection into the wrong arm, etc. The theory of infection was eliminated as a causative factor on account of the time of appearance, eight and seven days respectively, and the papular form in one, typical in every way. I attributed the cause of the reaction in these cases to the state of "Umstimmung." To determine, however, this point more fully, twenty-five persons who were either normal or suffering with some disease other than syphilis were injected in both arms with the control only. The reaction was negative in all.

*The Cause of the Reaction.*—The reaction depends upon the production of that peculiar state, known as allergy, anaphylaxis, or Theobald Smith phenomenon, about which so much has been written in the last few years. Allergy is the peculiar state of reactivity of the system of individuals, characterized by a specific hypersensitiveness to the protein content of certain pathogenic organisms, serums, food, etc., after they have become sensitized. This sensitization develops only when a certain time is allowed to elapse between the introduction of the foreign protein and the first inoculation. It is impossible to produce the allergic state if the inoculations are regular and steady. It is most likely to occur, therefore, in those patients, suffering with diseases of the more chronic type, in which the organisms, etc., have had time to undergo the changes, either spontaneously or by the modifications produced by the therapeutic interference or by the substances developed in the infected host, either or all of which may be necessary to produce the state of sensitization. It is absolutely specific in its nature, and is so delicate that one-millionth of a cubic centimeter of a 5 per cent. solution of a three times crystallized egg albumin, or one-thousandth of a millionth of a gram of protein, will sensitize a guinea pig enough so that distinct and typical symptoms are produced after a second injection of the same material, while one-fifty-thousandth of a cubic centimeter of solution containing one-millionth of a gram of protein sensitizes fatally. (Wells.) Some of the best examples of the allergic phenomenon are the symptoms of intoxication which sometimes ensue upon a second injection of diphtheria antitoxin, Koch's tuberculin test, von Pirquet's cutaneous test, Moro's percutaneous test, Calmette-Wolff-Eissner's test, the mallein test in glanders, vaccinia, etc. Theoretically one would not expect to find the allergic condition present in the early congenital and early acquired cases, because the spirochetes and the infected host have not as yet undergone the changes necessary to produce sensitization. But in the later stages we ought to find it present in a larger percentage of individuals. These theoretical suppositions are well borne out by the practical results reported.

*The Value of the Reaction.*—That the luetin reaction is a very valuable addition to our diagnostic armamentarium is unquestionable. It is quite true that in the primary stage we can easily demonstrate the *Spirochæta pallida,* and the secondary stage presents evident lesions or a positive Wassermann reaction, making application of the test superfluous. But in the late stages of the disease, especially when it involves organs remote from the surface, *e.g.* gumma of the internal organs, it baffles the diagnostic acuity of the most skilled. It often happens, and especially after specific treatment, that the Wassermann reaction is negative in these cases, thereby adding to the obscurity. It is in such type of cases that the luetin reaction is about 100 per cent. positive. Furthermore, the administration of mercury does not temporarily inhibit the phenomenon as it does the Wassermann reaction. Then, the ease with which it may be carried out must commend itself. Just how much importance can be attached to the test for determining the cure of syphilis cannot at this time be answered with certainty. According to Noguchi the allergic condition of the skin of syphilitic patients persists as long as the infecting agent still survives somewhere in the body, and it requires a most energetic treatment to remove it. Following the complete eradication from the system, the allergy after a certain time must also disappear. In animal experiments the luetin reaction no longer appears after several months, Noguchi mentions two tertiary cases in which, following salvarsan injections, the Wassermann reaction became and remained negative. The luetin test, made eleven and eight months respectively after the treatment, was negative. This would seem to indicate that cured syphilis, unlike healed tuberculosis, will not give a positive reaction after a certain time. As of prognostic value in determining a cure may be recorded the patient of Wolfsohn, in whom one year before admission, 0.6 gram of sal-

varsan was given. The Wassermann reaction was negative both with blood serum and cerebrospinal fluid. The luetin test was, however, positive. There are cases, however, in which the disease persists in spite of treatment and the patients do not give a positive reaction. This class of cases, according to Noguchi, shows undoubtedly an unfavorable prognosis. At times we have seen a negative luetin, notwithstanding marked clinical symptoms and a positive Wassermann reaction, but following therapeutic interference, the opposite condition would be produced, viz., a negative Wassermann reaction and a marked positive luetin.

*Comparison of the Luetin Test with the Wassermann Reaction.*—A comparison of the luetin injection with the Wassermann reaction gave us the following results: Primary cases, two. Luetin reaction positive in one, negative in the other. Wassermann reaction positive in one, doubtful in the other. *Spirochæta pallida* demonstrated in both. The positive luetin had the doubtful Wassermann reaction, while the one with the negative luetin had the positive Wassermann reaction. Secondary cases: Luetin positive in nine, negative in eight; Wassermann reaction positive in nine, doubtful in one, negative in seven. Six of these seven negative cases had received previous salvarsan or neosalvarsan treatment, mostly by the multiple method of dosage, which we have adopted. This, in my opinion, is the cause of the large percentage of negative Wassermann reactions in these cases. In these seven cases with negative Wassermann reactions, the luetin was positive in three, negative in four. Tertiary cases numbered twenty-three. Wassermann reaction positive in eleven, negative in nine, not recorded in three. Of these, three were doubtful cases of tertiary syphilis. The luetin reaction, on the other hand, was positive in twenty, negative in three. Noguchi maintains that the luetin is 100 per cent. positive in active tertiary cases and 94 per cent. positive in tertiary cases without symptoms. Of my three tertiary cases with negative luetin reaction two had no clinical symptoms, were in excellent health, and the diagnosis was made on a history of chancre many years ago and a positive Wassermann reaction. The third patient had severe tertiary ulcerations in November, 1910, which resisted a most vigorous mercury and potassium iodide treatment. Following salvarsan treatment, his lesions receded and his Wassermann reaction has since been persistently negative. Two negative luetin reactions convince me more than ever that I have cured his malignant syphilis. Similarly in another case in the secondary period with no symptoms a persistent negative Wassermann reaction for nearly two years after salvarsan and two negative luetin reactions enforces the belief that we *do* sometimes cure syphilis by salvarsan injections.

Congenital Syphilis.—Noguchi claims that after congenital syphilis has existed some time, the luetin test is practically 100 per cent. positive. We have applied the test to only five cases of congenital syphilis, but as they were, excepting one, in very small children who would not remain quiet, the injections were subcutaneous rather than intradermic. As I feel confident that after subcutaneous injections the test can not be relied upon I have discarded these four from our series.

Parasyphilis.—Seventeen cases. Wassermann reaction positive in four, negative in three, not recorded in eight, doubtful in two. In these luetin was positive in five, negative in twelve. Noguchi statistics show that the luetin test is about 80 per cent. positive in parasyphilis. In our series the luetin test was positive in five of seventeen cases, or about 30 per cent. Fourteen of our parasyphilitic cases were inmates of Bay View Insane Department, in the majority of whom the history of syphilis was indefinite and the Wassermann reaction test not made. This accounts for the large percentage of negative luetin reactions in these cases. In the three parasyphilis cases seen in our clinic, in which the history of syphilis was certain and the Wassermann reaction positive, the luetin reaction was positive in all. These results again aid in putting tabes dorsalis, etc., in the category of syphilis, to which we now know they rightly belong.

Latent Syphilis.—In this class I have put a patient with sexual neurasthenia, who was injected merely as a control, but who gave a very decided reaction. His Wassermann reaction was negative. Careful inquiry failed to elicit any history of chancre or secondaries. By latent syphilis, however, is usually meant the type seen in apparently healthy mothers, who give birth to syphilitic children. According to Noguchi these cases give a 100 per cent. positive reaction and as the Wassermann reaction in this class of cases is only 40 to 50 per cent. positive we can again see the great value of the luetin reaction. This again aids us in explaining why she is subject to Colles' law, *i.e.* the apparently healthy mother of a syphilitic child cannot be infected by that child.

Doubtful Cases.—Number four. Wassermann reaction and luetin reaction negative in all. Two of these patients were suffering with severe syphilophobia, and I believe the application and study of the test caused sufficient psychological influence to effect a cure.

To recapitulate: In primary and secondary syphilis the luetin test is less constant than the Wassermann reaction, but in tertiary, latent, and congenital syphilis, and parasyphilis it is much more positive and therefore of greater value than the complement fixation test.

Control Cases.—For purposes of control the luetin reaction was applied to twenty-eight persons who were either normal or suffering with some disease other than syphilis. The luetin test was negative in all. Twenty-five non-luetic cases as already mentioned, received injections in both arms of the control only. All reacted negatively.

*Conclusions.*—1. The luetin is entirely harmless.

2. It is specific.

3. While the technique is comparatively easy and could be still more simplified by putting up in ampoules the full dose, ready for use, it requires a little practice and experience to make the application properly and interpret correctly the mild form of positive reaction.

4. It is mostly negative in primary and secondary untreated cases, but shows a large percentage of positive reactions, in such cases, receiving previous treatment.

5. In congenital, latent, and tertiary syphilis it is practically 100 per cent. positive. In parasyphilis it is positive in a large percentage of cases.

6. The luetin test is less constant than the Wassermann reaction in primary and secondary syphilis, but possesses greater value as a diagnostic agent than the latter in tertiary, latent, and congenital cases and parasyphilis. Furthermore it possesses greater prognostic significance than the Wasser-

mann reaction in determining when syphilis is cured.

I wish to thank Dr. Noguchi for his generous supply of luetin and control, Drs. Simon, Ireland, and Judd, for the Wassermann tests, Dr. Hanna for much help in the application of the tests and study of the cases and Dr. Truitt for the cases studied at Bay View.

Professional Building

## OCCUPATION AS A THERAPEUTIC MEASURE.*

By W. R. DUNTON, Jr., M.D.,

TOWSON, MD.,

PHYSICIAN TO THE SHEPPARD AND ENOCH PRATT HOSPITAL.

Occupation as a remedial agent has been used for mental cases for a great many years. The Friends' Asylum, situated near Philadelphia, has records showing that as far back as 1830 certain measures were taken to establish occupation for the patients. In other hospitals for mental cases provision has been made to provide workshops, gardens, or other forms of employment for the patients, and at certain places definite classes have been given, usually with some form of art work.

During recent years this therapeutic measure has been used much more extensively and now a great many hospitals for mental cases have teachers, who are resident or in daily attendance, who give special classes in some form of handicraft and also give individual instruction where it is required.

Besides this, many institutions train all or part of their nurses in handicraft. At the Sheppard Hospital we give a definite course in handicraft, teaching merely the elements and leaving it to the nurse to develop any special technique which she may desire. This course includes certain forms of entertaining, such as card games or other forms of amusement; string work, paper folding and cutting, binding, crêpe-paper work, reed basketry, embroidery, leather work, wood work, and metal work—the purpose being to teach the elements of these forms of work and give a certain facility in the use of the necessary tools. An especial point, however, is made in teaching the pupils to utilize the various materials which they find ready at hand—such as wrapping paper and twine, which come around drygoods and from the grocery store, and various other simple materials.

It needs but slight consideration upon our part to realize how very much happier we are if we have some definite occupation, whether it be working, playing, or resting. The man who has nothing to do but amuse himself is usually one of the most unhappy and the man who is most happy and for whom we have the greatest respect is the one who is always busy with something and doing it well—no matter whether it be working or playing. In other words, the person who has a hobby or a number of hobbies has a safety valve which enables him to escape many worries, which the more idle person cannot.

Probably most of the members of the faculty have some hobby or other. It may be collecting engravings or postage stamps, playing golf or poker, or even playing in the faculty orchestra. At any rate he has a safety valve. He is much happier for it, but he probably does not realize how much this hobby may be to him, how much it does to keep him happy and contented, how much it does to rest him and keep him refreshed for his work. If one has considered this he probably realizes how much it means to him, and he has probably felt that if he could keep his patients in as good a mental condition as he is it would mean very much for their benefit. We all realize, I think, how much better the prognosis is if the patient is bright and cheerful, no matter how serious his illness, than if the patient is depressed, does not want to live, or says he is going to die. So that any means, such as occupation, which helps to keep our patients in this cheerful frame of mind is of undoubted value. The same is true, of course, of chronic diseases. The patient gets along better physically if he is in a bright and cheerful frame of mind. His ailments are not so constantly before him if he has some diversion, no matter what it may be.

It would be very easy to give numerous instances of how valuable as a therapeutic measure occupation may be, but it is hardly worth while to detain you longer by dwelling upon it.

Among those who have recently given a great impetus to invalid occupation is Miss Tracy, formerly a nurse connected with the Adams Nervine Hospital, near Boston, which treats mild nervous diseases, but principally cases of neurasthenia and psychasthenia, who, in her book entitled "Invalid Occupation," has given definite directions as to kinds of occupation to be used for different cases. In this book Miss Tracy first describes the methods of teaching and the necessary equipment, and in this part she dwells upon the desirability of utilizing what we ordinarily class as waste.

Recently Dr. Mary Lawson Neff, who is in charge of this work for the Massachusetts Board of Insanity, has shown me some very interesting objects which were made from waste—one of them being an article made from bone, which, of course, was a part of the kitchen waste.

Miss Tracy then takes up typical invalids and gives chapters upon the child of poverty and the child of wealth. She concludes the book with a list of occupations, which is really an index. The book is admirably illustrated and is excellent as an encyclopædia for those seeking occupation.

Recently Miss Tracy has given up her position at the Adams Nervine and is now doing nothing but teaching occupation work. It is practically impossible not to find in her book something which will interest everyone, although those who are experienced in the occupation of invalids and especially mental ones, know that at times it is extremely difficult to find an occupation which will take up their interest and which will engross their attention—for occupation to be successful this latter point is very necessary. The patient's attention must be engrossed. Things which are done in a mechanical manner are not beneficial. I had a most striking instance of this a number of years ago. A patient had been depressed and was convalescent and had taken up embroidery, with which she was quite familiar. She did not take much interest in it and would often pause in her work to look away and apparently indulge in self-communion with her gloomy thoughts. At this time I was very anxious to have some typesetting done and it occurred to me that possibly she could be taught to do it. This was done and there was an immediate improvement in the patient's condition. The work was new to her and required attention to do it properly, so that she had no time to indulge in gloomy reminiscences, and she made a fairly rapid recovery.

*Read at the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, November 12, 1912.

Besides the cheerfulness of which I have spoken, which results from occupation, our patients are much less apt to be restless, and in surgical cases we all realize what an excellent thing it is to have our patient lying quiet and not making the slight movements which may disturb the fracture or wound, whatever it is from which they are suffering. It seems useless to give further examples.

The form of occupation naturally will have to be adapted to the patient's individual tastes and the exigencies of the case; but string work, paper work, whittling, offer so many possibilities that it should not be difficult to find something in which the patient is interested. String work, of course, includes various forms of weaving, and patients can use the small frames, such as are used by school children, in a recumbent position. A visit to a store where kindergarten supplies are sold, or a consultation with some handicraft teacher, will surely furnish some occupation which will be of value.

## TEETH GROWING IN THE NASAL FOSSA.

By E. HARRISON GRIFFIN, M.D.

NEW YORK.

The nasal fossa has been described as the seat of the olfactory nerve and smell, also as an entrance of air to the respiratory tract. This is true in almost all cases, but the following report, supplemented by one that I chronicled years ago, would show that at times Dame Nature, that mother of our being, goes astray and tries to turn the canal into one with teeth, or a mouth, so to speak, but, tired at its first digression, it quickly goes back on its own natural lines and leaves a few cases like those I report below—freaks and abnormalities.

Mrs. A., age 54, entered my office one evening, complaining of a bad odor from her left nostril, attended with a profuse secretion of pus and matter. She had had the discharge for about two and one-half years, following the removal of one of her upper teeth, the one next to the wisdom tooth, so called; this wisdom tooth had been removed four years previously. The tooth was splintered in its removal and necessitated several visits to the dentist, who removed parts at each sitting. After the tooth had been thoroughly extricated, a hole was left in the alveolar process, through which there was a continuous discharge of pus into the buccal cavity. The tooth next to this one had been removed over ten years ago without any trouble. The continuous discharge of pus and matter from her nose and through the opening in the alveolar process brought her back again to the dentist. After an examination the dentist sent Mrs. A. to a surgeon, who diagnosed dead bone in her nose and operated upon it while she was under the influence of ether. The operation failed to give any relief. This was the condition which had existed for two and a half years, when she came under my observation.

An examination of the left nasal fossa showed this part to be covered with a pus secretion, very profuse in quantity and of a very penetrating odor. An examination by the probe showed something hard and grating to the touch. I explained matters to her and advised an immediate operation under cocaine. The patient was a little timorous at first, but soon gave her consent.

After the part had been well cocainized, I introduced a large strong pair of forceps and removed without much effort a perfect molar tooth. The crown of the tooth was clear of membrane, but the roots showed tissues still clinging to them, showing that the crown was uppermost in the nose and the prongs or fangs were seated in the floor of the nasal cavity.

The tooth was a counterpart of any ordinary tooth that might have been removed from the jaw. The crown was much decayed and was one large hollow. The discharge stopped immediately and in a few weeks the patient was discharged cured. I have since heard from Mrs. A., who reported that the discharge had permanently stopped.

This tooth unquestionably had been present in the nasal fossa for years, as the size, location, and the amount of decay showed.

Some thirty years ago I reported in the MEDICAL RECORD a case that I had shown at one of the sections of the Academy of Medicine. A patient, male about thirty-five, came under my observation at my throat and nose clinic at the Out-Door Poor Department of Bellevue Hospital. He had a perfect incisor growing from the floor of the nose into the nasal cavity. By tilting the nose upward and extending it with a speculum a perfect tooth could be seen, white in color, and as normal in size and contour as any that grows from a jaw. This patient suffered with a cleft palate. He had been operated upon years before when a child by the elder Mott, but the operation had failed to close up the space in the hard or soft palate.

These are rare cases, but they demonstrate that even Dame Nature at times goes astray or, feeling the monotony of turning out so many individuals of the same pattern, tries at times to improve, or to skylark at that very important vocation, the manufacturing of an individual.

55 WEST FORTY-SEVENTH STREET.

**Retention of Foreign Protein by the Kidney—A Study in Anaphylaxis.**—R. M. Pearce found that extracts of the kidneys of normal rabbits prepared one, two, three, and four days after the intravenous injection of egg-albumin and horse serum have the power to sensitize guinea pigs to a second injection of these proteins. The sensitization by first and second day extracts was constant and intense, that by the third day extracts was less marked and sometimes was not evident, and that by the fourth day extracts was only occasional, and when present was always weak. Comparative studies of the power of the blood, liver, and kidney to sensitize, indicate that this sensitization depends on the content of foreign protein in the circulating blood and not upon its accumulation or fixation in the tissues of an organ. This opinion is supported by other experiments in which the sensitizing power of the blood and of the extracts of unwashed kidneys was compared with the sensitizing power of extracts of washed kidney. The weak sensitizing power of washed kidney extract is taken as evidence that foreign proteins of the kinds used are not held in the tissues of the kidney, and if these results may be applied to nephrotoxic proteins, it follows that nephritis is not due to selective and persisting fixation of a protein by the renal cells, but is due to the action of such protein merely during the process of its elimination. In experimental acute nephritis of the type due to uranium nitrate, the power of sensitization to egg-albumin is prolonged for twenty-four hours, and in the chromate type for forty-eight hours, thus indicating that in nephritis, of the acute type at least, the elimination of a foreign protein is delayed. Attempts to study by the same methods the elimination of vegetable and bacterial proteins have failed.—*Journal of Experimental Medicine.*

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## MONGOLISM AND ANCESTRAL AFFINITIES.

EVERY busy pediatric clinic sees annually a large number of cases of mongolian idiocy. The characteristic physiognomy makes the diagnosis a simple one. Those who have had ample opportunities of studying these cases in insane asylums and in institutions for feeble minded children have come to the conclusion that mongolism represents an arrest of development. C. Paget Lapage in his recent volume on "Feeblemindedness in Children of School Age" notes that many of these cases are the result of an exhaustion of the reproductive powers of one or both parents. In the majority of instances the mongol is the last child in a large family. Shuttleworth has pointed out that many of the characteristic features of mongols indicate an unfinished state; the poorly developed ears, the lax ligaments, the muscular hypotonia, the tendency to congenital heart disease, and the maldevelopment of the brain, are all signs of an arrest of development.

There is another theory, however, which regards mongolian idiocy as an instance of atavism, as a reversion to some primitive type of human structure. According to this view mongolism is of phylogenetic rather than of ontogenetic significance. F. G. Crookshank in a most interesting and scholarly thesis on this subject in the *Universal Medical Record*, January, 1913, regards mongolism as a form of infantilism of phylogenetic origin. The marked cases of this condition are stamped with simian characteristics, while the less pronounced cases resemble closely individuals of mongolian extraction. There is considerable evidence that there is an infusion of Mongolian or of Mongol-Malayan blood in many of the nations of Europe. The Finns, the Laps, the Turks, the Magyars, and the Basques are all of Mongolian origin. In the Celtic, Iberian, Melanochroic, or Mediterranese type of European a peculiar greenish complexion suggests a Mongolian heritage. Mongolian idiocy is regarded as a recrudescence of the dormant Mongolian element transmitted from the remote past. Crookshank believes that the "link between both the ancestral and environmental conditions that determine the growth of the organism must be sought for in the polyglandular balance." Mongolism is always first manifested during thymic life and tends to disappear when the other ductless glands develop their full functional activity. It is pointed out that mongoloids often have thymic attacks, and that the administration of thymus gland given in combination with thyroid produces a beneficial effect in cases without marked mental weakness or gross bodily defect.

## PURIFICATION OF WATER BY STORAGE.

THE question as to how best to supply a pure or comparatively pure water for human consumption is agitating the minds of health authorities everywhere. With regard to the most effective mode of rendering water safe, there is no decided unanimity of opinion. Some assert that slow sand filtration achieves this object best while others pin their faith to mechanical filtration. In some parts of Europe, notably in Paris, purification of water by ozonization seems to have met with a fair measure of success, while in the United States and in Canada chlorinization is a favorite method. A. C. Houston of London is a believer in the purification of water by storage, and at the meeting of the International Congress of Hygiene in Washington in September last read a paper in which he set forth his views. He discussed the purification of water by storage under three main headings: (1) sedimentation; (2) equalization, and (3) devitalization. The chief conclusions arrived at so far are as follows: Storage reduces (*a*) the number of bacteria of all sorts; (*b*) the number of bacteria capable of growing on agar at blood-heat; (*c*) the number of bacteria, chiefly excremental bacteria, capable of growing in a bile-salt medium at blood-heat; (*d*) the number of coli-like microbes; (*e*) the number of typical *B. coli;* (*f*) the amount of suspended matter, pigment, and ammoniacal nitrogen; and (*g*) the hardness.

Storage alters certain initial ratios, for example, (*h*) it reduces the number of typical *B. coli* to a proportionately greater extent than it does the number of bacteria of all other sorts; (*i*) the color results improve relatively to a greater extent than those yielded by the permanganate test. Storage if sufficiently prolonged, devitalizes the microbes of water-borne disease. Storage has a marked "levelling" or "equalizing" effect. An adequately stored water is to be regarded as a "safe" water and the "safety change" which has occurred in a stored water can be recognized and demonstrated by appropriate tests. The use of stored water enables a constant check to be maintained on the safety of a water supply antecedent to and irrespective of filtration. The use of stored water goes far to wipe out the gravity of any charge that a water supply is derived from polluted sources. The use of adequately stored water renders any accidental breakdown in the filtering arrangements much less serious than might otherwise be the case. The storage of a public water supply has obvious advantages and Houston's arguments in its favor have much to justify them, although storage on a large scale is open to the objection that it requires a good deal of space and is costly.

## TREATMENT OF RECENT INJURY BY MOBILIZATION AND MASSAGE.

Lucas-Championnière was the first distinguished surgeon to advocate and to practise the treatment of fractures by mobilization and massage. His disciples have so developed his method that it is now applied to other forms of recent injury, accidental and postoperative, in fact, to almost every class of case, in which massage forms an integral part of the treatment. According to James Mennell, who read a paper on the subject before the Medical Society of London, an epitome of which was published in the *Lancet*, February 1, 1913, the massage used consists of a slow, light, rhythmical stroking in the neighborhood of the injury, the movement being merely a "caress" and "almost resembling a mesmeric pass," while the actual site of the injury is scrupulously avoided. The mobilization must be regarded in the light of a therapeutic measure, the dose being meted out with care and accuracy. It consists of two elements, passive movement and active movement. When the dose of passive movement is being given the patient must be made to cooperate by actively relaxing the whole part. Failure to obtain this active relaxation, or the application of any other form of massage to the injured part is contrary to Lucas-Championnière's treatment, and absence of a satisfactory result in such circumstances must be ascribed to the practitioner and not to the treatment.

The main principle, or the underlying principle of the treatment is that "movement is life" and this axiom is carried into effect by massage which, however, is only the means of which mobilization is the end. The difference between the generally accepted forms of massage and this form is that the former aim at compulsion, whether of the blood in a given direction or of some movement, while the massage advocated by Lucas-Championnière aand his followers attempts, by its reflex action through the nervous system, only to restore the tone of the vasomotor system which has been disorganized by the shock of injury, and in like manner to combat the injury sustained by the nerves in connection with the injured part. Mennell is enthusiastic regarding the beneficial effects of the Lucas-Championnière method and strongly recommends mobilization with massage for nervous complaints of all descriptions, for postoperative arthritis, and for every kind of injury or strain. Indeed, he claims that in any case in which treatment by massage is indicated, mobilization and massage will yield results far superior to those reached by ordinary massage.

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## Human Infection with the Bacillus Prodigiosus.

Interest in this microorganism has been centered chiefly in its use in conjunction with the streptococcus of erysipelas as one of the constituents of Coley's fluid. Although pathogenic to the lower animals, such as rabbits, mice, and guinea-pigs, it has not been known to cause infection in human beings. Parks has suggested that it may be the morbid cause in certain cases of diarrhea. The striking cultural characteristic of this bacillus is the marked coloration, varying from a pale pink to a deep blood-red, which it produces. An interesting case of human infection with this microorganism is reported by H. M. M. Woodward and K. B. Clark, in the *Lancet*, February 1, 1913. The patient was a man aged 24 who suffered from a chronic cough and expectorated from time to time, independently of the act of coughing, a pink stained sputum. This contained neither tubercle bacilli nor red blood cells, nor leucocytes, but produced on agar tubes a thick mixed growth of pink and white colonies. Subcultures from the white colonies showed a pure growth of the *Bacillus mesentericus*, while subcultures from the pink colonies showed all the characteristics of the *Bacillus prodigiosus*. A vaccine was prepared from this microorganism and was injected into the patient, as the result of which the latter's health began gradually to improve and his cough disappeared. The instructive point in this case is the fact that the expectoration of a pinkish sputum suggested a diagnosis of pulmonary tuberculosis, although no physical signs of this disease were present. The absence of red blood cells in such sputum would indicate that the coloration is not caused by blood, and further cultural tests in similar cases may reveal the presence of the *Bacillus prodigiosus*, human infection with which may not, after all, be extremely rare.

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## The Restitutio ad Integrum After the Severe Affections of Childhood.

The question as to the amount of damage done by measles, scarlatina, and other infections of childhood to an individual's subsequent health, efficacy, and resistance to the diseases of maturity, and as to the amount of possible gain when applied against the loss, is an old and all-important one. It crops out in many directions. Scrofulous affections of childhood seem oftentimes to confer an immunity against tuberculosis in adult life. Those who are specially prone to severe infectious diseases in childhood seem to possess a certain immunity against cancer. At a recent medical meeting at Strassburg (*Deutsche medizinische Wochenschrift*, January 9) Czerny discussed an excellent way to trace a relationship between childhood infections and adult health, to wit, the status of those who are eligible to military duty. It has already been claimed that more breast than bottle-fed subjects are eligible. Czerny expresses the opinion that such a conclusion is unwarrantable, for bottle milk may replace perfectly breast milk under proper conditions. Further, any shortcomings from this source are quickly outlived. There are constitutional peculiarities, however, manifested in infancy, which can never be outgrown fully, and we find at the recruiting age evidences enough of the exudative diathesis. Among children typhoid carriers do not occur, for their bile is believed to be more bactericidal than that of the adult. It is a question whether recovery from myxedema, so far as the mental defect goes, is ever quite complete; or, perhaps, rather whether the intellect had been intact before that condition developed. It has been advocated in Germany that no recruit for the army be received who could not speak at the age of one year. Such a rule might keep out some defectives but it would exempt from military service many a sturdy and mentally sound citizen.

## News of the Week.

**Message on State Health.**—In a recent message to the New York State Legislature Governor Sulzer transmitted the preliminary report of the commission appointed by him to investigate public health matters in this State. The Governor in his message calls attention to the fact that there is now no well co-ordinated system of public health administration in the State and asks that the State Department be given broader powers. The chief recommendations of the committee may be briefly summarized as follows: That the tenure and compensation of the State Health Commissioner be such as to secure and retain the most efficient man in the State for that service, and that he be required to devote substantially his entire time to his official duties; that a public health council be established with power to adopt sanitary regulations; that the State Commissioner of Health exercise supervision over local health authorities and be specifically charged with the enforcement of the public health law; that the State outside of New York City be divided into at least twenty sanitary districts with an expert sanitary supervisor in each, devoting full time to health work; that the duties of town and village health boards, not otherwise provided for, be transferred to town boards and village boards of trustees; that health officers of towns and villages receive an annual minimum salary equivalent to at least 15 cents per inhabitant of the village or town; that health officers of towns and villages be charged with the following duties: (a) annual survey and continual supervision of their districts; (b) examination of all school children; (c) inspection of all school buildings and places of popular assemblage; (d) popular education as to public health; (e) securing full registration of communicable diseases and of births and deaths; (f) enforcement of public health laws and regulations; that modern statutes covering registration of births and other vital statistics be enacted; that authority be given to each city, county, village, and town to employ trained nurses as infant welfare nurses, school nurses, tuberculosis nurses, and to visit the sick; that the tuberculosis law be amended so as to provide (a) for more complete reporting of cases; (b) for supervision of reported cases by trained nurses; (c) for compulsory removal and detention of dangerous cases; that additional State provision for incipient cases of pulmonary tuberculosis be made; that a bureau of child hygiene and a bureau of public health nursing be added to the State Department of Health; that county hospitals for tuberculosis be established; that adequate laboratory facilities be made readily available for all health authorities; that contagious disease hospitals be established by local authorities, to be under the inspection of the State Department of Health; that midwifery be regulated by the State; that the reports of health officers be made presumptive evidence of facts stated, and such officers be freed from personal liability, if acting in good faith; that the educational work of the State Department of Health be extended; that encouragement be given to courses in sanitary science in educational institutions. The committee, which, as already stated, consists of Dr. Hermann M. Biggs, Mr. Homer Folks, Mr. John H. Kingsbury, Dr. E. R. Baldwin, Dr. W. E. Milbank, Miss M. A. Nutting, Mr. John C. Otis, and Mr. Ansley Wilcox, states that it will make further recommendations on the advisability of establishing a system of medical examination as a condition to securing a marriage license; the regulation of housing in second and third-class cities; the better protection of water supplies, and the establishment in medical colleges of a course of instruction in sanitary science which will ultimately be required of health officers.

**Dr. F. F. Friedmann,** who claims to have discovered a cure for tuberculosis, is said to have made application at Washington for a patent to cover the remedy and its manufacture. If the remedy is simply a culture of bacteria, it is difficult to understand how it can be patented. However, Dr. Friedmann is now in this country and the therapeutic value of his culture will soon be tested here, though he is reported to have refused to accept the terms of the widely advertised million-dollar test.

**German Hospital.**—The annual report of the German Hospital and Dispensary, New York, gives the total number of patients treated during the past year as 48,228, of whom 6,935 were in the hospital department, receiving 80,040 days of care, while in the dispensary department 106,849 consultations and treatments were given. At the annual meeting held last week, Mr. Adolph Kuttroff was elected president of the Hospital.

**Health Board Quits.**—The members of the Board of Health of Summit, N. J., have presented their resignations to the Mayor of the town, to take effect on March 1. The Board declares that the Common Council has refused to pay the bills which were approved and passed by the Board.

**Vivisection Bill Killed.**—The Judiciary Committee of the New York Senate on February 18, by a vote of six to four, refused to report the McClelland bill, creating a commission for the investigation and regulation of the practice of vivisection in the State. A motion to reconsider was laid on the table and it is probable that nothing more will be heard of this bill, at least until next year.

**Gorgas to Ecuador.**—The United States Senate on February 20 voted to grant permission to Col. W. C. Gorgas of the Isthmian Canal Commission to enter the service of the Republic of Ecuador for the purpose of cleaning up the port of Guayaquil, known as the "pest hole of the Pacific."

**Harvey Society.**—Prof. Edward G. Conklin of Princeton University will lecture before the Harvey Society at the New York Academy of Medicine on Saturday evening, March 8, at eight-thirty, his subject being, "The Size of Organisms and Their Constituent Parts in Relation to Longevity, Senescence, and Rejuvenescence."

**Pure Milk Bill.**—At the request, it is said, of Governor Sulzer, a bill was recently introduced in the New York State Legislature creating a Sanitary Milk Commission to take over certain duties of the Department of Agriculture and to be charged with the execution of all laws relating to the production, manufacture, storage, transportion, and sale of milk. The board is to be composed of a Milk Commissioner, at a salary of $7,000 a year, the Commissioner of Health of New York City, and the State Commissioner of Agriculture. The board will have the power to fix standards of purity for milk and to regulate its sale in every particular.

**Medical Licenses in Oregon.**—As a result of the recent examinations held by the Oregon State Board of Medical Examiners, licenses to practice

medicine in the State were issued to sixty-nine physicians, or seventy-two per cent. of those who applied.

**Medical Freemasons.**—A Lodge meeting of Medical Freemasons who are members of the XVIIth International Congress of Medicine will be held on Monday, August 11, 1913, in the Grand Temple at Freemasons' Hall, Great Queen Street, London W. C. The Most Worshipful the Pro Grand Master, the Right Hon. Lord Ampthill will open the Lodge at 5 P. M. and close it at 6 P. M., and at 4 P. M. a reception will be held in the Connaught Rooms, adjoining the Hall. It is requested that all who wish to be present will communicate with the Grand Secretary of their own jurisdiction as soon as possible in order that suitable arrangements may be made.

**Loving Cup for Dr. Deaver.**—Dr. John B. Deaver, patron of the John B. Deaver Surgical Society of the University of Pennsylvania, was the guest of honor at a recent meeting of the society and was presented by the members with a silver loving cup.

**Pennsylvania Alumni.**—At the twenty-first annual dinner and reunion of the Philadelphia Alumni Association of the Medical Department of the University of Pennsylvania, held on February 15, the following officers were elected for the ensuing year: *President,* Dr. Clarence P. Franklin; *Honorary Vice-President,* Dr. Howard E. Sutton; *Vice-Presidents,* Dr. Charles Smith, Dr. William Duffield Robinson, and Dr. Charles Claxton; *Corresponding Secretary,* Dr. B. Franklin Stahl; *Recording Secretary,* Dr. William S. Wray; *Treasurer,* Dr. Morris B. Miller. The sum of $500 was appropriated by the association for the establishment of a scholarship in honor of Dr. Roland G. Curtin and to be known by his name. This amount is to be increased by appropriations of $500 annually until the fund is completed.

**Sanitation of Cuba.**—The work of sanitation which has been carried on in the cities of Cuba has been widely reported and the excellent results acclaimed, but the interior of the island is still but little known, and it is, therefore, of interest to note what is being done in the mountains to the west of Santiago de Cuba where there are extensive copper mines. The health of the town of Cobre, a mining town of some two thousand inhabitants, is looked after by Dr. Guillermo de Piña, who is the Sanitary Commissioner of the District and the head of the hospital maintained at Cobre by the Cuba Copper Company for the care of its miners. During the past year Dr. de Piña treated 2,077 patients with only two deaths. In the hospital 1,870 patients were cared for, there being 54 cases of serious injuries and 514 of minor accidents in the mines. The record is the more remarkable as only a few years ago Cobre was the usual unsanitary Cuban village with not infrequent outbreaks of yellow fever, and this vast improvement is mainly due to Dr. de Piña's six years of faithful service.

**City Death Rate.**—During the week ending February 15, there were in New York City 1,732 deaths, a rate of 16.82 per thousand, as compared with 1,604 deaths and a rate of 16.17 during the corresponding week of last year. The increase was due largely to the greater number of deaths from pneumonia, from diseases of the kidney, and from violence. In measles, scarlet fever, typhoid fever, cerebrospinal meningitis, and pulmonary tuberculosis there were considerable decreases.

**Gifts to Charities.**—By the will of the late Mr. C. C. Weld of Newport, R. I., the Boston Lying-In Hospital receives $125,000, and the Boston Dispensary $100,000, while the residuary estate, valued at nearly $4,000,000, is in case the daughter of the decedent dies without issue, to be divided between the Massachusetts General Hospital and the Massachusetts Institute of Technology.

Mt. Sinai Hospital and the Montefiore Home, New York, receive $100 each under the will of the late Mr. Lewis Lowengood of this city.

The Methodist Hospital, Philadelphia, and St. Luke's Hospital, South Bethlehem, Penn., receive $21,000 each under the will of the late Mr. John Fritz of Bethlehem.

**New York Psychoanalytic Society.**—At the January meeting of the Society, the following were elected officers for the ensuing year: *President,* Dr. H. W. Frink; *Vice-President,* Dr. B. Onuf; *Secretary,* Dr. A. A. Brill.

**Fourth Councilor District (N. C.) Medical Society.**—At the annual meeting held at Rocky Mount on February 11, the following officers were elected: *President,* Dr. W. H. Smith, Goldsboro; *Vice-Presidents,* Dr. E. B. Quiller, Rocky Mount; Dr. G. D. Vick, Selma; *Secretary-Treasurer,* Dr. Henry B. Best, Wilson.

**Medical Society Elections.**—Marine County (Cal.) Medical Society: Annual meeting at San Rafael on January 16. Officers elected: *President,* Dr. H. O. Hund; *Vice-President,* Dr. W. J. Wickman; *Secretary-Treasurer,* Dr. A. H. Mays.

New Haven (Conn.) Medical Society: Annual meeting on January 15. Officers elected: *President,* Dr. William F. Verdi; *Vice-Presidents,* Dr. W. H. Crowe and Dr. Frank A. Kirby; *Secretary,* Dr. Charles E. Sanford; *Treasurer,* Thomas V. Hynes.

Perry County (Ill.) Medical Society: Annual meeting at Duquoin on January 14. Officers elected: *President,* Dr. Max Adles, Duquoin; *Vice-Presidents,* Dr. J. S. Templeton, Pinckneyville; Dr. J. S. Cleland, Swanwick, and Dr. H. W. Wolf, Tamaroa; *Secretary-Treasurer,* Dr. Rolla D. Pope, Duquoin.

Douglas County (Kan.) Medical Society: Annual meeting at Lawrence on January 14. Officers elected: *President,* Dr. S. T. Gillespie; *Vice-President,* Dr. E. Bumgardner; *Secretary,* Dr. H. L. Chambers; *Treasurer,* Dr. E. Smith.

Johnson County (Neb.) Medical Society: Annual meeting at Tecumseh on January 15. Officers elected: *President,* Dr. T. E. Fairall, Tecumseh; *Vice-President,* Dr. B. F. Gay, Tecumseh; *Secretary-Treasurer,* Dr. A. P. Fitzsimmons, Tecumseh.

Central Oklahoma Medical Society: Annual meeting at Enid on January 16. Officers elected: *President,* Dr. T. M. Aderhold, El Reno; *Vice-President,* Dr. D. D. McHenry, Oklahoma City, and Dr. W. E. Lamberton, Enid; *Secretary-Treasurer,* Dr. J. M. Cooper, Enid.

Franklin County (Penn.) Medical Society: Annual meeting at Scotland on January 21. Officers elected: *President,* Dr. William C. Schultz, Waynesboro; *Vice-Presidents,* Dr. Benjamin F. Myers, Chambersburg, and Dr. M. Webster Stoffer, New Franklin; *Secretary,* Dr. John J. Coffman, Scotland; *Assistant Secretary,* Dr. Paul P. Allen, Chambersburg, Penn.; *Treasurer,* Dr. Johnston McLanahan, Chambersburg.

Craighead County (Tenn.) Medical Society:

Annual meeting at Jonesboro on January 11. Officers elected: *President,* Dr. P. W. Lutterloh; *Vice-President,* Dr. Ira Ellis; *Secretary-Treasurer,* Dr. R. H. Willett.

Spokane County (Wash.) Medical Society: Annual meeting at Spokane on January 9. Officers elected: *President,* Dr. E. B. Nelson; *Vice-Presidents,* Dr. Charles F. Eikenbary and Dr. H. P. Marshall; *Secretary,* Dr. Carl H. Weisman; *Treasurer,* Dr. T. A. Vessy.

Milwaukee (Wis.) Medical Society: Annual meeting January 14. Officers elected: *President,* Dr. Gilbert E. Seaman; *Vice-President,* Dr. Hoyt E. Dearholt; *Secretary,* Dr. C. A. Baer; *Treasurer,* Dr. R. C. Brown.

Panhandle District (Tex.) Medical Society: Annual meeting at Wichita on January 15. Officers elected: *President,* Dr. J. C. Anderson, of Plainview; *First Vice-President,* Dr. Everett Jones, Wichita Falls; *Second Vice-President,* Dr. Ballew, Memphis; *Secretary,* Dr. J. J. Crume, Amarillo.

Yazoo County (Miss.) Medical Society: Annual meeting at Yazoo City on January 13. Officers elected: *President,* Dr. George Jones; *Vice-President,* Dr. W. E. Noblin; *Secretary-Treasurer,* Dr. S. W. Purifoy.

Portsmouth (N. H.) Medical Society: Annual meeting on February 4. Officers elected: *President,* Dr. J. D. Carty; *Secretary,* Dr. W. P. Crosby; *Treasurer,* Dr. C. W. Hannaford.

Aberdeen District (S. D.) Medical Society: Annual meeting at Aberdeen on January 29. Officers elected: *President,* Dr. Robert D. Alway, Aberdeen; *Vice-President,* Dr. James D. Jones, Groton; *Secretary,* Dr. W. D. Farrell, Aberdeen; *Treasurer,* Dr. J. E. Bruner, Frederick.

Lavaca County (Tex.) Medical Society: Annual meeting at Hallettsville on January 31. Officers elected: *President,* Dr. James E. Lay, Hallettsville; *Secretary-Treasurer,* Dr. Spiller, Yoakum.

**Obituary Notes.**—Dr. Kingman B. Page of New York, a graduate of the Bellevue Hospital Medical College in 1887, died at his home on February 19, aged 49 years. He was a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the American Urological Association, the Greater New York Medical Society, the Medico-Surgical Society, and the Harlem Medical Society, genito-urinary surgeon to St. Mark's Hospital Dispensary, and visiting genito-urinary surgeon to the People's Hospital.

Dr. William J. Callan of Brooklyn, N. Y., a graduate of the Long Island College Hospital in 1892, died at St. Joseph, N. Y., on February 13.

Dr. George H. Witter of Wellsville, N. Y., a graduate of the College of Physicians and Surgeons, Baltimore, in 1885, a member of the American Medical Association and of the New York State and Allegany County Medical Societies, and State Senator from the Fourth New York District from 1908 to 1910, died at his home on February 13, aged 54 years.

Dr. James Francis Duffy of Providence, R. I., a graduate of the University of Vermont College of Medicine, Burlington, in 1891, and a member of the Rhode Island State and Providence District Medical Societies, died at his home on February 8.

Mr. Joseph V. Stadish, for fifty years clerk of the Bellevue Hospital Medical College and of the University and Bellevue Hospital Medical College, New York, died on February 1 from angina pectoris. During his long service Mr. Stadish had endeared himself to thousands whom as medical students he had aided and encouraged, and at the time of his sudden death a plan was under way to present to him a testimonial commemorating his fifty years as clerk of the college.

Dr. James Jeremiah Williams of New York, a graduate of Bellevue Hospital Medical College, New York, in 1874, died at his home on February 12, aged 67 years.

Dr. James M. Gray of Hutchinson, Kan., a graduate of the College of Physicians and Surgeons, Keokuk, Ia., in 1883, and of the Kansas City Medical College in 1893, died at his home from pneumonia after a short illness on January 5, aged 50 years.

Dr. Francis H. Cohan of Leominster, Mass., a graduate of the Medical School of Maine, Portland, in 1901, a member of the American Medical Association and the Massachusetts State and Worcester County Medical Societies, and surgeon to the Leominster Hospital, died suddenly on February 13, aged 42 years.

Dr. Thomas Janes Carswell of Waycross, Ga., a graduate of the Medical Department of the University of the South, Sewanee, Tenn., in 1908, a member of the Georgia State and Ware County Medical Societies, and secretary of the Eleventh Councilor District, was injured in an automobile accident on February 10, and died a few hours later in the King's Daughters' Hospital, aged 35 years.

Dr. F. H. Aveline of Marion, Ind., died at his home on February 9, aged 55 years.

Dr. Edward H. Parker of Eau Claire, Wis., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1879, and a member of the American Medical Association and the Wisconsin State and Eau Claire County Medical Societies, died at his home suddenly on February 7, aged 58 years.

Dr. John S. Potts of San Francisco, Cal., a graduate of the American Medical College, St. Louis, in 1875, and of the College of Physicians and Surgeons, Keokuk, Ia., in 1877, and a member of the California State and San Francisco County Medical Societies, died at his home on February 9, from Bright's disease, aged 72 years.

Dr. Manuel Garcia Monteiro of Cambridge, Mass., a graduate of the College of Physicians and Surgeons, Boston, in 1890, died at his home from pneumonia, on February 14, aged 54 years.

Dr. Adolph O. Bjelland of Mankato, Minn., a graduate of the University of Minnesota College of Medicine and Surgery, in 1896, and a member of the American Medical Association and the Minnesota State and Blue Earth County Medical Societies, died recently at his home, aged 42 years.

Dr. James Reagles, Captain in the United States Army, retired, a graduate of the Bellevue Hospital Medical College, New York, in 1864, died recently at his home in Schenectady, N. Y.

Dr. Henry A. Savard of Lawrence, Mass., a graduate of Laval University, Medical Department, Quebec, in 1881, died at his home after a long illness, on February 12, aged 50 years.

Dr. Samuel Souders of Dean, O., a graduate of the Bellevue Hospital Medical College, New York, in 1871, and a member of the Ohio State and Montgomery County Medical Societies, died at his home on February 9, aged 81 years.

# Correspondence.

## ERYSIPELAS COMPLICATING MEASLES.

To the Editor of the Medical Record:

Sir:—About five weeks ago I was called to attend E. K., five years old, for what proved to be measles. This also developed in two other children of the family, and was, according to the account of the parents, a second attack with all the three children. When the rash was beginning to fade and the temperature had gone down to 101° or so, the child suddenly developed a temperature of 104°, and at the same time a red swelling appeared over the right eye. This swelling afterward ran the typical, though mild, course of a case of erysipelas involving only the right side of the face, and terminating in about eight days without any recurrence. As I have never seen erysipelas as a complication of measles, and as I have not seen it mentioned in any of the books as a complication in this disease, I have thought it worth while to report this case.

J. C. Josephson, M.D.

1393 Washington Ave., New York.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

SANATORIUM TREATMENT—RARE BONE DISEASE—WASHING RENAL PELVIS WITH COLLARGOL—INSURANCE VOTE IN PARLIAMENT AND CHEAP DRUGS—ST. THOMAS'S HOSPITAL NEW DEPARTMENT—ITEMS—OBITUARY.

London, February 7, 1913.

Questions as to the value of the sanatorium treatment are continually cropping up in conversation and many more doubts are expressed than appear in formal articles. Sometimes these doubts find expression at the societies. Thus at the Royal Society of Medicine last week Dr. H. D. McCullock expressed a doubt whether our British sanatoriums might not be a waste of money on account of the absence of high altitudes and, further, whether *x*-rays offered really satsfactory evidence. Dr. Fred Taylor, president of the section, held that a comparison of modern sanatorium treatment with former methods either in hospital or at home would be of considerable value.

The paper which elicited these remarks was by Dr. Noel Bardswell, and comprised the records of 1079 patients discharged from King Edward Sanatorium from July, 1907, to July, 1911. The diagnosis of pulmonary consumption was confirmed by the staff in 1027 cases. Of these bacilli were found in 82.7 per cent. One hundred and twelve had been lost sight of, but 915 were traced to October, 1912. Of these 915, bacilli had been present on admission in 764, but in 151 none was detected at any time. Four hundred and thirty-seven of the 764 were alive and well in 1912, and 327 were dead. As to the disappearance of bacilli while under treatment, of the 764 admitted with bacilli present, 148, or 19.3 per cent., lost them before discharge; of these 148 in 1912, 124 were well or alive and 24 dead. In commenting on the records Dr. P. Horton-Smith Hartley emphasized the importance of distinguishing in pulmonary consumption cases with tubercle bacilli in the sputum from those without. As to diagnosis in the latter he said a focal reaction after an injection of tuberculin left little doubt. Dr. T. D. Acland was not satisfied bacilli in the sputum afforded a fair test of their presence in the lung and asked about the relationship between bacterial tests and the presence of bacilli. Dr. Cecil Wall suggested some additional data, such as age of patients, time passed in sanatorium and duration of disease would add to the value of the statistics. Dr. F. Parkes Weber agreed that the only criterion on which to base a diagnosis was the presence of bacilli in the sputum. Many persons had a certain amount of tuberculosis but never became tuberculous patients. They reacted to modern bacterial tests. Examination by the old physical signs aided by Roentgen rays should be employed in addition to other methods.

At St. Bartholomew's Hospital the Hunterian Society held a clinical and pathological meeting on Jan. 22, when an interesting exhibition of cases, specimens and skiagrams was on view. Among the cases the following cannot fail to interest you: It seems almost if not quite unique and Mr. P. Kidd, who showed it, said he had searched the literature in vain for a parallel case. The patient was a boy of eight who from his third year had been from time to time fracturing his long bones. At three years of age he fractured the right femur and the thigh swelled to such an extent that amputation had been advised under the impression that it was a case of sarcoma. The parents did not consent and the swelling subsided. At six, he broke his left arm and similar swelling followed and subsided. Two months ago he again injured this arm and it swelled again. The boy's mother and eldest brother had both had multiple fractures and lost a limb from sarcoma. The mother's father and brother had fractured bones from the slightest injury. The patient was a pale lad; his skull, face, spine, ribs, sternum, clavicles, scapulæ, and pelvis seemed normal. His left arm showed a fusiform swelling 15 inches in circumference, with tense, shiny skin, and superficial veins dilated; movements of elbow and shoulder joints free. A skiagram showed a fracture of the shaft and a mass of irregular, trabeculated new bone, but most of the swelling threw no bony shadow. Swelling of the right femur extended throughout the length of the bone, the entire shaft being seen in the skiagram as a meshwork of trabeculæ; a similar meshwork was seen at the upper end of the right radius, of the left tibia and the tarsal bones. The right and left tibia and fibula, and radius and ulna were all bent about their middles. Mr. Kidd hardly knew what name to give the disease. There were no signs of rickets or syphilis. The skiagrams suggested fibrocystic disease of bone (von Recklinghausen), but he thought every obscure bone disease was labeled as his. In osteomalacia the bones bent, but these broke. On the whole he was inclined to ticket it as an irregular type of that somewhat indefinite class *osteogenesis imperfecta*.

At the same meeting Mr. Kidd also showed skiagrams of kidneys of which the pelves had been filled with collargol. He is sure such injection is a valuable addition to our methods of examining renal cases. It is not difficult to do and scarcely, if at all, dangerous—in fact, he habitually washes out kidneys with collargol with the ureteric catheter in his out-patient department. There is one drawback, the patient cannot be anesthetized as it is quite impossible to tell how full the renal pelvis may be unless he is conscious to signify when pain appears. The radiographer, however, finds it best for these

patients not to be rendered unconscious. As to the two specimens, in one he had been able to prove by this method that one kidney was absent—in the other intermittent blocking of ureter resulting in widely dilated renal pelvis.

A supplementary vote is to be asked for during the next few days for nearly two millions, the amount by which Mr. Lloyd-George underestimated the initial cost of the act. Questions in parliament have been many all the week with a view of eliciting information and raising debate, but with little success. Members have been told that the sum set apart for drugs and appliances is so inadequate that some wholesale houses have been tempted to reduce quality and that "insurance quality" is now a recognized trade term. The size of bandages has been reduced so much that the Marquis of Tullibanding said he had some which might do to bind up a hen's leg but certainly not a child's. Another member said he had received a newspaper advertising "washed bandages" and drugs "suitable for chemists on the insurance panels."

The new department at St. Thomas's Hospital for tuberculosis was opened on Monday. It is very complete and forms an independent unit which fits in with the scheme of the Borough of Lambeth controlled by the M. O. H. It occupies the ground floor of the southern block of the hospital and contains a large waiting hall in connection with social workers' room under the lady almoner's department which makes inquiries as to the position of patients, the condition of their homes and advises them as to their mode of living and assists them otherwise. Beside the physicians' room is a small one for microscopical examinations of sputum and a dark room. Bacteriological work will be carried out in the hospital laboratory where the tuberculosis officer (Dr. Wingfield) will have the assistance of its staff. Tuberculosis patients under treatment by the medical staff were transferred to the new department on Monday and new ones will be admitted there in future. A small ward has been set apart for observation of special cases in the hospital.

Sir Launcelotte Gubbins, Director General of the Army Medical Service, and Sir Berkeley George Moynihan, were made Honorary Fellows of the Royal College of Surgeons in Ireland at the annual meeting on Feb. 1.

At a meeting of the profession in Edinburgh held on the 29th ult. in the Royal College of Physicians it was decided to found a memorial of the late Dr. George Gibson, whose death I mentioned in my letter a fortnight ago. It is proposed that the form shall be a research scholarship in clinical medicine, which is certainly appropriate to one devoted to that subject.

The Right Hon. Lord Ilkeston, M. D., F. R. C. P., died on Jan. 31 in his seventy-third year. He was better known to the profession as Dr. Balthazar Foster, physician to the General Hospital, Birmingham, and professor of medicine Queen's College. He was a member of the General Medical Council from 1887 to 1897. His treatise on "Method and Medicine" appeared in 1870 and was followed in 1874 by his perhaps better known "Clinical Medicine." Later he took up politics, especially in relation to the profession, with great earnestness, wrote on the public aspects of medicine and the "Powerlessness of the Profession" and eventually became a candidate for parliament, to which he was elected in 1887. He was then knighted and made P. C. He retired in 1910 and was raised to the peerage as Baron Ilkeston. He had been secretary to the Local Government Board, 1892-5, where he worked in favor of sanitary progress. Among other honors conferred upon him were D. C. L. of Durham and LL.D. of Montreal. He is succeeded in the Barony by his son, Balthazar Stephen S. Foster, born in 1867. Many societies, both medical and political, were represented at the funeral, Feb. 3.

Dr. Ch. Orton, consulting physician to the North Staffordshire Infirmary, which he had served in the several offices on the active staff from 1862 until 1889, died on Jan. 16 at the age of seventy-three. He at one time was in the army and attained the rank of Surgeon Major. He went to the Franco-Prussian war and wrote an account of his visit jointly with Dr. Spanton.

Dr. J. F. J. Sykes, Medical Officer of Health for St. Pancras for the last twenty-three years, has died in his sixtieth year. He was awarded the Haward medal of the Royal Statistical Society in 1900. For some years he was an examiner in hygiene in the Science and Art Department.

## OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

THE PLAGUE—PREVENTIVE VALUE OF DISINFECTION—MANILA MEDICAL SOCIETY—PERNICIOUS MALARIAL FEVER—STUDY OF MALARIA IN MINDORO—APPARENT INCREASE OF TYPHOID FEVER.

MANILA, P. I., January 18, 1913

THE last case of plague in the Philippine Islands occurred in Manila on December 25, 1912. Since the beginning of the outbreak, last June, there have been fifty-nine cases, of which fifty-three died.

During the month of December, in connection with the plague suppressive measures, a very interesting experiment was carried out. On December 17, 1912, a case of human plague occurred at No. 4 Calle Baraca. As soon as the case was removed, and before disinfection, two guinea-pigs, free from fleas, were placed in a wire cage and the cage then placed upon the floor near the place where the patient had slept. On December 21 both guinea-pigs died of typical plague, the diagnosis being bacteriologically confirmed. A similar experiment was carried out in a house on Calle Cabildo, and one on Calle San Fernando, where cases of plague had occurred, but in which immediate disinfection had taken place. In neither of these places did the guinea-pigs contract plague. This experiment would seem to indicate that the disinfecting and insecticide measures which are carried out by the Bureau of Health are effective.

The monthly meeting of the Manila Medical Society took place in the amphitheater of the College of Physicians and Surgeons, on January 6, 1913, at 8:30 P.M. Major Ashburn, the chairman of the Army Board for the Study of Tropical Diseases as they exist in the Philippine Islands, presented some additional evidence which tended to show that there were two distinct viruses concerned in the infection of smallpox.

Following this paper the following officers were elected for the ensuing year: President, Major Percy M. Ashburn; vice-president, Dr. R. E. L. Newberne; editor of the Bulletin of the Manila Medical Society, Dr. W. E. Musgrave; business manager of the Bulletin, and treasurer of the So-

ciety, Dr. W. E. Woodbury; associate editor of the Bulletin, Dr. A. G. Sison. Dr. Almon P. Goff was elected councillor for five years.

During the past week two deaths from pernicious malarial fever occurred among children in the city of Manila. These cases were microscopically confirmed and, as the children had not been out of Manila at any time, it appears that the infection must have been contracted in the city. So far as known, these are the first authentic cases of malaria that could be reasonably ascribed as having been contracted in Manila.

On January 12, 1913, a party composed of members of the Bureau of Health, the College of Medicine and Surgery, and the Philippine General Hospital proceeded to the Island of Mindoro, to the San José estate for the purpose of making a thorough clinical study of the cases of malarial fever that have been occurring in such numbers among the employees of the sugar companies that have recently begun operations on that island. Far back in the Spanish history of the island Mindoro has been considered one of the homes of pernicious malarial fever, and deaths frequently occurred among those who ventured there. Mindoro is one of the largest and most fertile islands in the Philippines, and yet is only sparsely inhabited, and this lack of population is probably due in a large measure to the pernicious malarial fever which has prevailed there in the past.

Typhoid fever is beginning to be a larger and larger factor in the public health situation in the Philippine Islands. It is difficult to obtain a reliable expression of opinion as to whether the disease is actually on the increase, or whether it has been overlooked heretofore. On account of the fact that the time of the health officials in the past has been so much absorbed by diseases like cholera, plague, smallpox, and leprosy, and since these have now been brought under control, it would seem possible that perhaps diseases like typhoid are receiving more attention. A few years ago the disease seemed to prevail more frequently in the vicinity of army posts and it is possible that it may have spread from there. Typhoid prevails now mostly in the western coast section of the mountain province, Pangasinan, and Pampanga Provinces. The exact manner of its spread would be a matter of much interest. There are no public water supplies and the use of other than sterilized canned milk is almost negligible.

# Progress of Medical Science

## Boston Medical and Surgical Journal.

*February* 13, 1913.

1. Diseases of the Middle Ear and Mastoid Cells. C. R. C. Borden.
2. The Diagnosis of Feeble-Mindedness Among Immigrants. J. G. Wilson.
3. Persistent Mouth Breathing Following Adenoidectomies. I. Sobotky.
4. A Note on the History of Retrograde Catheterization in Ruptures of the Urethra. C. G. Cumston.
5. The Teeth and Their Relation to the Body. G. H. Wright.
6. Oral Prophylaxis. H. W. Adams.
7. School Inspection and Dental Caries. W. J. Gallivan.
8. The Purpose of the Forsyth Dental Infirmary. T. Leary.
9. A Word on the Scientific, Economic, and Social Program of the Forsyth Dental Infirmary. H. DeW. Cross.
10. Abnormal Peritoneal Sacculation of the Ovaries Causing Acute Pain. E. Reynolds.

1. **Ear Complications of Infectious Diseases.**—C. R. Borden has collected a series of 2,232 cases of scarlet fever, measles, and diphtheria. Of this number, 746 cases of scarlet fever showed 11 per cent. of aural complications: 456 cases of measles, 28 per cent., and 952 cases of diphtheria, 2.9 per cent. Sixty-eight cases of mixed infection were the highest in the percentage of all middle ear complications, viz., 44 per cent. In measles, middle ear and mastoid symptoms occur during the height of the active process and adults are particularly liable to mastoiditis. In scarlet fever, middle ear involvement comes at any time during the course of the disease, and is by no means limited to the active stage. Adults are not especially liable to mastoiditis in scarlet fever. In diphtheria, otitis media or mastoiditis are not as active as in scarlet fever or measles, and the diagnosis is far more difficult to make for this reason.

3. **Mouth Breathing Following Adenoidectomies.**—I. Sobotky emphasizes the following points: For the cure of persistent mouth breathing nasal breathing exercises have not proven efficient. An operative treatment of the nasal condition is indicated. Such treatment must be appropriate for the age of the patient. Patients should have their adenoids removed before the typical high palatal arch is formed. If the high arch is formed the treatment should be dental, such as spreading the arch and regulating the teeth. Cutting a slice of mucous membrane from the enlarged lower turbinates, as an aid to nasal respiration, has given good results. A submucous resection should not be done in children under sixteen. Electrolysis, using the bipolar method, is effective in reducing the enlarged turbinates but is not suited for children.

10. **Peritoneal Sacculation of the Ovaries.**—E. Reynolds reports three cases of this condition. The history of the first case was as follows: A neurasthenic and somewhat ill developed girl of 22 years complained of sharp pain, varied by acute exacerbations, in the lower abdomen and back, mostly right-sided. This pain was of about a year's duration and the acute attacks were accompanied by frontal and occipital headaches, with hot flushes, and sweating of the right arm only. During these attacks she was somewhat hysterical. On examination there was a small uterus in retroversion, with some tenderness over the right broad ligament, but nothing else abnormal was felt. After two months' observation, and failure to obtain relief by minor means, the pain was plainly becoming more severe, and operation was advised. On January 15, 1911, the abdomen was opened by a small exploratory incision and the movable fundus drawn up. The left ovary was at once seen to be moderately enlarged and cystic, but in normal peritoneal relations. The right tube was visible throughout the greater part of its length, but at its distal extremity appeared to fuse with the broad ligament. On more careful inspection it proved to disappear into a slit in the broad ligament about three-quarters of an inch long and with edges so sharply defined as to be clearly congenital. Upon traction on the tube the ovary was visible lying within a peritoneal pocket, the mouth of which was too small to permit its withdrawal. The utero-ovarian ligament was perceptible at the inner angle of the slit. This was seized with forceps, and after some manipulation it proved possible to so rotate the ovary within the pocket as to bring it to the opening by one pole, in which position it was possible to withdraw it. It was moderately enlarged by several small follicular cysts and two good-sized corpora lutea. After resection of both ovaries, closure of the sacculus, a suspension of the uterus and the removal of the appendix the abdomen was closed. The patient made a good recovery and the attacks of ovarian pain ceased.

## New York Medical Journal.

*February* 15, 1913.

1. Asellius and the Discovery of the Lymphatic Circulation. F. P. Henry.
2. Friedmann's New Tuberculosis Remedy. H. J. Achard.
3. Acute Gonococcal Urethritis in the Male. Victor Cox Pedersen.
4. Multiple Professional Cramps in a Psychasthenic. T. A. Williams.
5. The Relation of Scoliosis to School Seating. J. W. Sever.

6. The Routine Disinfection of Schools. J. T. A. Walker.
7. Ether, Hot or Cold? C. R. Hervey.
8. Relation of Eustachian Tube to Chronic Catarrhal Otitis Media. H. Hays.
9. Epidemic Meningitis. F. J. Slataper.
10. The Worsted Truss. W. B. Jennings.
11. Carcinoma of the Lung. M. Freiman.

1. **Asellius and the Lymphatic Circulation.**—F. P. Henry notes that Asellius discovered the chyliferous vessels in 1622, in the course of an experiment in which he was trying to demonstrate the movements of the diaphragm in a dog. The lacteals were demonstrated in man in 1628, the subject being a criminal who was examined one and a half hours after his execution. The next important step in the history of the lymphatic circulation was the discovery of the thoracic duct by Pecquet, of Dieppe, in 1647. The honor of discovering the lymphatic vessels belongs to Rudbeck, of Sweden.

2. **Friedmann's Tuberculosis "Remedy."**—C. T. J. Achard states that while Friedmann has admitted under pressure that the living tubercle bacilli composing his "remedy" are obtained from the turtle, nevertheless he still refuses to describe the method he employs. In his informal report he describes at length his clinical results in a great variety of tuberculous cases treated with his remedy, by intramuscular and intravenous injection, sometimes one or the other, sometimes both simultaneously. He asserts that patients show surprising improvement after one or two injections. He injects his bacterin into newborn infants, although it contains living tubercle bacilli, and says that somewhat over one year after this inoculation not the slightest trace of scrofula or tuberculosis is to be found in any of these children. Friedmann's clinical results have been confirmed by a number of clinicians, although Blaschko and also Heymann showed only indifferent results in cases of skin tuberculosis and lupus. Citron admits that for treatment and for prophylaxis the use of living germs is correct in principle and was adopted by Jenner and Pasteur, but he insists that great care must be exercised as long as the details of Friedmann's method are not known; he refers to Pasteur's experience with chicken cholera vaccine, in which the avirulent virus became virulent and caused destructive epidemics.

5. **Scoliosis and School Seating.**—J. W. Sever concludes from his study that all school chairs and desks should be adjustable to height. Chairs and desks adjustable in other directions are not necessary. A slight plus distance of about one inch is a good standard to go by in the relation of the desk to the chair seat. The desk top should slope twelve to fifteen degrees, and should be wide enough to allow the whole arm to rest on it in writing. The chair seat should be flat with rounded corners and edges; or slightly concave to fit the buttocks. The chair back should be wide with but two outside uprights; no higher than the lower part of the shoulder blades, with an adjustable crossbar, convex forward and concave from side to side, to fit the lumbar curve. From a sanitary point of view, single standard desks and chairs are good, provided the other qualifications are not lacking. Benches, chairs of the kitchen backed type, movable chairs and settee chairs are distinctly bad. Physical education departments are essential in connection with all school departments. Pupils should have frequent rest and exercise periods.

6. **Routine Disinfection of Schools.**—J. T. A. Walker notes that the presence of a certain proportion of infectious children in schools is admittedly unavoidable. These children diffuse a certain amount of infective material, the removal of which by means of frequent and thorough washing of classrooms and cloakrooms is, on the ground of expense, impossible, or is at least so regarded by the education authorities; the daily sprinkling of the floors with a disinfectant solution offers an inexpensive and easy method of minimizing the harmful effects of that material during the intervals between cleansing. Viewed in this light—not as a panacea or as a substitute for cleansing—it is difficult to understand why the benefits to be derived from this process should not appeal more generally to those responsible for the management of the public schools.

10. **The Worsted Truss.**—W. B. Jennings states that there is nothing new in the use of worsted as a truss for infants, but it seems that many of the younger generation in medicine are not familiar with this use. The directions for the construction of the truss are as follows: Take eight or ten strands of a skein of white Germantown knitting wool, make a loop, and place the skein around the child's body below the navel, tighten, and bring the knot over the external ring, cut the free end, and bring it down on the inside of the thigh near the perineum and back up over the gluteal fold; then tie the cut free end to the band of worsted already around the pelvis. The author does not wish to be misunderstood in regard to the radical cure of hernia, but he strongly recommends the worsted truss for the newborn and infants a few weeks or months old, to be used until the hernia is cured (the muscles having become stronger) or until such a time as the child is old enough to stand the shock of an operation. It is simple, effective, and easy for the mother to learn to put on. It does not irritate or chafe, is easily washed, and is not expensive.

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## Journal of the American Medical Association.

*February* 15, 1913.

1. The Use and Abuse of Bacterial Therapy. J. Stone.
2. Pleural Effusion Due to Artificial Pneumothorax. C. M. Montgomery.
3. Benzol in the Treatment of Leucemia. F. Billings.
4. The Emetic Action of the Digitalis Bodies. C. Eggleston and R. A. Hatcher.
5. Mouth Infections. Their Etiology and a Consideration of What Effect They May Have on the Vital Organs and Their Tissues. M. L. Rhein.
6. Operation for Epithelioma of the Lower Lip. H. A. L. Ryfkogel.
7. Medical Supervision of Factory Employees. W. I. Clark.
8. The Technique of Gastroenterostomy. W. Bartlett.
9. Grafting and Traumatic Dissemination of Carcinoma in the Course of Operations for Malignant Disease. W. J. Mayo.
10. Temporary Embolism of the Mesenteric Artery. M. Bornstein.
11. An Unusual Type of Hydrocele. C. A. Parker.
12. A New Suprapubic Drainage Apparatus. E. G. Mark.
13. Syphilis of Sternum. M. Schulman.

3. **Benzol in Leucemia.**—F. Billings reports five cases of leucemia in which he employed this remedy. He refers to the fact that this method of treatment was introduced by von Koranyi. The doses administered by the author were 7 minims, gradually increased to 15 minims, four times a day, shortly after meals and at bedtime. He concludes that benzol in the doses given may at first stimulate the bone marrow, but very soon the effect is to make the leucocytic marrow hypoplastic. This may seem paradoxical, but it is apparent clinically. One is impressed with the drug as a powerful agent—a two-edged sword, which is apparently a remedy of great promise in leucemia, but which used carelessly may defeat the purpose of its use and produce an equally serious condition, namely, a plastic grave anemia, hypoplastic bone marrow and a fatal termination. The author advises the cautious use of only pure benzol. One should carefully watch its effects by frequent examination of the patient and his blood.

7. **Medical Supervision of Factories.**—W. I. Clark, concludes that it is possible for a simply equipped medical department to control with success the sickness and disability from accident in a large factory. A complete physical examination of all employees is perfectly possible and of great advantage to employer and employee. A system of prophylactic treatment in cases of sickness and accident will materially lessen the amount of sickness and decrease the loss of time. The sanitation of a large fac-

tory and all matters pertaining to the general health of the employees can best be maintained by a medical department. Far from exciting distrust and antagonism, a shop hospital creates a feeling of good will between employee and his employer.

**8. Technique of Gastroenterostomy.**—W. Bartlett describes the method employed by him for some years in performing gastroenterostomy, which allows the position and direction of the incision in both stomach and bowel to be accurately located better than the ordinary operation. After the abdomen has been opened the author exposes the highest part of the jejunum, without altering its normal direction, as it passes out from under the peritoneum. Two guide sutures are then placed in the wall of this structure at two points high up and almost 7 centimeters apart. The stomach is then brought down through an opening in the transverse mesocolon and the posterior wall of this viscus is matched accurately to that portion of the jejunum between the sutures. With the higher suture the contiguous stomach wall is caught at a point about midway between the two curvatures, while the lower, in a normal case, is inserted into the stomach wall, well toward the right and at, or very near, the greater curvature. Thus the position and direction of the jejunum determine the intended incision in the stomach so that when the viscera are replaced in the abdomen at the completion of the operation, they lie in approximately their normal positions. A continuous Lembert suture of silk is then placed, uniting the two points at which the viscera have been approximated by the guide sutures. The author's gastroenterostomy clamp is now placed in position with the middle blade under the line of union made by the running suture. The clamp is then locked, and the stomach and intestine are opened. An inside row of through-and-through continuous sutures is carried completely around the opening. The clamp is now removed, so as to facilitate approximation and the through-and-through continuous sutures are covered by an outer row of silk sutures, which brings together the serous surfaces. The lips of the wound in the transverse mesocolon are now attached to the suture line in several places. The gastroenterostomy clamp is made up of three blades held together by two screws. The advantages of using the clamp are two-fold; it exerts a uniform pressure along its three blades, and this pressure can be graduated to any desired degree, since two of its blades float.

**9. Grafting of Cancer.**—W. J. Mayo notes that cancer grafting may occur spontaneously, especially at points of contact like the labia, and in the gastrointestinal tract. In the large intestine, at least, grafting may occur not only by direct contact, but by the detachment of cancerous cells and their carriage to distant points. These possibilities have been recognized since the days of Rokitansky and Virchow, but little has been written about them in recent years. Admitting the possibility of spontaneous grafting, one must also recognize that it may occur from surgical manipulations, and the author gives illustrations of where it is liable to occur. Since one of his early experiences he has practiced searing the raw surfaces of the stomach and duodenal stumps following partial gastrectomy for cancer, because he believes grafting may happen from the bits of loosened cancer tissue freed at the operation and left in the stomach cavity. Cancer occurs frequently and is especially common in Douglas' pouch, and the ovaries are specially susceptible and the original focus may be obscured. Such pathological accidents may occur in skin grafting as epithelial cancer has a potential initiative far in advance of normal epithelium. One cause of the small percentage of cures of cancer of the cervix is the proximity of the ureters to the cancerous growth. While they are not often involved primarily, one cannot push them away from their contact with the cancerous growth without risk of infection. Traumatic dissemination of cancer growth is not rare, and may occur through ignorant handling of the cancer tumor. Embolic vascular dissemination is also common, especially in cancer of the rectum, the infected thrombi being carried through the derivatives of the portal vein to the liver. For nearly fifteen years the author has abandoned cutting instruments and has used the cautery in performing vaginal hysterectomy for cervical cancer, and has had with it a better percentage of cures. The better results of abdominal hysterectomy for cancer of the cervix may not be due so much to the pelvic and iliac lymphatics as to the thorough cauterization of the cervix very probably before opening the abdomen. The removal of pieces of tumor for microscopic examination should be done with some precaution and, if possible, preparations should be made for the immediate removal of the growth if malignancy is detected. In any operative work on cancers a specialized technique should be used, considering them as foci of virulent infection. The first and most important thing in these operations is wide local dissection, and Heidenhain's rule of cutting at least three centimeters away from the visible disease is now considered too narrow for safety. The second principle is the removal of the tributary lymphatics, and the third is to avoid traumatic dissemination of malignant cells during the operation and preventing the possibility of postoperative grafting by proper prophylaxis.

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## The Lancet.

*February* 8, 1913.

1. The Etiology of Endemic Goiter. R. McCarrison.
2. Tumors of the Kidney. R. H. J. Swan.
3. Bone-Marrow Metastases and Anemia in Gastric Cancer. A. W. Harrington and A. M. Kennedy.
4. Some Observations on a Series of 78 Cases of Streptothrix Infection. A. G. R. Foulerton.
5. A Note on Remission in a Case of Epilepsy. D. W. Carmalt Jones.
6. A Case of Osteomalacia. S. Gray.
7. Congenital Absence of Both Thumbs. J. H. Sequira.
8. A Case of Acute Intestinal Obstruction Following Cesarean Section. J. B. Banister.

**1. Etiology of Endemic Goiter.**—R. McCarrison states that the changes which take place in the thyroid gland as the result of goitrous influences at first stimulate the organ to increased activity, but the increased activity so induced is early followed by damage to the secretory epithelium and by degenerative changes which impair its functional activity. There is no evidence of the existence in the thyroid gland of goitrous individuals of any specific *contagium vivum*—whether microscopic or ultramicroscopic—to which the malady can be attributed. Acting on the assumption that the intestinal tract might be the seat of infection, the author tried the effect of intestinal antiseptics in the treatment of this disease. Of 82 cases treated with thymol 68 were cured. When thymol is prescribed in such large dose as 10 grains twice daily the patient's dietary should contain no solvents of the drug. This should be administered in the form of a coarse powder washed down by a draught of water. Of 8 cases treated with soured milk, 4 were cured and 2 were improved. Vaccines prepared from organisms contained in the feces of sufferers from goiter were employed in the treatment of certain cases, in every one of which a complete disappearance of the thyroid swelling took place provided there were no degenerative changes in the gland. Equally striking results were obtained with a staphylococcus vaccine. The successful vaccine treatment of goiter is further confirmation of the view enunciated by the author that goiter is due to the presence of a living organism of disease in the intestinal tract. A conspicuous feature of this treatment and one which brings it into line

with the treatment by iodine, intestinal antiseptics, and the *Bacillus bulgaricus,* is the fact that the patients lose flesh and the skin becomes of a healthier tint.

2. **Tumors of the Kidney.**—R. H. J. Swan notes that the symptoms of a renal growth vary to a certain extent with the nature of the tumor present. The three prominent symptoms of hypernephroma are hematuria, pain, and the presence of a renal tumor. Hypernephroma is most common between the ages of 50 and 70 and is of comparatively slow growth; sarcoma is more common in childhood and forms a rapidly growing tumor with early cachexia. Carcinoma is a disease of later life, gives rise to more pain, and usually to constant hematuria; whereas in sarcoma hematuria may be absent, and in hypernephroma is usually of an intermittent type. Glandular enlargement is more common in carcinoma, either about the kidney or in distant glands, whereas a pulmonary or osseous deposit is more usual with hypernephroma. Carcinoma and sarcoma tend to infiltrate the surrounding tissues more rapidly than hypernephroma, so that the resulting tumor of the kidney may be more fixed in position.

3. **Bone Marrow Metastases in Gastric Cancer.**—A. W. Harrington and A. M. Kennedy report a case of this condition in which the blood bore a close resemblance to that of pernicious anemia. A study of the blood in the few cases which have been fully investigated shows a strong myeloid reaction, numerous erythroblasts and myelocytes being found. Most of the cases in which carcinoma simulated pernicious anemia closely were probably cases of metastases in the bone marrow. In the diagnosis of the latter most reliance is to be placed on the bone pains and the condition of the blood. In both of the authors' cases the bone pains were very severe and the tenderness was marked. With regard to the blood the points to be laid stress on are the high color index, megalocytosis, and the presence of erythroblasts and myelocytes in considerable numbers. Leucocytosis is common, but seems to be variable. In any case of grave anemia the presence of pains and tenderness of the bones should always arouse suspicion of carcinoma of the bone marrow.

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## British Medical Journal.

*February* 8, 1913.

1. Vaccines and Fever. E. C. Hort.
2. Apyrexial Typhoid. N. Flower.
3. A Simple and Rapid Method for the Administration of Subcutaneous Saline. E. M. Woodman.
4. Adrenalin in the Emergency Treatment of Non-Corrosive Poisoning by the Mouth (Cyanide, Strychnine, Aconite, etc.). J. L. Jona.
5. The Late Vasomotor Paresis Due to Adrenalin. H. Whale.
6. The Breaking of the Vicious Circle. J. B. Hurry.
7. The Treatment of Muscular Paresis by Means of Eccentric Movements. R. Abercrombie.
8. Raynaud's Syndrome and Syphilis. H. Semon.

1. **Vaccines and Fever.**—E. C. Hort performed a series of investigations to determine the essential cause of the fever of infective disease. The keystone in problems of immunity is the antigen, or substance that provokes the manifestation of antibodies; while in the pathological problems presented by fever, inquiry must always start from the pyrogen or substance that provokes the manifestation of fever. Both sets of problems are closely bound up with the subject of the pyrogenetic action of vaccines. The experimental basis of the theory that dead bacterial protoplasm is the direct source of the fever of infective disease is the undoubted fact that fever does frequently follow the injection into healthy subjects of dead cultures of certain organisms. At first sight this evidence would seem to be conclusive, especially if fever were found to follow the injection of all known forms of dead pathogenic bacteria and protozoa. It has, however, for some years been recognized that there are exceptions to what is by many still believed to be a general rule. For example, injection of dead cultures of the bacillus of Koch, *B. anthracis* and *B. diphtheriæ* into healthy subjects has from time to time been found not to be followed by fever. The author's observations appear to show that organisms recovered from tissues other than the blood, and injected at once, possess no pyrogen, but that when grown on laboratory media they readily elaborate a contaminating pyrogen from such medium, which they subsequently absorb. The author's observations also show that the concentration of body pyrogen cannot be high in the infected organs, since the tissue material injected in some of the cases was considerable in amount. Owing to the difficulty, however, of freeing organisms recovered in this way from tissue débris, their enumeration cannot be satisfactorily carried out. Moreover, it is conceivable that absence of pyrogen in the dead organisms after recovery from the body might be explained by exhaustion of any pyrogen they might have contained while in the body during the continuance of fever. The low concentration of pyrogen, however, already demonstrated in the blood plasma during high fever, and the fact that injection of organisms recovered from the body at an earlier stage of infection shows them also to be pyrogen free, make such a view improbable.

2. **Apyrexial Typhoid.**—N. Flower reports the case of a woman aged 60, who had resided in the same house for more than thirty years, and during that period had never required medical assistance for more than minor ailments. A careful investigation into her previous history precluded all possibility of any previous attack of typhoid fever. The present illness commenced in the first few days of September, with the usual feelings of malaise, and with gradually increasing diarrhea. She took to her bed on September 8th. When first seen, on September 10th, the patient was in an exhausted condition, with a dry, furred tongue and subnormal temperature. The outstanding feature of the case at the time was the exceedingly profuse diarrhea, which persisted in spite of all the usual remedies. Two days later the patient began to wander, and sank into a semi-comatose state, in which she remained for the ensuing fourteen days. During this period the intestinal symptoms were unchanged, there was a moderate distention of the abdomen, but no spots or enlarged spleen were present then or later. The Widal reaction on September 16th was positive in every dilution. From the onset of the attack until September 25th (that is, the fourth week of the disease), when complete consciousness returned, the mouth and surface temperatures were invariably subnormal, and the rectal temperature, taken twice daily, never exceeded 99.4°. From September 26th to October 4th the mouth and rectal temperatures each reached their maximum of 99.6° and 100.4° respectively, after which they dropped again. During the fourth week a further specimen of serum was obtained for the purpose of comparative agglutination reactions to *B. typhosus* and other allied organisms, with the following results: *B. typhosus* agglutinated up to 1 in 2,000. *B. paratyphasus B.* agglutinated up to 1 in 200. *B. paratyphosus A.* agglutinated very slightly. *B. enteritidis* (Gaertner) agglutinated not at all. The patient ultimately made a good recovery.

4. **Adrenalin in the Treatment of Non-Corrosive Poisoning.**—J. L. Jona states that if, after the introduction into the stomach of a poisonous chemical substance whose general toxic action depends partly upon the rate at which it enters the circulation, one is able to limit the rate of absorption of the drug—for example, by diminishing the blood supply to the mucosa of the stomach—time is provided for the preparation and adoption of methods to neutralize any possible action which would normally follow the introduction of the particular substance into the stomach, either by removing it altogether by means of a stomach tube and a stomach washout, or by inactivating it by means of a chemical antidote. Particu-

larly valuable would such an agent be which would lower the rate of absorption into the circulation of a substance which, entering the blood in large quantity, would destroy the life of the individual, but which the body is able, by the exercise of special powers to efficiently neutralize when it gains entry into the economy slowly. To such a category belong the cyanides. Theis and Buttron have demonstrated that when an animal has been filled by a lethal dose of KCN the amount of cyanide present in the organs diminishes on standing while Lang and Grober have shown that when HCN is introduced into the diet of an animal the amount of cyanide in the stomach diminishes, while the amount of sulphocyanate in the saliva and urine is increased. The intraperitoneal injection of adrenalin has been found by Exner to diminish the rate of absorption of a poison, such as strychnine or potassium cyanide, when introduced into the stomach. This academical piece of work suggested the investigation of the effect of the introduction of adrenalin into the stomach on the absorption of rapidly-acting poisons, such as cyanides, strychnine, and aconite, also introduced into the stomach, and whether such administration of adrenalin had any value in the practical treatment of accidental poisoning by these rapidly acting drugs. From the author's experiments on rabbits and dogs it is concluded that in the extract of the medulla of the suprarenal gland, one has an agent which will convert the stomach or other absorbing viscus on which it is acting into a practically non-absorbing bag in which the poison lies, ready to be absorbed when the action of the adrenalin passes off, but at the same time being absorbed in relatively small amount while the adrenalin is acting; and so a respite is gained during which the poison can be removed by mechanical means or neutralized *in situ* by some chemical antidote.

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## Berliner klinische Wochenschrift.

*January 27 and February 3, 1913.*

**Treatment of Eclampsia.**—Veit endeavors to cover this subject very briefly. He is quite convinced that the toxin of eclampsia comes from the albumin of the periphery of the placenta, and predicts that this view will soon be universally accepted. Abderhalden's optical serodiagnosis of pregnancy seems to have turned the scale in placing the source of the toxin. The phenomenon is in no wise due to the entrance of villi into the blood stream which is known to occur in special cases. The human female is the only one who suffers from puerperal eclampsia, and the penetration of the villi is not without significance in eclampsia, for this phenomenon does not occur in animals until we descend very low in the scale of organization—to the leech, for example, in which the villi also enter the maternal placenta. When foreign and toxic albumin enters the blood a counter poison must form, but as yet nothing is known of it, nor under what conditions it fails to form. We cannot, therefore, prevent or antidote this poison directly. As for cutting off its source this is what we have been striving to do for years by accouchement forcé or at least by rapid delivery, which of course is not always practicable or available. Since the more convulsions the worse the outlook, it is right to suppress them by narcotics. Venesection with or without subsequent saline infusion is an antitoxic resource, since the woman can in most cases well undergo the loss of blood. Statistics show well that all three of these resources make for a reduced morality. In regard to emptying the uterus instantly both abdominal and vaginal hysterectomy have been recommended in recent years and the statistics of Dührrsen show practically no operative mortality so that there is no increase of risk. The loss of blood has only the force of a venesection and hence two of the three resources are combined at once. But vaginal hysterotomy must be done by an expert with trained assistance and under favorable conditions. The family practitioner can do no more than expedite labor and add to this a venesection and the narcotic method of Stroganow. Even these measures made a good statistical showing. Rapid delivery naturally implies a variety of procedures depending on the case. The narcotic method goes well with methods for operative delivery, as version and extraction, high forceps, etc. Our three main resources back one another up admirably, so that instead of competition numerous combinations are possible.

**Functional Affections of Arteries.**—Brunton mentions the small amount of space devoted to this subject when compared with the same type of maladies of the heart. He first takes up the phenomenon of abdominal pulsation which is compatible with the utmost integrity of the heart and blood vessels. It is doubtless of nervous origin and may be a reflex, as from a gastric or duodenal ulcer, and it certainly may accompany these conditions, as melena has been noted as an associated phenomenon. It need not be limited to the aorta, for in severe cases it involves some of the principal branches. In some such cases we may suspect a hyperthyroid factor. The change in the pulsations partakes of the nature of a widening of the vessel. There is evidence that this change in the calibre of the vessels may be produced in several different ways. One cause is the menopause. In some cases of migraine the carotid of the affected side may be felt to beat strongly. Naturally there is an opposite class of conditions in which the arteries may show contraction of a functional character but only peripheral vessels are concerned. It does not appear that the larger trunks are correspondingly involved or at least we have no knowledge of such affections. Clinical evidences of peripheral arterial contraction, may as is well known, simulate the various types of arteriosclerosis. In most cases of contraction of the peripheral vessels we find the blood pressure elevated, which would in fact be a natural result of such contraction. The latter causes ischemic conditions of various local organs which are often relieved by vasodilator remedies such as overcome the peripheral contractions and thereby lower the blood pressure. Some confusion must arise at times between a primary dilatation of the large trunks with secondary dilatation of peripheral internal arteries, and the elevation of blood pressure which results from contraction of the same vessels. Certain cases of headache, gastroenteric crisis, etc., may be diagnosticated only through the remedies which antagonize them. In pulsation of the large trunks with flushing of the face we have a condition very difficult to control. Many remedies are employed and probably the best results come from hygiene (rest, diet, laxatives), with simple sedatives like bromides and valerian.

**Barlow's Disease at the School Age.**— Glaser relates a case as follows: A boy aged six years was taken with pains in all his limbs which were successively involved. He was naturally regarded as a subject of rheumatism and was treated with aspirin. He became worse and developed gingivitis; and was removed then from his home to a hospital. It was learned that he had been living chiefly on bread and boiled milk. He was found to have hematuria and was pale. The joints were intact. The boy habituated to his meagre regimen refused eggs, meat, etc. A diagnosis of Barlow was made, and improvement at once followed the use of raw milk and orange juice. All the symptoms, due apparently to escape of blood, began to recede, and with abatement of pain and soreness the boy began to move about somewhat and the rheumatoid pains to vanish, completely functional recovery being somewhat tedious, being over three months deferred. The author states that this case will be regarded by some as old fashioned scurvy, of course by those who regard the two diseases as identical. Rickets can surely be ex-

cluded and as for syphilis the W.R. was quite negative. While Barlow's disease is preeminently one of infancy, like most diseases of such incidence, it must be able to appear at times at a remote period.

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### Münchener medizinische Wochenschrift.

*January 28 and February 4, 1913.*

**Spasmogenic Peptic Ulcer.**—Von Bergmann first discusses vagotonus and its coexistence in part with sympathicotonus, and alludes to vagasthenia and sympathicasthenia. These conditions are to a certain extent hypothetic. Coming to the subject of ulcers ventriculi he states that it very often occurs with an abnormal reaction of the visceral nerves. We frequently see these ulcers in vagotonic subjects. The hyperacidity, increased stomach tonus, and increased peristalsis suggest vagotomy, and even pain is usually marked in these cases. There are other ulcers in which there is no evidence of the vagotonic syndrome. Another manifestation of the latter is the glistening eye and slight exophthalmos which is present in a large proportion of cases. Other symptoms are cold, moist hands, tremor, tendency to spastic constipation. Dermographism, swollen throat, and other vasomotor symptoms are sometimes seen. Pilocarpin causes a vagotonic picture in part, especially sharp pains in the stomach. The author, however, sees in the entire picture some evidences of sympathicotonus—exophthalmos and tremor. Of 60 cases of spasmogenic ulcers ventriculi and duodeni, all but two were in markedly neurotic subjects. A typical case is cited. Male aged 39 suddenly attacked with cramps in the stomach, and pressure which did not wholly disappear. Later "causeless" vertigo and prostration. Movements of tarry appearance. Vomited fresh red blood. Constipation then developed—with sheep dung movements. When examined showed pallor, collapse pulse (results of loss of blood). Slow recovery. Trial breakfasts and *x*-ray photos with other data gave evidence of gastric ulcer with occasional gastric spasm. There was great disturbance of both the sympathetic and vagus systems expressed by a variety of symptoms. The author devoted much reasoning to illuminate the rationale of these conditions, but the use of the term spasmogenic ulcer shows that he regards the gastrospasm as a cause and not an effect of the ulcer. Repeated spasms cause areas of ischemia in the gastric mucosa, and eventually erosions and ulcers are produced. Correspondingly for the prevention and arrest of these ulcers he recommends atropin as an antispasmodic. The use of this remedy should be prolonged and conjoined with the customary diet.

**Pregnancy Toxicosis Cured by Ringer's Solution.**—Eichmann describes several cases of gestation toxicodermiæ cured in this fashion. They are similar in type to those which have been cured by serum of gravidæ, horse serum, etc. The pruritus, so distressing in these cases, usually subsides promptly. From 100 to 200 c.c. of solution were slowly injected into the gluteal muscles. In a prior series of cases, the solution was given by infusion. The results were equally favorable but the injection technique is simpler. The gravidæ at the author's clinic are placed upon a vegetarian diet, apparently on the theory that the toxic material proceeds from the intestine —that is when the toxemia is expressed as an eruption. This view is based in turn on the relationship between alimentary intoxication and urticaria, and the fact that a vegetarian diet antagonizes the development of these alimentary eruptions. The author seeks to antagonize the placental theory of toxemia, and as she does not mention Abderhalden's recent work on placental albumin and the diagnosis of pregnancy, it is evident that she is not in position to criticise this view which according to good authority has now passed the controversial stage.

**Sterilization and Sociology.**—Hegar cites a number of cases of women who had gradually become insane, and who meanwhile had become pregnant by their husbands, against the warnings of asylum directors. Not only were the children menaced, but the mental health of the mothers was further prejudiced. Sterilization would have prevented such situations but the first and simple duty was to proceed against the husband who was the sole offender. He opposed incarceration and with one excuse or another sought to have the wife under his personal charge. Every one of four women described was impregnated by the husband after he had secured her release from the institution. The author seems opposed to sterilization of married women, for instead of proving a benefit to society the reverse result may follow. Had sterilization laws been in force in the past we should have had, for example, no Beethoven. His paternal grandmother was a hard drinker, as was also his father. Both father and mother were easy going. The father because of bad heredity and his own psychopathic tendencies might have allowed himself to be sterilized for the good of society. Problems frequently present themselves. A woman with insanity of gestation, and hysterical in disposition was incarcerated twice. The husband felt it his duty to procreate no more children and would have abstained from intercourse but the wife instantly became jealous and demanded coitus so that a third conception was the result. Then came an artificial abortion. In this, as in similar cases, sterilization of the husband seemed the rational course, and a simple means against the abortions, suicides, and murders which follow gestational insanity. The author as stated believes that females should be sterilized only in childhood. The sterilization of the male is another problem, more complicated. Aside entirely from the descendants there is another sociological aspect bound up in sexual crimes against the person. A single degenerate may assault and injure or kill a large number of persons, to say nothing of the social stigma cast on some of his woman victims. Sterilization in such cases might need to be absolute. Some of the worst of these men when they have money spend it on prostitutes which shows that an incurable sexual perversity exists. Others, however, the author says, are sufficiently sane to recognize their dangerous status in society and are glad to marry, if the opportunity presents.

**Thyreosis and Tuberculosis.**—Saathoff discusses the supposed association of these two affections with special reference to Graves' disease. There is a striking correspondence between the initial manifestations of the two. Among these are cardiac disturbances, vasomotor phenomena, tendency to perspiration, fever, vertigo, tremor, increased exhaustibility, insomnia, gastroenteric disturbances and emaciation. The two processes differ radically in their nature, and for a year and a half the author has instituted comparative studies. Previous writers had sought for the presence of the thyreotoxic factor in tuberculosis while the author studied his cases of Graves' disease for the presence of a tuberculous factor. He became astounded at his results. He examined the lungs in the usual manner and with the *x*-rays; took careful temperature measurements, invariably per rectum; used the von Pirquet and ordinary tuberculin reactions. At the same time his cases were examined as to the state of the thyroid and thyroid symptoms. The brief conclusions of his very prolonged study are that tuberculosis plays an essential rôle in the causation of thyreoses; the type of tuberculosis in these cases is usually the mild type with favorable prognosis. Rise of temperature when present is due to the tuberculous element. In any case whatever of hyperthyroidism we should investigate for tuberculosis.

### Deutsche medizinische Wochenschrift.

*January 23 and 30, 1913.*

**Metapneumonic Brachial Plexus Neuritis and Polyneuritis.**—Biermann first mentions the frequent occurrence of neuritis as a sequel of infectious diseases, which appears to be the result of the neurotropic action of the specific bacterial toxin. Very little is known of the intimate mechanism of the disease, the selective action of the toxins on particular nerve trunks, or the predisposition. Only after the existence of most of the other forms of post-infectious neuritis had been established did the metapneumonic form appear in literature. Naturally, cases are found here and there in the older literature but their nature was not fully recognized. In 1889 Oppenheim described a clean-cut example of symmetrical polyneuritis following pneumonia, but as the patient was an alcoholic this factor had to be taken into account. In 1890 Leech reported a case of multiple neuritis which appeared 4 or 5 days after the crisis of a pneumonia case and in 1893 Charcot described a similar existence. In both these cases all the extremities were involved. In 1893 Krafft-Ebing described a case of bilateral neuritis of the upper extremities and three years later Leszynsky saw a case involving the arm and shoulder muscles of both sides. Not until 1905 was there a case described of unilateral brachial neuritis, by Westphal. The infrequency of these cases makes it of unusual interest that the present writer has alone seen two cases of metapneumonic brachial plexus neuritis and one of polyneuritis within a relatively short time. The first case when summed up was that of a girl aged 24 who, ten days after typical pneumonia, experienced pain in both arms with subjective sensory disturbance, followed by severe paralysis in both arms, so that for three weeks she had to be fed. Five months later she showed pareses and atrophies in the regions of the thoracicus major, axillaris, subscapularis longus, suprascapularis, radialis and medianus of the right side, and similar distribution on the left side. While there were no objective sensory disturbances the case was regarded as one of neuritis. There was complete recovery at the end of two years. The second case agreed fairly well with the first. In the third case both lower extremities were chiefly affected, but there were also slight pareses, Biermann notes, in the upper extremities and in the parts supplied by the seventh cranial nerves.

**Cases of Cardiac Surgery.**—Lucas reports two successful cases of cardiac suture treated under unfavorable external circumstances. In the first case a jealous girl stabbed her rival with a letter opener. Twenty minutes later the victim was found in violent dyspnea with pains in the cardiac region. The wound was of course a mere puncture. There were no signs of cardiac activity, with great increase of area to percussion. Patient was at once slightly etherized and a fenestrated opening made in the thorax, which involved the ribs and cartilages from the third to the seventh inclusive. The pericardium was opened and blood and clots removed. The heart, hitherto passive, began to beat feebly. The small wound in the organ was sutured. As hemorrhage was not checked at once the organ was lifted from the thorax—whereupon it ceased beating—and examined on its posterior aspect. Nothing was found and when the organ was replaced it still refused to beat. The author then compressed and massaged it. Digalen was injected and within an hour the condition of cyanosis had passed off. It was necessary to dress a wound in the pleura, and the drain left within also drained the pericardium. The operation lasted but 18 minutes. Convalescence was stormy, as there was a secondry hemorrhage with filling of the pleural sac and a status of collapse which remained until the pleural exudate was finally disposed of. There were also acute symptoms due probably to pericardial adhesions, and others consequent upon the first attempts to get about. As a dramatic conclusion the patient married the man who was the cause of her predicament. The second case was one of a bullet wound. The ball had lodged in the liver after having traversed the heart. The openings made by the bullet in both ventricles were successfully closed by sutures.

**Tuberculosis of the Thyroid.**—Dutoit gives a brief digest of our knowledge of this subject which dates from the case recognized by Lebert in 1862. The secondary involvement of the organ was noted by various pathologists. No advances were made for years and it became recognized that the thyroid was one of the organs most rarely attacked, and that our entire knowledge of this localization was limited to autopsy finds. Not until 1893 was it reserved for a surgeon Bruns, to extirpate a caseous goitre. In 1897 Fränkel announced as the result of an analysis of recorded material that miliary tubercles are almost always present in the thyroid in general miliary tuberculosis, but that there was quite independent of this type, a nodular caseating form which seldom causes symptoms. According to Iwanow, who saw seven such cases this form is secondary to pulmonary phthisis. He applied the term tuberculous goitre to this form, in which, by the way, the thyroid functions are not compromised. In 1902 Clermont described an alleged case of primary tuberculosis of the thyroid in an infant, and shortly afterwards other authors followed with reports. Among these von Schiller reported a case of acute tuberculous strumitis. From another viewpoint tuberculosis is by no means uncommon in hypothyroidism, and in the absence of autopsy finds we cannot deny that the lesion of the gland which underlies some of these cases may not be tuberculosis. Conversely recent observers have much to say of the close relationship of tuberculosis and Basedow. The two conditions sometimes coexist in a manner not to be explained outright by coincidence. The tuberculous toxin may also have a tendency to stimulate the functions of the thyroid, so that a slight hyperthyroidism may often be noted in the consumptive, as evidenced in the tachycardia. Some authors go so far as to recognize a slight enlargement of the thyroid in these cases. This is the teaching of Poncet. Hedinger, rejecting this teaching, admits that dysthyroidism may coexist occasionally with tuberculosis, but only because actual lesions develop in the gland.

**Nature of Rickets.**—Kassowitz reiterates his well-known views, defending them from the attacks of others. Three postulates he thinks should be acceptable to all. First, pronounced rickets, affecting the cranial bones, is occasionally encountered in the healthiest looking and best fed babies. Second, in the warm summer months, in which digestive troubles flourish, the rickets curve sinks to its lowest point, likewise the so-called spasmophilic phenomena. Conversely in the cold months in which children eat better and are less burdened with digestive troubles, all these conditions have their acme of incidence. Third, in tropical countries we see hardly any rickets. Similar finds are obtained from a study of animal life. Having thus discredited the nutrition theory the author calls attention to the frequency of fetal rickets and of congenital evidences of the same. These cases may not as a class, be recognized outright as rickets but the softness of the cranial bones, the beading of the ribs, etc., seen perhaps as isolated lesions incline to rachitism. In the great majority of cases these are not recognized at first, and only in later years do the symptoms become prominent. This origin *in utero* does away completely with the alimentary theory of rickets, and we are therefore forced to substitute a respiratory theory. This the author does not elaborate, being content to connect rickets with "respiratory noxæ."

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

It is not essential to the success of examiners that they be proficient in the technicalities of the science of life insurance, but they will find their work more interesting and will be in a position to take a broader view of the many requirements if they have at least some general idea of those elementary principles of this complicated subject which are most commonly encountered by them.

The principles involved in the computation of the premium are the most important and are based upon the scientific combination of the tables of mortality with the tables of interest.

*The Mortality Tables:*—It was discovered practically in the beginning of the nineteenth century that there is a natural law governing the mortality of the human race, whereby it is possible to determine approximately, in a large group of persons, the number that will die in each year until all are dead. When this law became established, the business of life insurance was revolutionized and mathematical calculations superseded the crude guesses of life and death upon which the primitive methods had hitherto been based. Tables were compiled which were further developed subsequently by the actuaries of America and Great Britain. The American Experience Mortality Table was constructed by Sheppard Homans while actuary of the Mutual Life Insurance Company of New York, and is used by practically all American companies in computing their premiums. The tables usually employed in Great Britain and Canada are those known as the Actuaries' or Combined Experience Table of Mortality.

The table begins with 100,000 lives, starting with the age of ten years. Of these, 81,822 will still be living at the age of thirty-five, of whom 732 will die during the year. This will leave 81,090 still living at the beginning of the next year at age thirty-six, while 737 of this number will die in the ensuing 12 months. In this way the table shows how many of the original 100,000 are living at each age from ten years on, and how many will die in each year thereafter until the last three, who have lived to the age of ninety-five will die during or at the end of that year at the attained age of ninety-six. If a policyholder lives beyond the age of ninety-six, the companies, as a rule, will excuse him from the payment of further premiums.

THE AMERICAN TABLE OF MORTALITY

| Age | Number Living | Number Dying Each Year | Age | Number Living | Number Dying Each Year |
|---|---|---|---|---|---|
| 10 | 100,000 | 749 | 53 | 66,797 | 1,091 |
| 11 | 99,251 | 746 | 54 | 65,706 | 1,143 |
| 12 | 98,505 | 743 | 55 | 64,563 | 1,199 |
| 13 | 97,762 | 740 | 56 | 63,364 | 1,260 |
| 14 | 97,022 | 737 | 57 | 62,104 | 1,325 |
| 15 | 96,285 | 735 | 58 | 60,779 | 1,394 |
| 16 | 95,550 | 732 | 59 | 59,385 | 1,468 |
| 17 | 94,818 | 729 | 60 | 57,917 | 1,546 |
| 18 | 94,089 | 727 | 61 | 56,371 | 1,628 |
| 19 | 93,362 | 725 | 62 | 54,743 | 1,713 |
| 20 | 92,637 | 723 | 63 | 53,030 | 1,800 |
| 21 | 91,914 | 722 | 64 | 51,230 | 1,889 |
| 22 | 91,192 | 721 | 65 | 49,341 | 1,980 |
| 23 | 90,471 | 720 | 66 | 47,361 | 2,070 |
| 24 | 89,751 | 719 | 67 | 45,291 | 2,158 |
| 25 | 89,032 | 718 | 68 | 43,133 | 2,243 |
| 26 | 88,314 | 718 | 69 | 40,890 | 2,321 |
| 27 | 87,596 | 718 | 70 | 38,569 | 2,391 |
| 28 | 86,878 | 718 | 71 | 36,178 | 2,448 |
| 29 | 86,160 | 719 | 72 | 33,730 | 2,487 |
| 30 | 85,441 | 720 | 73 | 31,243 | 2,505 |
| 31 | 84,721 | 721 | 74 | 28,738 | 2,501 |
| 32 | 84,000 | 723 | 75 | 26,237 | 2,476 |
| 33 | 83,277 | 726 | 76 | 23,761 | 2,431 |
| 34 | 82,551 | 729 | 77 | 21,330 | 2,369 |
| 35 | 81,822 | 732 | 78 | 18,961 | 2,291 |
| 36 | 81,090 | 737 | 79 | 16,670 | 2,196 |
| 37 | 80,353 | 742 | 80 | 14,474 | 2,091 |
| 38 | 79,611 | 749 | 81 | 12,383 | 1,964 |
| 39 | 78,862 | 756 | 82 | 10,419 | 1,816 |
| 40 | 78,106 | 765 | 83 | 8,603 | 1,648 |
| 41 | 77,341 | 774 | 84 | 6,955 | 1,470 |
| 42 | 76,567 | 785 | 85 | 5,485 | 1,292 |
| 43 | 75,782 | 797 | 86 | 4,193 | 1,114 |
| 44 | 74,985 | 812 | 87 | 3,079 | 933 |
| 45 | 74,173 | 828 | 88 | 2,146 | 744 |
| 46 | 73,345 | 848 | 89 | 1,402 | 555 |
| 47 | 72,497 | 870 | 90 | 847 | 385 |
| 48 | 71,627 | 896 | 91 | 462 | 246 |
| 49 | 70,731 | 927 | 92 | 216 | 137 |
| 50 | 69,804 | 962 | 93 | 79 | 58 |
| 51 | 68,842 | 1,001 | 94 | 21 | 18 |
| 52 | 67,841 | 1,044 | 95 | 3 | 3 |

How does the table apply? For the sake of simplicity and convenience, let it be supposed that a company starts with 81,822 people, all at the age of 35, who wish to arrange for the payment of $1000 to their executors at death, and each of whom will maintain his membership during his entire life. The ultimate sum to be paid out amounts to $81,822,000 and must come from the premiums paid by the members and the interest these premiums will earn. How large a premium must each member pay in order to create a fund sufficient for this purpose?

The first step is to determine how large a total fund the company must have on hand at once to accomplish the payment of each policy to the end, without the necessity of adding new members or the so-called influx of "new blood"—an essential principle in the construction of regular insurance companies as distinguished from assessment societies.

By consulting the table again, it is seen that the 81,822 members will all die within the next sixty-one years. If there were means of knowing when any one individual of the group will die, the computation of his premium would be very simple. The table does tell, however, how long certain groups of the members will live. For example: at age thirty-five it is seen that 732 members will live only one year; that 812 will live ten years to age forty-five; 1470 fifty years to age eighty-five, and that the last three will live sixty-one years to age ninety-six. The computation of the premium must be based, then, upon the aggregate number of lives—the length of time the members will live as a body, as shown in the case of the different groups.

By continuing on in the case of the group of 812 members who will die during or at the end of the tenth year, at the attained age of forty-five, it is apparent that $812,000 will be required in the tenth year to pay the policies of $1,000 each. This amount is not demanded immediately, however, as it is only necessary to start with a sum sufficient with the addition of the earned interest in ten years to amount to $812,000. The computation has now reached the point where the interest tables must be consulted in order to ascertain the amount of the total fund which should be collected at once.

The object of this chapter is to emphasize the importance of the mortality table before taking into account the benefits derived from interest and the necessary expenses of transacting business. If there were no reliable table of experience for guidance as to the number of insured people who will die each year, the companies would find it an impossibility to adjust the premiums so that they would not be too large, or, worse, too small to provide sufficient funds for the ultimate claims.

The tables of interest and their bearing will be discussed in the next article.

# Book Reviews.

Sex Education. By Ira S. Wile, M.S., M.D. Price $1.00. New York: Duffield & Company, 1912.

The medical profession has become impressed by the need for a certain amount of education regarding sex and sex hygiene to be imparted to the rising generation. The general public appear to be now following this lead and consequently from all parts of the country demands have come and are coming that sex hygiene should be made a part of the school curriculum. The obstacles in the way of carrying out this plan are that no scheme has been formulated as to the nature and extent of this sex education. The work by Dr. Wile was conceived and written with the view of suggesting the scope and limits of such teaching. He has succeeded admirably in his object.

Manual of Human Osteology. By A. Francis Dixon, M.B., Sc.D. University Professor of Anatomy and Chirurgery, Trinity College, Dublin. Illustrated with 178 figures, many in colors. Price $3.00. New York: William Wood and Company, 1912.

This manual gives a very thorough description of the bones of the human body; it is a scientific and scholarly piece of work. The names adopted by the Basle Nomenclature Committee have been largely used, but other names in frequent use are also given. We fear that the present volume will not render the study of osteology less dry or more popular, for the author's style is not calculated either to awaken or to maintain interest in the subject. In this respect this book is the antithesis of Holden's charming volume on the same subject.

A Practical Medical Dictionary of Words Used in Medicine with Their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms; Anatomical Tables of the Titles in General Use, and Those Sanctioned by the Basle Anatomical Convention; Pharmaceutical Preparations, Official in the United States and British Pharmacopœias and Contained in the National Formulary; Chemical and Therapeutic Information as to Mineral Springs of America and Europe, and Comprehensive Lists of Synonyms. By Thomas Lathrop Stedman, A.M., M.D., Editor of "Twentieth Century Practice of Medicine;" Editor of the Medical Record. Second Revised Edition. Illustrated. Price, $4.50 net, plain; $5, indexed. New York: William Wood & Company, 1912.

This work appears to have received more extensive additions than it is the custom to make in a book in its first year of life. It is stated that the old plates were destroyed, thereby giving the author the opportunity to make any changes he found to be desirable without reference to what the cost of such revision would ordinarily be. He has evidently taken advantage of the free hand this offered him, for in the preface it is said that over 2,000 new titles have been inserted, the typographical errors in the first edition have been corrected, the biographical data have been brought down to date, and a table of symbols has been added to the appendix. In style and general appearance this edition is practically the same as the first, except that a red cover has been substituted for the green one in which the book first appeared.

Atlas der Operations-Anatomie und Operations-Pathologie der Weiblichen Sexualorgane, mit Besonderer Berücksichtigung des Ureterverlaufes und des Suspensions und Stützapparates des Uterus in 35 Tafeln. (Atlas of the Surgical Anatomy and Pathology of the Female Sexual Organs, with Especial Reference to the Course of the Ureters and the Suspensory Apparatus of the Uterus.) By Dr. Wilhelm Liepmann, Berlin. Thirty-five plates, with explanatory text. Price, 24 marks. Berlin: August Hirschwald, 1912.

The author of this very valuable atlas has already become well known by his previous gynecological and obstetrical manuals. His aptitude in producing clarifying illustrations is again well shown in the work herewith noted. The pictures are taken from preparations which have been hardened in formalin or by freezing methods. They are reproduced in life size, and correspond to the wax models which the author exhibited at the recent International Gynecological Congress. Although surrounded with unavoidable restrictions which are due to the exigencies of the methods of preparation, the pictures as a general thing, if submitted to analysis and study, afford an excellent and clear idea of the anatomical region in question. They require very careful attention, however, but the trouble will be amply repaid. The relations of the floor of the pelvis are particularly well demonstrated. In a separate folio is presented an explanatory text which aids greatly in the understanding of the pictures. The work constitutes a very valuable addition to gynecological literature.

Gould and Pyle's Cyclopedia of Medicine and Surgery. With Particular Reference to Diagnosis and Treatment. Second Edition, Revised and Enlarged. Edited by R. J.E. Scott, M.A., B.C.L., M.D. Price $12.00. Philadelphia: P. Blakiston's Son Company, 1912.

This work, which is a compromise between a dictionary and an encyclopedia, was originally devised after the plan of the one-time most popular Quain's Dictionary of Medicine, but extended to include surgery and the various specialties. The only other work in this special field to-day is the volume edited by J. Keoch Murphy and published by the Oxford University Press. The plan of the book is that of a cyclopedia, the titles being arranged alphabetically instead of by subjects as in the usual "System." Such a plan is convenient for reference, but when carried to the extreme, which it is here, without page numbers and with no index, it often defeats its own end; for unless the reader is in telepathic accord with the editor and turns at once to the title which the editor had in mind in laying out the work he is likely to be disappointed in his quest. The editors have indeed sought to remove this difficulty by a system of cross-references, but this is necessarily imperfect and is not an acceptable substitute for an index. The reviewer has looked in vain for articles on the Hypophysis cerebri, Infantilism, Nauheim treatment, Pineal gland, Progeria, Radiotherapy, Thalamus syndrome, Thorium, and other subjects. Doubtless these are treated of somewhere in the volume, but buried treasures are of little use, especially to the man who has not the time to dig for them. This defect is the more regrettable, for the articles that are available are as a rule excellent of their kind and give the reader just what he wants to know of the subject with the least expenditure of time and labor. To facilitate reference much of the information is given in the form of the well-arranged tables taken for the most part from the "Illustrated Dictionary of Medicine" by the senior editor.

This second edition is the work of thirty-three contributors, whose names are given on the title page but who are otherwise anonymous, since the articles are not signed. In the preface to the first edition the editors state that they have changed the several contributions so as to make them conform to their own ideas. The advantage of this plan is that it means more or less uniformity of treatment of the various subjects, but its obvious disadvantage is that the statements rest no longer upon the authority of the contributors, who are supposed to be experts in their respective lines, but entirely upon that of the editors, who cannot pretend to omniscience. If they are humble, as all editors should be, such remodelling will work no harm, but if they are arrogant, as some editors unfortunately are, the possibilities of error in statement are great and disquieting to the seeker after knowledge.

Apart from, and in spite of, those defects in plan, the work is deserving of the highest commendation. It is truly encyclopedic in character, embracing the whole realm of medicine, and the omissions are few—fewer even, no doubt, than they appear to be owing to the lack of an index. The articles are succinct and informing and the reader feels assured that he has presented to him all the facts that it is essential for him to know, unless indeed he wishes to master the subject, in which case he would naturally turn to a larger and more comprehensive work or to a special treatise. As the editor of the second edition puts it, "The purpose of the present edition of this Cyclopedia is to provide the general medical reader with a source of information on every medical subject except his own specialty." With the limitations above noted, this purpose has been successfully attained.

Der gerichtlich-medizinische Nachweis der wichtigsten Gifte. Von Prof. Dr. med. Hermann Hildebrandt, Privatdozent für Pharmakologie und gerichtliche Medizin an der Universität Halle a. S. Price 2 M. Berlin: August Hirschwald, 1912.

In this small work Hildebrandt presents a rather exhaustive discussion of the methods for the medicolegal recognition of the most important poisons. The first portion is devoted to general considerations of symptoms, autopsies and the manner of obtaining specimens. The reader will get an illuminating insight into the exacting requirements of the German law, but as a whole the matter is rather chaotically arranged. In the remainder of the pamphlet are found described the methods recommended for the recognition of the individual poisons. This portion of the work is excellent. Biological and chemical tests are given in great numbers and their relative values carefully considered. The index is unusually inadequate, even for a German publication.

# Society Reports.

## REPORTS OF THE TUESDAY CONFERENCE OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.

*First Division.*—Dr. Joseph Collins.

**Brain Tumor.**—Dr. Collins, in presenting this case, said that it was an uncommon experience to have the symptoms of organic brain disease conclusive regarding the location of the lesion. He, therefore, thought it worth while to exhibit a patient who presents such symptoms. Intracranial surgery is still an uninviting field compared with spinal surgery because of this uncertainty of localization, and because of the frequent disappointments that we encounter when the cranium is opened for the relief of disease whose location has been diagnosticated with much confidence.

The patient, a man forty-one years old, encountered when he was thirty-four years old, what was construed to be a mild injury to the head. He was walking out of a cellar when the right side of his head behind the forehead came in contact with a projecting beam. He was dazed and dizzy for a short time afterward, but he kept at his work and worked the next day. Indeed, it was not until after the present illness developed, *i.e.* four months after this accident, that he gave the injury any particular thought. The initial symptom of his disorder which brought him to the Neurological Institute, November 25, 1912, occurred in the evening just after he had finished taking a foot bath. According to his wife's statement, he fell backward on the bed and then the left hand and arm flexed and extended rapidly. The spasm then extended to the leg, and finally involved the head. She recalls that the head was turned to the left and the eyes upward and to the right. The duration of the attack was not longer than five minutes, and during this period he was entirely conscious and conversed with his wife. He went to work the next day and there is no history of impaired motility either of the arm or of the leg. The next attack occurred one month later, and, so far as can be learned from the patient and from his family, it was a parallel of his first attack. Neither of these attacks was considered of any great importance, nor was a physican summoned. The third attack, and the one from which he dates his present incapacity, occurred about a year after the second, and that is somewhat more than four years ago. This attack was likewise apparently a typical attack of Jacksonian epilepsy, but he became unconscious after it and remained unconscious or stuporous for several hours, and following this, he was heavy and lethargic for one or two days. After this attack he noticed that his left lower extremity was weak, stiff, and unwieldy. The left hand at this time did not show any considerable loss of strength or of dexterity. He kept at his work which was that of a peddler. In four or five months he had the next attack, and after that attack his leg became more feeble and his left hand showed from that time on some loss of dexterity.

His complaint on presenting himself to the clinic was inability to walk normally and securely; inability to use his left hand with the same readiness as his right, and attacks occurring at infrequent intervals, usually not accompanied by loss of consciousness and which will be described in greater detail below; frontal headache, occasional attacks of vertigo, a sense of apprehension, confusion, and fear. Examination shows: (1) Partial left hemiplegia with all of the concomitants of an organic lesion, *i.e.*, plus tendon jerks, Babinski phenomenon; (2) complete astereognosis of the left hand; (3) loss of the deep sensibility in the entire left side of the body and extremities; (4) slight but distinct hypesthesia and hypalgesia of the left side of the body and of the extremities; (5) absence of the abdominal, and epigastric reflexes of the left side; (6) complete homonymous hemianopsia; and no other physical signs. He was brought into the hospital for fuller examination and laboratory investigations which, however, were negative. During the time that he was in the hospital he had two attacks of Jacksonian epilepsy. They began by his shouting, "Help me! Help me!" There was then noticed a spasm in the muscles of the left hand, clonic convulsion of the muscles of the hand, the forearm, and drawing up of the leg and the thigh, and the rotation of his head toward the right with queer pouting movements of the lips and blowing expiratory movements of the mouth and face. When these clonic spasms, which occurred three or four times a second, were relaxed, very extraordinary manege movements would occur. These movements resembled somewhat the gesticulations which one not infrequently sees in dementia præcox. At first sight they looked very much as if he were attitudinizing. The fingers of the left hand would flex, the index finger, and then the forearm, would be extended as though he were going through some dramatic performance; at another time the hand would assume a position of the accoucheur hand; at another time the forehead would wrinkle laterally, the eyes take on a severe expression while he would pout and blow rapidly a number of times in succession. During all this time, that is, during the display of the clonic spasm and the manege movements, he was apparently quite conscious, and when the spasm would permit him to do so, he would converse and answer questions. The whole attack lasted about ten minutes.

These attacks taken in conjunction with the objective symptoms above enumerated, and particularly taken in conjunction with the cardinal symptoms of brain tumor present; that is, frontal headache, vertigo, and sense of confusion, makes the diagnosis of brain tumor quite justifiable.

It is believed that the lesion responsible for the symptoms in this case is situated in the Rolandic region and extending into the substance of the brain to such an extent that it interrupts the radiations of Gratiolle in the right hemisphere or backward through the inferior parietal convolution to disrupt the continuity of the fibers coming from the right cuneus to pass forward and downward into the optic chiasm. The primary symptoms were apparently entirely motor irritation phenomena—attacks of Jacksonian epilepsy. The second symptom was a motor destructive phenomenon, and partial hemiplegia, both pointing toward irritation and encroachment upon, but not destruction of, the anterior central convolutions. The third symptom, viz., loss of the deep sensibility; and likewise the fourth and fifth, viz., astereognosis and the loss of the abdominal and epigastric reflexes indicating an extension backward into the middle part of the posterior central convolution, while the left-sided hemianopsia indicated a further extension backward to involve the optic radiations.

It is regrettable that a case in which the localization can be made with such apparent accuracy should not be willing to subject himself to operation, but as was said in the beginning, the patient resolutely objects to it and purposes leaving the hospital to-day.

Second Division—Dr. Frederick Peterson.

**Polioencephalitis.**—Dr. Peterson presented the following case: G. C., female, age 27 years. This patient was admitted to the hospital on September 14, 1912, complaining of paralysis of the eyeballs and occasional difficulty in speech. Her previous history is—she is of English birth but has lived almost her entire life in British Guiana. Beyond frequent malarial attacks, her health has been good. In 1897 she noticed that her eyelids drooped. This persisted. In 1901 she was seen by an oculist in Edinburgh and was told that her eyeballs were "station-

ary," a fact of which she had previously been in complete ignorance, though most probably it had been present for some considerable time before its discovery. In 1910 her voice began to alter, assuming frequently a nasal quality. In 1911 she began to have difficulty in swallowing, inasmuch as rapid attempts at swallowing fluids resulted often

Fig. 1.—A case of polioencephalitis.

in regurgitation through the nose. Of late she has had a persistent feeling of weakness and fatigue, which does not rapidly develop nor rapidly subside on rest. All her symptoms have persisted and slowly progressed. She has occasional "pins and needles" sensation in her feet and a dull aching pain in the legs. She also complains of frequent numbness and "deadness" in the arms and hands and of late an almost daily nausea. There has been no sphincter trouble. In the five months preceding admission she lost 25 lb. in weight. In spite of her account of loss in weight, the patient has a well nourished appearance. Her facial expression is listless, this being produced by well marked ptosis of both eyelids. The eyeballs are fixed, *i.e.*, there is complete bilateral external ophthalmoplegia. Her voice is "thick" and distinctly nasal in tone; there is considerabl edifficulty in pronouncing words containing "r."

Pulse 74 per min. Blood pressure 114. The ocular fundi are normal. The pupils are equal, of regular outline, central in position and of brisk reaction to light. The intrinsic eye muscles are as above described. The muscles supplied by the seventh nerves are normal. The left masseter is atrophic, as are also both sternomastoid muscles. There is no objective weakness nor wasting elsewhere in the body. No tremor; no ataxia. Gait and station normal.

The arm jerks, knee jerks and ankle jerks are present and equal on either side. The plantar reflexes have been rather variable, that on the right side being several times of extensor type. The abdominal reflexes are sluggish but equal on either side. There is no loss of power to appreciate temperatures nor touch stimuli. Pin prick is felt more acutely on the left than on the right side of the trunk. Electrical reaction showed diminished excitability in the left masseter and in both sternomastoid muscles. In none was there any suggestion of a myasthenic reaction. No abnormal changes have been found by serological examination of the blood and cerebrospinal fluid.

Possible diagnoses in this case are: (1) Chronic superior polioencephalitis; (2 syringobulbia; (3 myasthenia gravis.

Of these, the first is the most probable in spite of the great slowness in progression. The disease known by this name might with advantage be termed in words more truly indicative of its exact pathology. The lesion is degenerative rather than inflammatory; such degeneration being produced by simple lack of vitality or through the action of a specific and selective toxine as yet unknown and its place of incidence being the nuclear elements in the bulb. Cavity formation or gliosis in the bulb must be considered because of the possible change in the type of plantar reflex and the dulling in power to appreciate pain stimuli. However, the evidence of involvement of the fillet and the pyramidal tracts is so slight as to be inconsiderable. The facial aspect of this patient, is that of myasthenia gravis, but the presence of definite muscle atrophies, the absence of specific electrical reactions, and the very slow and steady progress of the disease, furnish strong discounting arguments.

### Third Division—Dr. Pearce Bailey.

**A Case of Pure Alexia, with Localization Confirmed at Operation.**—Dr. Louis Casamajor presented this case:

Following Wernicke's original work on the cerebral localization of speech function and lesions causing aphasia, there were many attempts to divide and subdivide the classification and demonstrate lesions responsible for the different forms. Of all the forms of language function disturbance there is no more definite picture than that of alexia—an inability to read or understand written language. From a study of autopsy material Déjérine offered the hypothesis that there exists in the brain a definite reading center, i.e., a center of visual word memory which he placed in the angular gyrus on the left side. This author divided alexia into two forms: (1) alexia (word blindness) with agraphia or marked writing defect; (2) pure alexia with integrity of writing both spontaneous and on dictation.

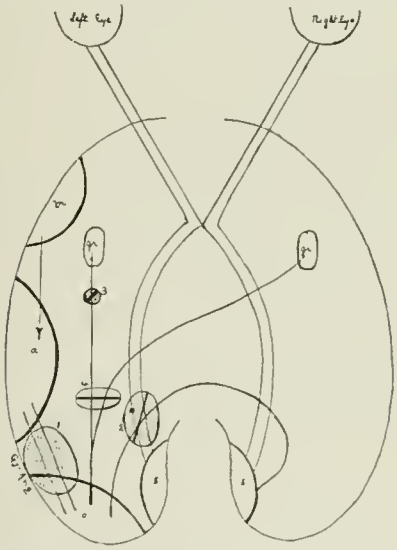

Fig. 2.—Diagram showing locations of lesions causing alexia. (From Liepmann.) *a*, Sensory (acustic) speech area. *m*, Motor speech center. *o*, Center for optic memories. *s,s*, Visual centers (calcarine cortex). *gr*, Writing centers for right and left hands. *Gyr. Ang.*, Angular gyrus. Lesion 1 causes alexia and agraphia. Lesion 2, pure alexia with hemianopsia. Lesion 3, pure agraphia of only the right hand. Lesion 4, pure agraphia of both hands.

Form 1, he considered due to a lesion in the angular gyrus destroying visual word memory, thus preventing the comprehension of written words and the production of them.

Form 2, he thought due to a subcortical lesion under the angular gyrus destroying the fibers going to it from the optic center.

Liepmann does not recognize the existence of a special center for visual word memory and his explanation of the location of these lesions will be seen in the accompanying diagram, Fig. 2. Alexia and agraphia, according to Liepmann, may be caused by a lesion in the angular gyrus, but it does so because it interferes with the communication between the sensory speech center (a) and that of optic memories (o). This prevents the understanding of reading as it interrupts the path o-a and also makes writing impossible, as the path a-o-gr. is no longer functionating.

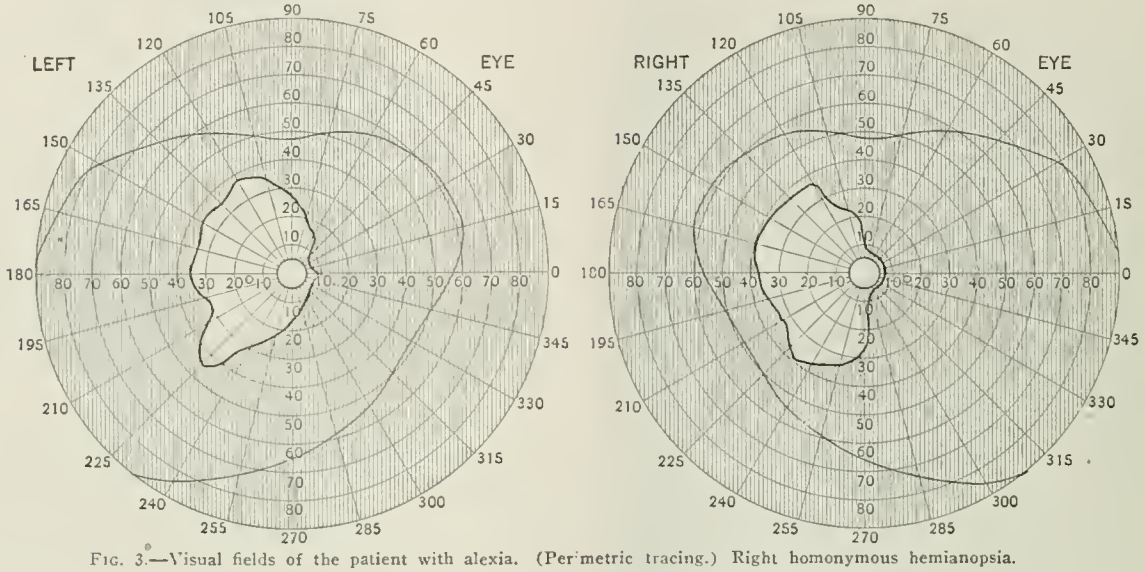


Fig. 3.—Visual fields of the patient with alexia. (Perimetric tracing.) Right homonymous hemianopsia.

Pure alexia which is practically always associated with right homonymous hemianopsia is caused by a lesion lying deep in the substance of the left occipital lobe pressing not only on the optic radiations but upon the fibers going from the calcarine area to the optic memory center (O). A glance at the chart shows that this would cause pure alexia with the writing function undisturbed as the path A-O-gr. is not interfered with.

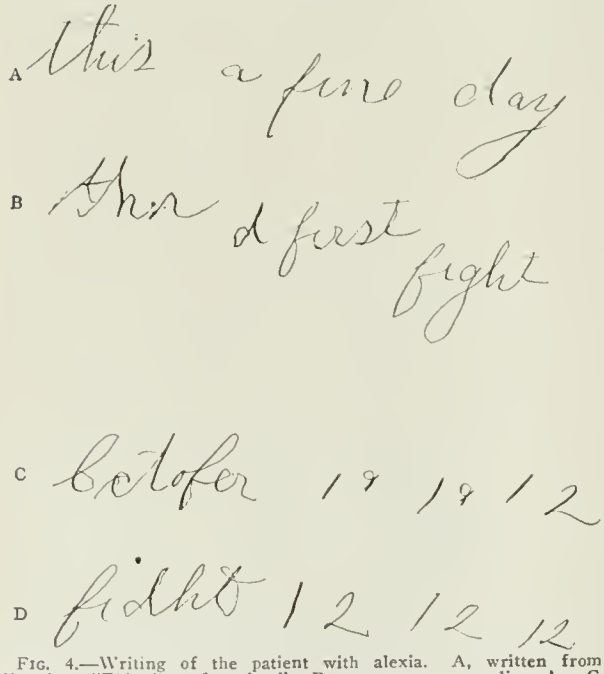


Fig. 4.—Writing of the patient with alexia. A, written from dictation, "This is a fine day." B, attempt to copy line A. C, written from dictation, "October 19, 1912." D, attempt to copy line C.

The case here reported is of interest from the point of view of localization in view of the conflicting opinions above expressed.

S. C., American, carpenter, age 35 years, was sent to the Third Division on October 17, 1912, by Dr. E. J. O'Shaughnessy, of New Canaan, Conn., complaining of fainting spells, periodic attacks of headache and vomiting. The family history was negative and his early life uneventful. He denied syphilis. Three years before admission he had been struck on the head by a falling beam and rather severely injured. Following this he suffered from frontal and occipital headaches which increased in severity. Six weeks after the injury he underwent a frontal sinus operation which afforded him no relief.

In January, 1912, he began to complain of weakness in his legs, loss of ambition and failing eyesight. In April, 1912, he had his first attack of severe headache and vomiting lasting 3 or 4 days. After this he had three or four similar attacks of which little is known. On July 25, there was another attack of severe headache and vomiting after which he slept for two hours. On awakening he was confused and disoriented and thought he had been operated upon, which condition lasted less than twenty-four hours. From now on his headache was more or less constant and occasionally he vomited. On September 10, he became semiconscious, vomited, had hiccough and voided urine involuntarily. He could be aroused only with difficulty but was unable to answer questions. At this time, it was noticed that he had double choked discs. Two days later he had recovered but had no memory of what had happened. On October 5, his physician noted that he could not recognize many of the letters of the alphabet.

On admission here on October 12, he showed slight swaying in gait and station and some intention tremor of the arms and legs. All deep and superficial muscle reflexes were active and equal. No clonus or Babinski. There was neither sensory disturbance nor ataxia. Dr. Holden's examination of his eyes showed unequal pupils. The right pupil was sluggish to light, left O. K. Ocular movements normal, no nystagmus. Right homonymous hemianopsia, not even light being perceived (Fig. 3). There was papilloedema of 2 D in each eye.

Speech function examination showed a very slight degree of sensory aphasia in that there was some paraphasia on spontaneous speech and he failed to name some common objects correctly. The most prominent feature of the case was a complete alexia without disturbance of faculty of writing. He was unable to name the letters of the alphabet correctly calling G-L, K-N, C-R, F-E, H-Y, etc. He was unable to read the simplest words or to reognize such simple symbols as U. S. A., Y. M. C. A., Conn., N. Y., etc.

In the writing tests he wrote well spontaneously, making few mistakes. Writing from dictation was on the whole good, but he was unable to copy anything, even what he had written himself (see Fig. 4). His mentality was not impaired. He had clear insight into his aphasic disorder. He had no memory disturbance. He said and wrote the multiplication tables of 2 and 7 with accuracy.

His urine was negative. Serum Wassermann positive. Spinal Fluid: Glob. plus plus. Negative Fehlings. Cells 5 lymphocytes.

During his stay in the hospital the patient complained of continual severe frontal headache and frequently had projectile vomiting. On October 24 he received 0.6 grms. salvarsan. but no improvement followed. At times he was stupid and appeared irrational.

On November 6 he was noted as having a slight right facial weakness and some increase of deep reflexes on the right side. No Babinski.

On the diagnosis of occipital lobe tumor, Dr. Elsberg did an exploratory craniotomy on November 14, 1912. On opening the dura there was evidence of great intracranial pressure but no tumor was seen. An incision was made into the brain substance to the ventricle and considerable yellowish fluid escaped. By inserting his finger in the ventricle the surgeon felt a hard tumor mass in the mesial wall of the ventricle.

Following the operation the patient had a complete aphasia which gradually receded. All reflexes were diminished. He made a good post-operative recovery and now has a hernia over the skull opening.

Physical examination now shows hemianopsia as before, discs show no swelling. Reflexes the same as on admission except that possibly there is a slight increase of the right knee jerks. Aphasic status now shows considerable sensory aphasia. Spontaneous speech is markedly paraphasic. He is unable to name simple objects or to pick them out when told to. There is no agnosia or lack of understanding of speech. Although he cannot name a knife when he is shown one yet he knows how to handle it and takes his own knife out of his pocket to show he knows what it is. The alexia is still complete and he is also agraphic. In attempting to write his name, stops confused after writing his first name. He is unable to write even simple words on dictation. Copying is absolutely lost. His insight into his aphasia is still clear. Mental examination is impossible on account of the aphasia.

The position of the tumor in this case bears out the contention of Liepmann in regard to the causation of alexia. Lying as it does on the mesial wall of the ventricle it could cause very little pressure on the angular gyrus region. It corresponds accurately with Lesion 2 of Liepmann's chart. The sensory aphasia following the operation is certainly due to disturbances of the tempo-sphenoidal lobe coincident to the decompression.

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# THE SEWERAGE PROBLEM IN NEW YORK CITY.

SUMMARY OF THE REPORT OF THE METROPOLITAN SEWERAGE COMMISSION FOR 1912 BY THE PUBLIC HEALTH, HOSPITAL, AND BUDGET COMMITTEE OF THE NEW YORK ACADEMY OF MEDICINE.

Prepared by LINSLEY R. WILLIAMS, M.D.

A comprehensive report issued by the Metropolitan Sewerage Commission of New York in 1912 contains a description of the present sanitary condition of the harbor, and the degree of cleanness which is necessary and sufficient for the water.

An earlier report, published in 1910, showed three essential facts: (1) That the harbor was grossly polluted with sewage; (2) that this organic matter had drawn heavily upon the natural assimilative capacity of the water, and, (3) that the tidal action did not flush out the harbor, but each tide only partially refreshed the water.

The 1912 report contains a large amount of data published for the first time, with numerous tables and diagrams of the examination of dredgings from the harbor bottom, the numbers of bacteria in the water, and the amount of dissolved oxygen. The report describes the harbor as a part of the sea, consisting of the following arms or divisions: Lower Bay, Jamaica Bay, Arthur Kill, Upper Bay, Kill van Kull, Newark Bay, Hudson River, Lower East River, Upper East River, Harlem River—the total water surface being 210 square miles at high tide. The quantity of water in the harbor is large, but the net seaward discharge is relatively small. Twelve billion cubic feet of water enter the Narrows at each tide and thirteen billion, three hundred million cubic feet pass out, the excess flow to sea being only a little over 10 per cent. above the flow landward. The flow toward the Narrows through the East River, formerly thought to be large, was found to be negligible from the standpoint of sewage disposal.

The harbor received, in 1910, the discharges of 6,423,000 persons, amounting to 110,000,000 cubic feet of sewage per day, a large proportion of which entered the East River, making this arm of the sea the most heavily polluted of all the divisions of water comprising the harbor. The waters of the harbor continually showed the presence of large fields of floating sewage, oily sleek, and quantities of visible fecal matter. Some parts of the harbor, such as the Passaic River, Newtown Creek, Gowanus Canal, Buttermilk Channel, the Bronx River and the Harlem River, as well as parts of the East River, were always offensive to sight and smell.

The sewage is discharged through several hundred outlets located along the water front and is slowly diffused. Oxidation begins at once and some solid parts settle to the bottom, where the available oxygen soon becomes exhausted and putrefaction sets in.

As the flushing action of the tide is so slight, the organic matters are disposed of in the harbor water by a natural process of assimilation which the commission has termed digestion. The digestion is dependent on the oxygen content of the water and it is essential that there shall always be enough oxygen present to carry it on. If the supply of oxygen is ever allowed to become exhausted, the water will turn black, offensive gases will be given off and the harbor will resemble a huge septic tank.

In order to determine the oxygen content, investigations, lasting over a period of two years, were made, the water being examined in various parts of the harbor and at various depths. The 2,670 samples which were examined showed that the water, which at usual temperatures should normally contain roughly 6.4 c.c. of oxygen per litre, contained much less than this. The Narrows showed 64-89 per cent. of the normal, the mouth of the Hudson (opposite the Battery), 51-64 per cent., and the mouth of the East River, 50-64 per cent. The conditions varied, being usually better at high tide than at low tide and better in winter than in summer. Other examinations showed the amount of pollution in deposits on the harbor bottom and the numbers of bacteria in the water.

It seemed wise to the commission to establish a standard of cleanness, and to this end a number of experts were asked to advise with the commission: Prof. W. E. Adeney of Dublin, Ireland; Charles V. Chapin, M.D., Health Officer of Providence; Harrison P. Eddy of Boston; Desmond Fitzgerald of Boston; William P. Mason of Troy;

William T. Sedgwick, Professor of Biology in the Massachusetts Institute of Technology, Boston; F. Herbert Snow, Chief Engineer, Pennsylvania State Department of Health, and C. E. A. Winslow, Curator of Public Health, American Museum of Natural History.

The experts were of opinion that a provisional standard of cleanness was necessary and agreed with the commission that no one standard, either chemical or bacteriological, would be practicable, Prof. Adeney alone dissenting. This difference of opinion was more seeming than real. Dr. Adeney considered that all sewage should be thoroughly screened before being discharged into the harbor and that, if this was done, a chemical standard would be sufficient for the water. His standard would not permit the reduction of dissolved oxygen to less than 60-70 per cent. of saturation and an ammoniacal nitrogen content not exceeding 1-1½ parts per hundred thousand. The commission has published in full the reports of the various experts and has proposed the following standard.

1. Garbage, offal, or solid matter recognizable as of sewage origin shall not be visible in any of the harbor waters.

2. Marked discoloration or turbidity, due to sewage or trade wastes, effervescence, oily sleek, odor, or deposits shall not occur except perhaps in the immediate vicinity of sewer outfalls, and then only to such an extent and in such places as may be permitted by the authority having jurisdiction over the sanitary condition of the harbor.

3. The discharge of sewage shall not materially contribute to the formation of deposits injurious to navigation.

4. Except in the immediate vicinity of docks and piers and sewer outfalls, the dissolved oxygen in the water shall not fall below 3.0 cubic centimeters per litre of water,* Near docks and piers there should always be sufficient oxygen in the water to prevent nuisance from odors.

5. The quality of the water at points suitable for bathing and oyster culture should conform substantially as to bacterial purity to a drinking water standard. It is not practicable to maintain so high a standard in any part of the harbor north of the Narrows, or in the Arthur Kill. In the Lower Bay and elsewhere, bathing and the taking of shellfish cannot be considered free from danger of disease within a mile of a sewer outfall.

A careful reading of the report of the commission and its consulting experts makes it apparent that if conditions in the harbor are not promptly rectified, the waters will become so foul as to constitute a public nuisance. An important step toward the prevention of this nuisance is the establishment of a standard of cleanness. It is evident that in order to maintain the standard, much sewage must be kept out of the harbor. To accomplish this end, main drainage works must be built to carry the sewage from its present points of outlet to places where it can be disposed of without creating a nuisance or doing harm to the public health. These works will have to be constructed by a central board or commission possessing special powers, such as the New York Water Board possesses and such as were given to the Rapid Transit Commission which constructed the subway.

The term of life provided for the Metropolitan Sewerage Commission expires by statute May 1, 1913. The powers and functions of this board have been solely advisory. It has made many investigations and recommendations looking to the improvement of sewerage and sewage disposal. In addition to the work described in the large printed volumes of reports already referred to, the commission has made specific recommendations for the construction of main drainage works and sewage disposal plants for New York. The plans for these works have been issued in a series of preliminary reports of which five have thus far been printed.

It must be obvious to all who have followed the work of the commission that the time has come for the city of New York to follow the example of other large seaport cities and take steps to protect and improve the sanitary condition of the harbor. To the casual visitor to this city, as well as to the permanent resident, the custom of discharging the sewage under the present careless and unsystematic conditions offends the sense of decency and may involve grave sanitary consequences. What the conditions would be thirty years from now, if nothing was done to protect the harbor, is extremely unpleasant to consider. The population draining into these waters will be about twice what it is to-day and the evil consequences of pollution will be correspondingly increased.

In building extensive works for the sanitary disposal of its sewage, in accordance with the plans of the Metropolitan Sewerage Commission, New York will but follow the lead of practically all the great cities of the world, including London, Paris, Berlin, Hamburg, Bremen, Glasgow, Birmingham, Manchester, Southampton, Dublin, Belfast, Boston, Providence, Worcester, New Bedford, Baltimore, Philadelphia, Washington, Atlanta, and Chicago.

*With 60 per cent. of sea water and 40 per cent. of land water and at the extreme summer temperature of 80° F., 3.0 cubic centimeters of oxygen per litre corresponds to 58 per cent. of saturation.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held February 6, 1913.*

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

**The Care and Control of the Feeble Minded.**—The following resolution was offered, seconded, and carried: "We believe that the interests of the State and of the individuals concerned would be best served if the care of the feeble minded in the State of New York were provided for as follows, namely,

1. That the laws of the State be so altered that the entire charge of the feeble minded throughout the State be placed in the hands of a Board of Control. Such a board should have powers analogous to those residing in the State Board of Lunacy and should be responsible for the care of all feeble minded in the State from birth to death. They may, however, at their discretion, delegate the education of such children as are educable to parents and, in such communities as make proper provision for the care of the feeble minded, to the local education authorities during that part of the lives of such educable feeble minded children as come within the usual school ages.

2. Race, religion, and economic status should not relieve the family of a feeble minded individual from the supervision of the State authorities or the restrictions which it might be necessary to impose for the public welfare.

3. Before school age the care of the feeble minded would naturally fall to the family under the supervision of such a board, with or without the additional observation of private agencies.

4. During school age all educable children should be taught so far as possible to be self-supporting either by private means, or in existing public schools, or in special institutions if these means are later provided.

5. After school age, the feeble minded who are non-self-supporting should be cared for by the State or by private means under State supervision. Those who are self-supporting might be allowed under restrictions to live outside of institutions, but it should be the ultimate aim to supervise all feeble minded in or out of State institutions that the propagation of their kind may be prevented. To accomplish this result some kind of custodial care for women and men in farm colonies will have to be provided.

6. All of the feeble minded who come under the jurisdiction of the courts should be referred by the courts to the State Board of Control for detention and care, and to be separated from the feeble minded who have developed no anti-social tendencies. Every child brought before the Children's Court should be referred to the State Board of Control for mental examination.

7. To the end that the life history of all feeble minded be at all times available, for the sake of the schools, the courts, and the authorities of the State, a bureau should be established at once for the permanent records of all

the feeble minded from birth to death who come within the jurisdiction of the State. Until such time as the proposed Board of Control is organized and provided with necessary facilities the Bureau of Records of the City or State Department of Health should be the official depository of such information as may be obtained.

8. We believe that there is a need for the so-called ungraded classes of the public schools. Our criticism of such work as is now done for the feeble minded by the Department of Education of New York City is that the examinations and tests and selection of children suitable for education have not been under adequate medical direction, and that the equipment and organization are insufficient. Furthermore, we find no provision for the morally defective who are found at present in the regular classes of the public schools.

9. We believe that although a department of charities is not a suitable agency of government to take upon itself the permanent control of the great problems of the feeble minded, nevertheless, under existing conditions and until such time as a Board of Control may be established, there is a legitimate field for the present activities of the Department of Charities.

Any thoroughgoing organization for the care of the feeble minded and protection of the State from their incapacity, criminal tendencies, and their baneful effect upon their progeny should contemplate: (1) State control cooperating with existing local or municipal agencies. (2) A permanent bureau of life records with compulsory notification and registration. (3) Self-support where possible for the feeble minded. (4) Segregation and detention where necessary. (5) Prevention of the propagation of their kind. (6) An organized and permanent campaign of study and education, for the prevention of the causes which lead to feeble mindedness.

**Need for Proper Hospital Provision for Children.**—The sub-committee on Hospitals held a meeting at which was discussed the matter of meeting by municipal appropriation the urgent need of proper hospital provisions for children. The unanimous opinion of the sub-committee was that it would be inadvisable to build a special hospital for children and that a separate children's service at the general hospitals is much preferable, provided that if possible such a service is constituted as a distinct department with a single head and continuous service.

The scientific session was held under the auspices of the Department of Surgery in Columbia University.

**A Preliminary Morphological Study on Certain Developmental and Pathological Changes Occurring in the Mammary Gland.**—Dr. Hugh Auchincloss presented this communication which he illustrated with lantern slide pictures. He said that to understand the rationale of certain clinical symptoms and pathological processes, it was most important that a few fundamentals concerning development and anatomy should be clearly understood and these it would be the purpose of his paper to discuss. The human breast was a gland derived from the epidermis by a process of epithelial invagination into the corium and subcutaneous tissues. In the opossum it had the appearance of a sweat gland, but in the human being there were features resembling both sebaceous and sweat glands. A normal, inactive human breast showed groups or lobules of small canals, lined by two layers of epithelium. These canals joined to form ducts opening into the nipple. One large nipple represented a complete gland system in itself. Of these systems there were a variable number from approximately fifteen to twenty-three. It was of importance to recognize the character of the stroma and the disposition of the fat bundles. Close to the epithelium was the intralobular stroma showing a loose arrangement of young connective tissue cells and capillaries, in marked contradistinction to the interlobular stroma composed of more mature, longer, white fibrous connective tissue, elastic fibers, and the larger vessels and nerves. An origin and analogy of these structures was evident as one examined a diagrammatic sketch of the more prominent skin structures. The pathogenesis of mammary cysts had been for generations a subject of extensive investigation; there were a great many varieties from a morphological standpoint, and Dr. Auchincloss presented slides to demonstrate certain features that occurred in the earlier stages of cyst development in this disease.

**The Possibilities of Preserving the Integrity of Potential Body Cavities by the Use of a Foreign Body to Prevent Adhesions.**—Dr. Frederick Prime, Jr., threw on the screen pictures of the work done with the use of foreign bodies in certain cavities to prevent adhesions. They found in cellulin a substance free from irritation and which prevented adhesions. Pictures showed the application of this substance in brain surgery on animals; the part next to the dura mater was attached by fibrous tissue, while the part next to the brain substance remained free of adhesions for long periods of time after the operation.

Dr. Charles H. Peck believed that the material described by Dr. Prime should have a large field of usefulness because it was non-irritating and could be left in the tissues for long periods of time without any resulting reaction at all. He believed it to be specially applicable in nerve and tendon suturing; here it certainly had a distinct field. In the surgery of joints also there was a promising field; at least from the experimental standpoint. It seemed to him that this was the best material for this purpose both because it could be sterilized so readily and because of the ease with which it was handled. It certainly had a field in work upon the peritoneum and here it should be given a trial.

**The Adaptation of the Cinematograph in the Study of Tissue Growth.**—Drs. J. E. McWhorter and Frederick Prime, Jr., showed some moving pictures of the chick blastoderm in its various stages of development, and of tissue cultures, particularly the activity of their isolated cells. In the development of this work their object had been twofold: to present to students in their study of tissue growth and the early development of the embryo, a graphic picture of the changes which these tissues underwent; secondly, to reproduce for study such movements as were not readily followed by the eye, as, for example, the rapidly beating embryonic heart, or the movements and division of the slower growing tissue cells. The technique used in the preparation of the chick blastoderm for purposes of photomicrography was described. With this method they had succeeded in keeping alive, and had observed the development of very young chick blastoderms, those of twenty-four-hour incubation, for over thirty-one hours. It was possible to observe the developing heart from before the first beat up to and including the first appearance of the blood cells in the primitive circulation. This formed the first group of pictures shown. The second was one showing the primitive circulation taken from different areas in the area pellucida, and the third showed tissue cultures.

## NEW YORK NEUROLOGICAL SOCIETY.

*Stated Meeting, Held January 7, 1913.*

The President, Dr. L. Pierce Clark, in the Chair.

**A Case of Cholesteatoma of the Brain.**—Dr. I. Strauss reported this case and showed the specimen. The patient was a woman, thirty-two years old at the time of her death, who was admitted to the Mt. Sinai Hospital on October 5, 1909. The patient was one of twins; the other was healthy. One brother was mentally deficient. The patient's past history was unimportant. When she married, at the age of 22, her weight was 95 pounds. Menstruation began at 15 and was regular until the birth of her second child, six or seven years ago. She had three children, living and well, the youngest sixteen months old. No miscarriages; never had any skin eruption; no cardiac, pulmonary or gastric disturbances. Her present illness dated back to the birth of her second child, when she began to have menstrual disturbances, having periods every two or three months. There was no pain. During this time she became obese and was steadily growing stouter. She complained of headache, and about five months after the birth of her last child she first showed signs of mental derangement. She lost her memory and talked garrulously and incoherently, and was committed to an asylum in Central Islip, where she remained about nine months. During her stay in the hospital she had pneumonia, from which she recovered without complications. Since her return home her headaches had increased in severity and recurred more frequently. She often vomited small quantities of food; not projectile in character. For the past six months she gnashed her teeth almost continually, stopping only during conversation and mastication. Her eyesight had been gradually growing poorer. Her memory was fair, but she forgot recent happenings and she took very little interest in current events. She complained of pain in the jaws and of some difficulty in chewing and swallowing. She was also subject to earache. She had great thirst, drank considerably and voided copiously. Perspiration was profuse. The bowels were constipated. She had not menstruated in four months. She continued to gain weight, although not as rapidly as formerly. The patient's facial appearance at the time of her admission to Mt. Sinai

Hospital was suggestive of acromegaly. The lips were thick, the upper jaw seemed wider than normal, and her nose was thick and broad. The teeth were regularly placed and ground from the constant gnashing. The hair was coarse and sparse, and there was a considerable growth on her upper lip. The axillary and pubic hair was likewise sparse. Her mentality was dull and sluggish. She was indifferent to her surroundings, and her attention was easily distracted. She was oriented, but her memory was very deficient. The subcutaneous fat was very sensitive. The uterus was small. The blood pressure was 90, and the temperature averaged about 98.3°. There was some atrophy and weakness of the right leg, with diminished reflexes, suggestive of an old anterior poliomyelitis. Glycosuria was present. The fundi were negative, although on account of the restlessness of the patient, neither a satisfactory examination of the visual fields nor an *x*-ray could be made. Dr. Strauss said the diagnosis of pituitary tumor was made, based on the early appearance of Froelich's syndrome, the character of the facies and the symptoms of increased intra-cranial pressure. The unusual feature was the development of a true diabetes. In April, 1910, the patient was transferred to the Montefiore Home, where it was ascertained that she had a positive Wassermann reaction in the blood (negative in the cerebro-spinal fluid), and that there was not much doubt that her husband had been luetic. At this time the right eye showed atrophy of the disc; the left a commencing atrophy, and there appeared to be a bilateral temporal hemianopsia. She remained in a stationary state for some time, when she suddenly became somnolent and developed a marked edema of the face and lips. She came out of this state after a few days and was given an intramuscular injection of salvarsan. The improvement in her mental condition produced by this was very remarkable: she took cognizance of her surroundings, her memory improved, she thanked the physicians for what they had done for her and felt sure she could return home in a short time. The glycosuria gradually disappeared, and she was maintained on an antidiabetic diet. Six months later there again suddenly appeared an extensive edema of both upper eyelids. There were subconjunctival hemorrhages, the pupils were moderately contracted and she became comatose, with stertorous breathing, loss of all reflexes and incontinence; no sugar. A phlebotomy was performed, bicarbonate of soda and diuretin administered, and in two days the edema had disappeared, the patient came out of her coma and was mentally clearer than she had been in six months. During the succeeding three months she was given several injections of salvarsan, together with mercury in different forms. She remained fairly clear mentally and her general condition was good. Sugar was absent for considerable periods of time, and, if present, it was only in small amounts. There was very little headache or dizziness. Early in December, 1911, she became semi-stuporous and slept a good deal. The stuporous condition became more marked, and death occurred on December 21.

At the autopsy, which was confined to the brain, a tumor was found on the under surface of the brain. It presented as a cystic and gelatinous mass, extending from the medulla at the inferior level of the olivary bodies forward as far as the optic chiasma. The main prominence of the tumor presented itself on the left side of the pons, in the interpeduncular space. The tumor compressed the pons, especially on the left side, although also some of the right half of the pons had been destroyed. The destruction of the pons on the left side extended inward to about its width. In this region the tumor was both cystic and solid, the cyst being about 1.5 cm. in diameter. The solid part of the tumor was yellowish in some places and darker in others, where it was of a gelatinous appearance, and there were numerous small, yellow areas scattered throughout the mass in this region, which contained hard, calcareous substance. The third nerves could be seen coming out on either side of the mass. The main body of the tumor occupied the region of the basilar ganglia on the left side. The left lenticular and caudate nuclei were compressed and displaced laterally, and the left interinal capsule was missing in its lower two-thirds. The fornix and septum lucidum were displaced to the right and the optic thalamus appeared to be completely replaced by the tumor. In one portion, the tumor broke through the floor and lateral wall of the left ventricle, and projected as a mass the size of a pea into the ventricular cavity. The tumor extended forward into the frontal lobe almost to the frontal pole on a level with the second frontal convolution. The tumor measured about 5 cm. in its longest diameter, from above downward: its greatest width was 4 cm. It appeared to be encapsulated, the capsule above being a thin bridge of brain tissue one and a half mm. in thickness, which formed the floor of the left ventricle. The hypophysis seemed to be of about normal size, but somewhat flattened. Microscopically, the growth proved to be a cholesteatoma, possibly of embryonal origin.

**A Case for Diagnosis.**—Dr. Foster Kennedy presented a married woman, thirty-five years old, who had enjoyed good health up to about one year ago, when she began to suffer from severe headaches, and six months later there was added to these intense attacks of vertigo, with frequent vomiting. Three weeks ago she first noticed that her left eyelid drooped, and that there was weakness of the left face, which became twisted when she laughed. She now complained of severe headaches, intense dizziness, frequent vomiting, and incomplete paralysis of the left third nerve. Her reflexes were normal. There was no ataxia. Her speech was normal. The Wassermann reaction was negative and an examination of the cerebrospinal fluid gave negative results. There was slight inequality of the pupils, the left being smaller and more sluggish than the right. There was no nystagmus. Dr. Kennedy said this patient had been under his observation for only a short time, and he had made a very tentative diagnosis of pontine tumor.

Dr. I. Abrahamson said the case shown by Dr. Kennedy recalled to his mind that of a child that was brought to the clinic with a paralysis of the sixth and seventh nerves on the right side, followed in the course of two weeks by headaches of increasing severity. The symptoms were first regarded of peripheral origin. Subsequently, the child had a convulsion, with hyperesthesia and right-sided paralysis, the symptoms pointing to a pontine tumor. The patient was growing progessively weaker, and a fatal outcome was expected. In another case, which Dr. Abrahamson said he had presented at a previous meeting of the Society, the patient was a woman with a progressive bilateral opthalmoplegia externa. She gave a history of severe headaches, followed by ptosis and weakness of one side of the face. After temporary improvement she developed a similar condition on the opposite side of the face. The headaches were of an intermittent character. In Dr. Kennedy's case, the speaker said he was inclined to believe that there was a neoplasm involving the pons.

Dr. William M. Leszynsky suggested that the symptoms were due probably to a syphilitic basal meningitis.

**A Case of Extracerebellar Tumor; Operation; Recovery.**—Dr. Foster Kennedy reported the case of a boy, nineteen years old, who was admitted to the N. Y. Neurological Institute on June 12, 1912. The history obtained was that he had always been bright, but not overstudious. He was fond of music and quite an accomplished violinist. His general health had been good. Four years ago he received a severe blow on the head, and at that time it was noticed that his right upper eyelid drooped. When a small boy he told his father that he could not see through a pair of opera glasses with both eyes, and at a subsequent examination, made by an oculist, it was said that the sight of his right eye was practically gone. There was no history of headaches nor convulsions during infancy or childhood. The boy's present illness dated back to March 18, 1912, when he attended a party and ate a good deal. On the following day he complained of persistent headache which at first was in the left temporofrontal region, later extending to the left side of the face and neck to the mid-line. The headache had persisted more or less constantly, but there were intervals during which he was free from it. Between the onset of his illness and April 1st he had vomited once. Early in May it was noticed that he could not play the violin well, due to inability to grasp with the left hand. A few days later it was noticed that he wobbled in walking: this symptom became more pronounced, and the father stated that the patient fell to the left. About two weeks later he had a severe vomiting spell, with much pain in the head. Since then he had vomited only four times, always late at night. When Dr. Kennedy first saw the patient, on June 10, 1912, an examination of the eyes showed a choroiditis, with heaping of retinal pigment in the right eye, and the pupil was more sluggish than that of the left. There was occasional slight nystagmus to the left; never to the right. There was slight infra-nuclear weakness of the left face, with deviation of the jaw to the same side. There was ataxia of the left arm and leg, with a tendency to fall to the left side. No sensory changes were found. On June 14, the patient complained of severe headache in the frontal and occipital regions, but more frontal than occipital, and there was marked

projectile vomiting. There was now gross coarse nystagmus on looking to the left. There was no impairment of smell. The eyes now showed definite blurring of the discs, with small striate hemorrhages. The pulse was slow. The left knee jerk was slightly more active than the right. On June 5, 1912, the patient was operated on by Dr. Charles A. Elsberg, the idea being to relieve intracranial pressure. Upon making an opening over the left occipital region, there was enormous pressure, and the left cerebellar lobe immediately protruded to such an extent that it was almost strangulated before the dura could be incised. The left cerebellar lobe was then seen to be apparently the seat of an infiltrating tumor, apparently a glioma, extending from before backwards. Some of this tissue was removed and the wound was closed. The patient made an uneventful recovery from the operation, with the exception of a slight rise in temperature, with occasional vomiting, on the fourth day. On June 25, his temperature had again fallen to normal; there was no vomiting or pain. On July 2, the ataxia was less marked and there was a general improvement in the patient's condition. There was no pain nor vomiting, and he was able to sit up voluntarily without effort nor dizziness. He left the hospital on July 6. The patient's present condition was entirely satisfactory. He considered himself practically well, and had resumed his violin practice.

Microscopic report. No gliomatous tissue was found in the specimen, so the good result in this case was entirely produced by a simple decompression, the growth being still in front of the exposed cerebellar lobe.

Dr. L. Pierce Clark said that in dealing with slow growing tumors of the cerebellum, especially in early life, it was difficult to say just what was going on either in the tumor or cerebellum itself by the symptoms presenting, as the frontal lobes of both sides were closely connected with both cerebellar lobes and had reciprocating functions. Though the cerebellum made little recovery after tumor removal, it was quite possible for the frontal brain to take up cerebellar functions of equilibration and defective muscle tonus and regulate the same through the cerebro-cerebellar pontine tracts.

**A Case of Acoustic Neuroma.**—Dr. I. Abrahamson presented a girl, nineteen years old, a native of Bohemia and a domestic by occupation, who had suffered from headaches and tinnitus for over two years. Subsequently she complained of vomiting and vertigo and of increased noises in the left ear, with diminution of hearing. For four months she had complained of visual disturbances, with gradual loss of sight. The gait was unsteady, with staggering toward the left side. The vision of the left eye was less than that of the right. For the past two months there had been amenorrhea. Examination of the eyes showed double choked disk, with consecutive atrophy, most marked on the left side. It was impossible to map out the fields, owing to poor vision, the patient being scarcely able to count fingers. The ocular movements showed coarse nystagmus to the extreme left; less marked to the right. The pupils were large, some reaction to light was present. Smell was impaired; taste was normal. There was corneal hyperthesia. The right face was flattened; there was spasm of the left face. Hearing was very defective on the left side; that on the right side was somewhat diminished. The head was held in the left cerebellar attitude; there was a cerebellar gait, with a tendency to fall mainly to the left. There was no hypotonus; no ataxia. There was some weakness on the right side. Sensation was intact and the sphincters normal. The deep reflexes were slightly increased; no Babinski. The Wassermann reaction was negative. Dr. Abrahamson said the symptoms in this case were typical of an acoustic neuroma. The absence of facial paralysis on the left side was not unusual.

**Officers.**—The following officers were elected for the ensuing year: *President*, Dr. Smith Ely Jelliffe; *Vice-President*, Dr. E. W. Scripture; *Corresponding Secretary*, Dr. J. Ramsay Hunt; *Recording Secretary and Treasurer*, Dr. C. E. Atwood.

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**Revocation of Osteopathic License Obtained by Fraud.**—When an applicant has been registered under the Pennsylvania act of 1909, P. L. 46, as a practitioner of osteopathy, and the board of examiners subsequently learns that the registration was obtained by means of a diploma fraudulently issued and obtained by him, the board's course is said to be to afford the applicant a hearing, and if satisfied that the license was obtained by fraud to take formal action to revoke the license. The applicant's false affidavit as to his attendance at lectures does not make him liable to a conviction of perjury.—Simmons' Case, 38 Pennsylvania Co. Ct., 195.

## CLINICS, DEPARTMENT OF PUBLIC CHARITIES

Calendar, March, 1913

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| **MONDAYS** | | | |
| *City Hospital* | Surgery | Dr. Dawbarn | 2:30 P.M. |
| | Dermatology | Dr. Fordyce | 3:00 P.M. |
| *Cumberland Street Hospital* (Brooklyn) | Surgery | Dr. Walmsey | 3:00 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| | Oral Surgery | Dr. B. Shea | 4:30 P.M. |
| **TUESDAYS** | | | |
| *City Hospital* | Ophthalmology | Dr. Gilfillan | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Byrne | 9:00 A.M. |
| *New York City Children's Hospitals*, Randall's Is. | Orthopedics | Dr. Ogilvy | 10:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Ophthalmology and Otology | Dr. Lloyd | 3:00 P.M. |
| | Surgery | Dr. Iler | 3:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Genitourinary Surgery | Drs. Norton and Fraser | 2:00 P.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| *Coney Island Hospital* | Surgery | Drs. Fiske and Bogart | 10:30 A.M. |
| | Surgery | Drs. Murphy and Lack | 10:30 A.M. |
| | Medicine | Drs. Hall and Nash | 3:30 P.M. |
| | Medicine | Drs. Hegeman and Byington | 3:30 P.M. |
| **WEDNESDAYS** | | | |
| *City Hospital* | Surgery | Dr. Dawbarn | 9:00 A.M. |
| | Medicine | Dr. Quimby | 1:30 P.M. |
| | Genitourinary Surgery | Dr. Greene | 2:00 P.M. |
| | Obstetrics | Dr. Dorman | 2:30 P.M. |
| *Metropolitan Hospital* | Surgery | Drs. Bogg and Honan | 2:30 P.M. |
| March 5th | Medicine | Dr. Hathaway | 2:30 P.M. |
| March 12th & 26th | Medicine | Dr. Moore | 2:30 P.M. |
| March 19th | Medicine | Dr. Swift | 2:30 P.M. |
| March 26th | Medicine | Dr. Seward | 2:30 P.M. |
| March 5th & 19th | Neurology | Dr. Howard | 2:30 P.M. |
| March 5th & 19th | Ophthalmology and Otology | Dr. Boyle | 2:30 P.M. |
| March 5th & 19th | Electro-therapeutics | Dr. Royle | 2:30 P.M. |
| March 12th | Obstetrics | Dr. Storer | 2:30 P.M. |
| March 12th & 26th | Genitourinary Surgery | Dr. Carleton | 2:30 P.M. |
| March 12th & 26th | Laryngology and Rhinology | Dr. Foster | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Maloney | 10:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Gynecology | Dr. Pierson | 2:30 P.M. |
| *Kings County Hospital* (Brooklyn) | Dermatology | Dr. Winfield | 1:00 P.M. |
| | Orthopedics | Dr. Truslow | 9:00 A.M. |
| | Orthopedics | Dr. Napier | 2:00 P.M. |
| *Coney Island Hospital* | Pediatrics | Drs. Beck and McQuillan | 3:30 P.M. |
| | Pediatrics | Drs. Pendleton and Van Wart | 3:30 P.M. |
| **THURSDAYS** | | | |
| *City Hospital* | Medicine | Dr. Evans | 9:00 A.M. |
| | Medicine | Dr. Brooks | 2:30 P.M. |
| | Gynecology | Dr. Stearns | 2:00 P.M. |
| *Cumberland Street Hospital* (Brooklyn) | Surgery | Dr. Walmsey | 3:00 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Obstetrics | Drs. Commiskey and Judd | 10:00 A.M. |
| | Otology | Dr. Alderton | 1:00 P.M. |
| | Gynecology | Dr. McNamara | 1:30 P.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| *Coney Island Hospital* | Gynecology | Drs. McEvitt and Mills | 10:30 A.M. |
| | Gynecology | Drs. Mayne and Rankin | 10:30 A.M. |
| | Surgery | Drs. Fisk and Bogart | 3:00 P.M. |
| | Surgery | Drs. Murphy and Lack | 3:00 P.M. |
| **FRIDAYS** | | | |
| *City Hospital* | Laryngology and Rhinology | Dr. Dougherty | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Abrahamson | 9:00 A.M. |
| *Cumberland Street Hospital* (Brooklyn) | Ophhtalmology and Otology | Dr. Lloyd | 3:00 P.M. |
| | Surgery | Dr. Iler | 3:00 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |
| **SATURDAYS** | | | |
| *City Hospital* | Pathology | Dr. Larkin | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Walsh | 2:00 P.M. |
| *Kings County Hospital* | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Bristow | 2:00 P.M. |
| | Pediatrics | Dr. Little | 3:00 P.M. |
| | Medicine | Dr. Stivers | 3:30 P.M. |

ALL REGISTERED PHYSICIANS, VISITING AND RESIDENT, AND MEDICAL STUDENTS ARE CORDIALLY INVITED TO ATTEND THESE CLINICS.

Cards of Admission, valid until October 1st, 1913, may be obtained at the *Academy of Medicine*, 17 *West 43rd St., Manhattan*, and at the *Medical Society of the County of Kings*, 1313 *Bedford Avenue, Brooklyn*, as well as from the secretaries of the several medical colleges.

## Therapeutic Hints.

**The Treatment of Bronchitis in Infancy and Childhood.**—In his recently published work, G. A. Sutherland states that the patient should be confined to bed during the acute pyrexial stage, and should be given a restricted fluid diet. Warm demulcent drinks may be given freely. If the cough is dry and irritating steam inhalations may give great relief. If the secretion of mucus is free or over-abundant, the use of steam is contraindicated. The steaming should not be continuous, but should be employed for fifteen minutes at a time every hour or two. If there is dyspnea resulting from spasm of the bronchial tubes the application of hot fomentations to the back and front of the chest will often give relief. A dram of turpentine may be added to the fomentation. If plain fomentations are used they may be applied continuously for an hour and then intermitted. In many mild cases of bronchitis it will suffice to apply to the chest twice a day a stimulating liniment such as the following:

℞ Liniment. terebin. acet. (N. F.), ʒiii.
Liniment. belladon., ʒj.
Olei dulcis, ʒii.

At the ouset of the attack the bowels should be freely opened. Three grains of rhubarb powder and two grains each of gray powder and carbonate of magnesium may be given at night, and followed by a dram of sulphate of sodium or magnesium in the morning. A simple febrifuge mixture such as the following may be ordered:

℞ Liq. ammon. acet., ♏xv.
Potass. citrat., grs. v.
Tinct. aurantii, ♏v.
Aq. camphor., ad ʒj.

As regards cough mixtures the author points out that most of these tend to upset the child's digestion. Prescriptions are common in which one finds drugs to increase expectoration, or to diminish expectoration, or to do both at the same time. In the early stage of bronchitis, when secretion is defective, and a harsh irritating cough may be associated with dry catarrh of the tubes, potassium iodide (gr. ii and carbonate of ammonium (gr. ss—j) may be added to the above mixture or given separately as long as necessary. Only when secretion is over-abundant is it necessary to interfere in order to diminish it. This may be effected by the following:

℞ Tinct. belladon., ♏iv.
Ac. nitrohydrochlor dil., ♏iij.
Glycerin, ♏x.
Inf. gent. co., ad ʒj.
M. et Sig. ʒj every four or six hours.

When the patient is troubled with a persistent cough one should examine the nasopharynx and throat for signs of irritation which may be relieved by a nasal lotion or a simple throat lozenge. If the night's rest is disturbed five to ten drops of paregoric may be given occasionally for its relief. If special sedatives seem called for, a convenient mode of administration to children is the use of pastilles, which may contain one-fiftieth of a grain of morphine or codeine. In the convalescent stage the patient should have a sufficient amount of animal fat. A combination of cod liver oil and hypophosphites gives good results in restoring a healthy condition of the bronchial tubes.—"The Treatment of Disease in Children."

## Miscellany.

**Reports of Cures.**—C. B. Lockwood tells the story of the philosopher who was taken to see the temple of Neptune. Around the walls were the pictures of those who had made dangerous voyages in ships, like those of St. Paul, and naturally they were glad whenever they touched land again, and their votive offerings were hung in the temple of Neptune. The philosopher was asked to gaze on the pictures and acknowledge the goodness of the sea-god, the preserver of the givers. But he said, "Now show me the pictures of those who went to sea and did not come back?" So when wonderful cures are told, ask about those who were not cured.—*The Clinical Journal.*

**Danger to the Motorist in Weak Bridges.**—Among the formalities of transcontinental truck touring perhaps none is more edifying than the very necessary one of inspecting and reinforcing wayside bridges. The inadequacy of the modern highway to modern needs is something to be endured, but the inadequacy of the average county commissioner's ideas with regard to bridge construction is more serious. Rotten wooden bridges are a menace that lies in wait for every motorist traveling an unknown way, but it required the advent of the truck to make their ridiculous antiquity perfectly apparent.—*Automobile Topics.*

**Royal Dentists**—The need for some wholesome relaxation is felt by high and low alike; and even kings have not disdained to occupy their leisure hours in working with their hands like the meanest of their subjects. Louis XV, one of the idlest of men, strove to dissipate his continual boredom by means of a private printing press set up for him in his apartments at Versailles by Quesnay, Madame de Pompadour's favorite doctor; and Louis XVI, his grandson and successor, became in course of time a skilful locksmith. Neither of these monarchs, however, was as versatile in his amusements as the ill-fated hero of Flodden, King James IV of Scotland, who was not only an amateur carpenter and blacksmith, but a dentist to boot. The accounts of his private expenditure, extracts from which are given in Miss Green's "Lives of the Princesses of England," prove that although he indulged his eccentric tastes at the expense of those who surrounded him, James knew how to console his victims for the sufferings they endured at his hands. That the royal dentist's involuntary patients were well paid for their complaisance is shown by the following extract, quoted by Miss Green, though one wonders why the unfortunate Kynnard was less generously treated than the anonymous "fellow" who preceded him:

| | £ | s. | d. |
|---|---|---|---|
| Paid for a psalter, three compasses, a hammer, a turcase to take out teeth, and two pair of beads, to the King..... | 0 | 7 | 8 |
| *Item*, to ane fellow because the King pullit furht his tooth..... | 0 | 14 | 0 |
| *Item*, to Kynnard, the barber, for twa teith drawin furht of his hed be the King..... | 0 | 14 | 0 |

This recalls Major Drury's amusing story of the savage potentate who, like the Scottish king, was afflicted with "a mania for experimental surgery," and cheerfully sacrificed the teeth of his unhappy courtiers.—*British Medical Journal,* February 8, 1913.

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## Original Articles.

### THE SCOPE OF DISEASE.

By R. G. ECCLES, M.D.,

BROOKLYN, NEW YORK.

We are beginning to learn that the scope of human maladies is but a narrow fringe along the borderline of a vast empire of disease. We are, likewise, discovering that if we really wish to solve properly some of our most important problems of medical and sanitary science we must extend our knowledge far into the unexplored regions of this empire. This needed extension is greatly hindered by a number of inherited theories that are founded upon the over-narrow range of the facts known in pre-scientific times. The confident acceptance of these theories as an adequate expression of truth extinguishes all desire for greater enlightenment, while the intensity of modern specialization helps to hinder the widening of each individual's range of mental vision. Thus these theories are perpetuated and progress is retarded. This unsatisfactory state of affairs is likely to continue until a larger number of educated laymen and physicians come to know more of the principles being discovered in departments of study cognate to their own. Most of us know too little of what is being done in zoopathology, phytopathology, protozoology, entomology, bacteriology, and biochemistry. A technical knowledge of all of these, by any one individual, is impossible. Sufficient knowledge so as to know where and how they touch our own field of work is both possible and desirable. If more of this kind of information appeared in medical literature, so as to show physicians the real relative dimensions of their own territory, it would help to correct this evil. Like an Andorean the average medical man almost comes to feel that his mountain fastness of tranquil isolation is all that is worth knowing in pathogenic science. As long as he is unable to realize that the scope of medical science outside of his small sphere is vastly greater than it is within, he is not likely to feel much tender sympathy for, nor willing to offer much assistance, to the scientific pioneers who are exploring what to him is a dark *terra incognita*. He has yet to learn that there are problems of supreme importance that are common to plant as well as to human diseases and that can only be mastered by a study of both. The symbiosis of parasites, their co-hosts, and bridging-hosts, their dependence and interdependence upon one another, with all that these imply in relation to the origin and spread of epidemics, can be mastered only when we have a full biological comparative pathology and when our profession is willing to encourage such study with its plaudits. As well might we try to study the conditions of a deluge, when knowing nothing of the great streams and mountain torrents that lie above us on the watershed, as to try to determine the origin of new diseases and of vast, new pandemics before knowing anything about such relationships. If we long for a solution of the problems of parasitic virulence and of cell-resistance to such virulence we should come in touch with those who are seeking, like ourselves, these principles as displayed in plant and animal pathology. If we take no interest in their work how can we hope to have them take much interest in ours. If we desire to know exactly how much reliance we should place on plant and animal experiments, when applied to the solution of human disease-problems, we must learn the bearings of the law of continuity upon such problems. If this great law is as dominant over the problems of disease as it has been found to be over those of every successfully developed inductive science until we have mentally compassed a clear understanding of the real scope of disease, we must remain blind to its bearings and lost to its mnemonic value. If, as evolution clearly implies, the protein molecules of our tissues are, phylogenetically, related to each other, through the law of continuity, as morphological structures are known to be, then biochemistry ought to be able to reveal this sort of continuity in the digestion-resisting surface-coverings of men and beasts, birds and fishes, insects and crustaceans, trees and shrubs, herbs and grasses. Until medical men show more interest in this subject than they do to-day biochemists are bound to neglect it in spite of the fact that such a line of study, from our viewpoint, gives promise of being able to supply us with the exact meaning of inborn immunity and constitutional superiority. No interest, however, can be aroused in this until there is first an interest established in the broad and deep aspects of parasitism. We cannot become interested in problems that to us are non-existent. There are many more fundamental problems of pathology, the solution of which cannot be reached until the medical profession takes more interest in the broader aspects of infection. Some of our most cherished beliefs may yet have to give way before the advance of the newer knowledge simply because they are deductions from data collected from a too narrow field or they are inferences from our ancient heritage of faith. Our slowness in keeping pace with the progress of cognate science is attracting far more attention among educated laymen than most of us are aware of. It is not long since the following statement appeared in no less a journal than *Science*, and by no less a person than a leading paleontologist of the State of New York, whose name is starred in the directory of American Men of Science. He said: "In the average American community there is among practitioners of medicine and surgery an indifference to or failure to grasp the purport of pure biologic research, so complete and dense as to be appalling,

the more as it lies in a quarter where one might most reasonably hope for support and sympathetic concern. Compared with the intelligent manufacturer, the wholesale merchant, the banker, the stock broker, the modern farmer, the average physician or surgeon carries toward the ideals of our science and of geologic science as well so far as the results involved are not strictly commercial, an air of indifference that partakes of the supercilious."[1] Think of such a statement being sent into the homes of the best educated families of our nation. Think of its remaining unchallenged and uncontradicted—and why? Think of the effect it must have had in undermining the faith which intelligent laymen have in our profession. When first read by the writer of this paper it produced a feeling akin to heart-sickness. Why do we not at once awaken to a consciousness of so unpleasant a situation? Why should not our medical journals devote some space to the presenting of subjects for thought that will encourage a wider study of the newer biology than that which at present obtains? The old, old story of the histories of clinical cases and of pathological specimens, with not a suggestion of living science, is becoming very monotonous to those familiar with better things. It is constantly being repeated, from generation to generation, with little or no variation, yet associated with some sort of vague idea that this sort of thing constitutes science. Case is piled on case, mountains high, with never a protest against its being so greatly overdone. In and around, through and through, every such case and every such specimen run the silken threads of deeply significant principles which careful study could discover and bind into an integral whole. Why do those who present such cases and specimens fail to see these radiating and anastomosing principles? Why do they refuse to breathe into them the breath of living truth? Each such specimen may be but a fragment from a corpse, but there is in this no valid reason for transfixing their facts into excellent specimens of literary mummies. Yet this is about what many of the members of our profession have been doing, and are likely to continue doing indefinitely, unless they awaken to a realization of the elementary biological truth that the scope of human pathology is but a fraction of animal pathology, to say nothing of the still greater mass of plant pathology. No theoretical attempt at explanation which fails to include the latter can properly explain the former. Only those who have made excursions into the wider fields have been able to add anything worth recording to our steps of substantial progress.

We have been hearing a great deal lately about disease "carriers," and we are quite likely to hear very much more concerning them in the no distant future. To learn that apparently healthy people can go around breeding and scattering diseases among others, while at the same time such diseases have no evident ill effects upon themselves, is a strange yet serious state of affairs. It was from zoopathology that our first knowledge of this remarkable phenomenon came. Several years later it was proven to be a common law of disease among plants as well as among animals and human beings. This standing evidence of what Goethe called "the linked purpose of the whole" can scarcely be looked upon as a benevolent "purpose," from the ordinary viewpoint that disease is an evil, unqualifiedly. It is evidence of a sameness which runs through and through disease wherever found. Theobald Smith first recognized the living "carrier" in those cattle from our Southern States that convey the *Pirosoma bigeminum* across Mason and Dixon's line. Dr. D. E. Salmon gave us the following graphic description of how this germ of Texas fever, through the aid of a tick, does its work. He says: "The cattle which spread the disease are, themselves, apparently in good health, while the cattle that become sick do not themselves disseminate the contagion. Again, susceptible cattle might be mingled with impunity with cattle from the infected district, providing this mingling occurred immediately after their arrival, and did not continue longer than two or three weeks; while, on the other hand, susceptible cattle that later in the season trespassed for even a few minutes on the pastures where the infectious cattle had been would contract a most violent form of the malady. * * * Texas fever is caused by a microscopic parasite, which lives within the red globules of the blood. The cattle in the infected district carry this parasite permanently, and are so nearly immune to its effects that they remain in good health, nothwithstanding its presence in their blood. Not so, however, with cattle which never before have encountered it. With such animals it destroys the red corpuscles and reduces them to one-third or one-fourth the normal number. An intense fever is produced, and the creatures rapidly waste away and die after a sickness of one or two weeks."[2] The East Coast fever of Africa duplicates in most particulars Texas fever. The African disease is caused by *Piroplasma parvum* (Theiler), a very closely related parasite, which likewise lives in the interior of the red blood cells of its host. The cattle of the East Coast are immune to its attacks but are the "carriers" of the disease germs. Nonimmune cattle, that are unfortunate enough to be driven through the East Coast region, are certain to be attacked, and a leading authority has asserted that only about five out of one hundred of those animals that catch the disease survive. In one epidemic, due to infected animals being taken to the Transvaal, 15,000 cattle died. In trypanosomiasis we have another repetition of this same condition. The authority just referred to tells us that notwithstanding the fact that there may be no sick animals in the fly country of Africa, "no horses, cattle, nor dogs can venture, even for a day, into the so-called 'fly country.'" Stating his experience he says: "There were no sick horses or cattle in the 'fly country.' Investigation brought to light the curious fact that most of the wild animals—the buffalo, the koodoo, the wildebeeste—carried the trypanosomes in small numbers in their blood, and it was from them that the fly obtained the parasite. The wild animals act as a reservoir of the disease. The trypanosome seems to live in the blood of the wild animals without doing them any harm, just as the rat trypanosome lives in the blood of healthy rats; but when introduced into the blood of such domestic animals as the horse, the dog, or the ox it gives rise to a rapidly fatal disease."[3]

The almost complete destruction of the wine industry of France by the introduction of downy mildew and phylloxera, chronic parasites of our wild American grapes, is another vivid example of what the disease "carriers" can accomplish even in the plant world. Our inability to grow European gooseberries in this country, much as

those of us who know the size, flavor, and sweetness of such berries regret the matter, is due to the fact that the gooseberry mildew of our native wild gooseberries makes such growth almost impossible in this country. Recently some wild American plants were carried over to Europe and the mildew from these has been so destructive that growers are in great fear of the results. They are endeavoring to exterminate the disease by killing off every infected gooseberry plant that can be discovered. Add to these the hollyhock rust from Chili, that threatens the extermination of European and American hollyhocks; the coffee fungus *(Hemileia vastatrix)* that has actually destroyed the coffee industry of Ceylon, and is now threatening the coffee plantations of other countries; the blister blight of tea that has completely exterminated hundreds of acres of tea plants; the asparagus fungus *(Puccinia asparagi)* that has ruined many acres of asparagus in California, New Jersey, Delaware, and Long Island; and the chestnut fungus *(Diaporthe parasitica)* that is now browning our forests with the dead trunks of chestnut trees;[4] and we have a formidable list of disease destruction that is probably all due to wild plant "carriers." Once started among cultivated plants of the same or related genera and the damage done reaches into many millions of dollars.

Almost every kind of crop grown on our farms is now regularly subject to immense annual loss because of diseases, the origin of which is at present untraceable, but due, probably, at first to wild plant parasites. "There is little doubt," says Professor Orton, "that the average annual loss from oat smut is more than $6,500,000; from loose smut of wheat, $3,000,000, and from bunt, or stinking smut of wheat, more than $11,000,000. Barley loose smut annually diminishes the value of barley more than $2,000,000, a careful estimate of the loss in one state last year placing it at 7 per cent. of the yield. * * *. The combined effect of the several leaf blights of the potato is to diminish the yields of this crop over $36,000,000 each year. The losses of the cereal rusts and from the numerous minor troubles of farm crops, concerning which accurate data are difficult to secure, amount to hundreds of millions of dollars."[5] Professor Massee, in discussing the same phase of the subject, tells us that: "It is well within the mark to state that the annual loss throughout the world, due to injury caused to cultivated plants by parasitic fungi, exceeds 150,000,000 pounds sterling ($750,000,000). Probably double this amount would be nearer the truth. * * *. According to the Prussian Statistics Bureau, the losses in Prussia during the year 1891 from grain rust attacking wheat, oats, and rye, amounted to 20,628,147 pounds sterling" ($103,140,735).[6] For the purpose of trying to arrest this tremendous financial loss experiment stations have been started in this and other countries. They aim at discovering the best way of exterminating these diseases. Direct attacks upon the germs have proven futile and every effort at cure has given sorry results. Within a few years a new method has been adopted. Professor Bolley of the North Dakota Experiment Station is one of its most active promoters. Instead of attempting to hinder the growth of the parasites he aids them as best he can and then leaves the results to the survival of the fittest in the intense struggle he has started. "We place the plants we wish to test," he says, "under all of the disease conditions of the soil, air, and water that we can help nature produce, then save the seeds from those plants for future trial under similar conditions year after year." He adds: "This is a new method in experimental work and has given astonishing results. * * *. We now know that we are on the right track to procure resistant and immune varieties."[7] Professor Orton, another plant pathologist, tells us that by imitating nature in this drastic way there have been produced "(*a*) wilt-resistant sea island cotton, (*b*) wilt-resistant upland cotton, (*c*) wilt-resistant cow peas, (*d*) wilt-resistant watermelons, (*e*) blight and scab-resistant potatoes, (*f*) anthracnose resistant clover, (*g*) leaf blight-resistant cantaloupe, (*h*) rust-resistant wheat, and (*i*) wilt-resistant flax."[8] This is certainly a most excellent showing for the few years during which the method has been on trial. It looks as if we are destined to soon secure, by this method, sufficiently hardy crops to practically be able to defy the majority of well-known plant diseases. The killing off of the unfit leaves only the resisting fit to propagate their kind. The susceptible disappear from the earth. This is why it happens, as stated by Professor Minchin, that "when a race of hosts has long been associated with a race of parasites the hosts gradually acquire constitutional powers of resistance to the parasite, which the hosts do not possess when first brought into relations with the parasite." This is why he is further able to state that "a new parasite will generally be a dangerous one."[9] Gradually, but surely, the susceptible are eliminated and the non-susceptible take their places. The new parasite finds favorable soil on which to grow. The old one meets a resistant tissue that it cannot overcome. Thus it happens "that an infection gradually loses its gravity in the course of centuries, or acquires an unusual malignancy when invading a population until then spared," as says Roger. He then adds: "Nothing is more interesting or instructive in this connection than the epidemics of measles of the Faroe Islands. The disease was imported there in 1846. Of the 7,782 inhabitants, 6,000 were attacked, only the old being spared. In 1875 the same disease invaded the Fiji Islands and caused the death of 40,000 persons out of a population of 150,000."[10] The spread of smallpox among susceptible races tells the same tale. "When taken to the West Indies, in 1507," says Dr. G. Archdall Reid, "whole tribes were exterminated. A few years later it quite depopulated Santo Domingo. In Mexico it destroyed three and a half millions of people. Prescott describes this first great epidemic as 'sweeping over the land like fire over the prairies, smiting down prince and peasant, and leaving its path strewn with the dead bodies of the natives, who perished in heaps like cattle striken with murrain.'"[11] This prairie fire illustration is apt. Europe and America have seen the same law made manifest in pandemics of plague, cholera, and influenza. Gradually they died out as susceptible victims became less numerous, but only to reappear again when acquired immunity ceased to protect those that were saved by its power. Like the new growth of grass on the prairie these supplied new fuel for the fire. After successive reappearances, few but the resisting fit were left and in this way a balanced state of neutrality became established. Where the parasites invade territory in which environmental conditions of temperature and moisture

interfere with their multiplication, they die out before such a survival of fit hosts has become complete. In their original homes they continue being multiplied by carriers and as circumstances permit they spread forth again to renew their mischief. When the balanced state is complete the host is rarely injured greatly by them, unless vitality is lowered or cuts and bruises permit them to reach imperfectly protected cells. This law of adaptiveness, of parasite and host toward each other, leads to the conclusion that the parasites of our acute diseases are such as can still find among us tissue food for which they have to fight. The work of selection is incomplete, notwithstanding the fact that it may have been going on for hundreds or thousands of years. Travelers, commercial men, crusaders, and missionaries of various kinds, have, doubtlessly, been the original carriers that brought them into civilized countries from many native races. What new type they may introduce in future no man can tell. "With growing intercourse," says Theobald Smith, "each original center of population, immunized through centuries and perhaps thousands of years to its own few diseases, would be brought in contact with some fatal plant of another portion of the globe and be partly swept away by it."[12] Only races which have endured the ordeal of an infective disease can ever hope to escape its malignancy on introduction to them. Isolation from it is but a preparation for its most serious manifestation when it does appear. This seems to be the reason why savage races suffer so much worse than we do from the various infections. "The deplorable condition of savages," says the Editor of American Medicine, "must be remembered when we are inclined to wail over our woes. The old idea that primitive man living next to nature was healthy and strong is false. He is now known to be 'a nest of parasites within and without.'"[13] Their resisting power, toward the bulk of our infections, is not at all comparable with ours. While civilized races are rapidly increasing in numbers all over the earth, savage and barbarous nations are as rapidly disappearing before the scourge of disease. Our race resistance grows as each new scourage appears, and our ever-increasing fitness has enabled us to defy all of the relatively new diseases which are at present known. With the parasites of chronic diseases the case seems different.

Every animal and every plant under the sun appears to be compelled to sustain its full share of these balanced scourges. To turn to the right or to the left of any of the conditions which hold them in check is to invoke suffering and often death. Like the sword of Damocles, they ever threaten, and less than the thickness of a hair lies between the best of us and their malignancy. We act as constant "carriers" of these potential enemies. The surfaces of our skins swarm with them. Our intestinal tracks are literally loaded with them. The air we breathe carries them. At any moment a cut, an abrasion, a chill, an indiscretion of any one of many kinds, will sever the thread that holds back death. The discovery of their horrible slaughter, in the past period of human ignorance, brought honor and praise to Ambrose Paré, to Semelweiss, to Oliver Wendell Holmes, and to Lord Lister. Prof. Robert T. Morris has told us that the colon bacillus group—one of the balanced groups to which reference has here been made—is among the most active malefactors of all bacteria in its relation to the sufferings of man. No human intestine is free from them and it is not at all unlikely that almost every terrestrial vertebrate contains them in some of their strains. Dr. Morris has pointed out how malignant they can become in many surgical diseases. The numerous cases of infection of the appendix, of the pylorus, of the duodenum, of the bladder, of the urethra, of the vagina, etc., attest what they may become. He states that "the colon bacillus ranks along with the tubercle bacillus as an agent for preventing overpopulation and regulating the character of population by means of poison," and, he adds, "that this might have been given special attention by Darwin and Malthus had they been in possession of our present data."[14] It is not improbable that the Gaertner and typhoid subgroups of the larger colon bacillus group may be swaps that have been made in the no remote past, thus establishing a higher degree of virulence corresponding to their newness to us. Our streptococci and staphylococci appear to have been man's steady companions for ages. The parasites of pneumonia, meningitis, rheumatism, and gonorrhea are close kin to the streptococci. The diplococcus of gonorrhea cannot live in any other animal than man. Inasmuch as it dies speedily in every other animal than man it must have originated as a species within man. Its known relationship to the diplococci of meningitis, rheumatism, and pneumonia indicates great antiquity, for all of these, within man. As eliminators of excessive population they can all be safely placed along with Dr. Morris' colon group. As destroyers of ova and spermatoza they take the lead. Inasmuch as the destruction of a single ovum, or of a single spermatozan, can advance natural selection as far as the destruction of a single individual, these are millions of times more efficient as selectors than diseases that occur before puberty or in senility. Here we get a hint of the, so far, lost sight of fact that chronic diseases may be immensely more efficient agents of natural selection than acute ones. In the early history of geology the catastrophists were in the lead, but sober second thought left them very much in the rear when evolutionists appeared. It can, the author believes, be safely predicted that the biological catastrophists are going to meet a somewhat similar fate. That there is individual selection is undeniable, but that this method of selection is the chief one can hardly much longer be generally accepted. Soma selection can occur only through germ plasm selection and, hence, anything that strikes directly at the germ plasm as a selector must, necessarily, far exceed in its power that which acts by destruction of individuals. Chronic parasites are the ones that must be looked to as the most efficient agents of natural selection, and in every species, every genus, every order, every phylum, every kingdom of biological nature so far studied, the "old," balanced parasites are found as constant companions, we see that the best possible conditions for germ plasm selection exist everywhere. The consensus of the competent, in every department of biology, fortifies this view, each for his own department.

The presence of disease producing parasites in every nook and corner of living nature is seldom appreciated as it should be. Let us see what a few leading thinkers who have acquired a knowledge of this have to say about it. Huxley tells us that "insects are wonderfully liable to the ravages

of contagious and infectious diseases."[15] Hektoen says that "disease is the common lot of all forms of life—high as well as low, animal as well as vegetable."[16] Loeb tells us that "most higher animals, at least, die by bacterial infection."[17] Metchnikoff asserts that "diseases in general and infective diseases in particular were developed on the earth at a very remote epoch. Far from being peculiar to man, animals, and the higher plants, they attack inferior forms and are widely distributed among unicellular organisms, infusoria, and algæ."[18] J. B. Smith tells us that "parasitism is universal throughout the insect world, modified in many ways. Nothing is exempt, neither the lowest insects nor the highest vertebrates."[19] Minchin declares that "there is perhaps no species of annelid, mollusc, arthropod, or vertebrate which is not liable to become the host of some kind of sporozoan parasite."[20] Calkins states that "it is not too sweeping a generalization to state that every living thing, large enough to contain another living thing, is subject to invasion by parasites. The protozoa, themselves single cells, often play the part of host to smaller protozoan cells, and parasites often infect even the nucleus of ameba, paramecium, vorticella, and other types."[21] Professor Farlow assures us that "the reason for supposing that the species of fungi are more numerous than those of Phænogams (flowering plants) is founded on the fact that in countries whose fungal flora has been most thoroughly studied we find few species of Phænogams which are not already known to be attacked by some special parasite, while the majority of species serve as hosts for a considerable number of species of fungi."[22] Inasmuch as the Phænogams constitute the part of the vegetable world best known to nonbotanists, and looked upon by them as almost the whole vegetable world, and inasmuch as most of these that had been studied contained many parasites to each single kind of plant, it certainly appears as if the plant world had to carry its share of such pests. Calkins, in another place than that already quoted from him, says that "from the wide distribution of the intercellular parasites it is quite possible that no animal is entirely free from protozoa of some kind."[23] As a wide reader of evolutionary literature, Lord Chief Justice Fletcher-Moulton has concluded that "Life is one ceaseless war against these enemies, and the periods of our too transient successes are known as health. This condition of constant and deadly strife not only obtains during our own short lives, bust must have equally obtained throughout the long line of development of which we are the result."[24] Prof. F. L. Stevens, as a phytopathologist, tells us that "Countless diseases of wild plants also are now known."[25] The interested reader who wishes to learn the particulars about the multitudes of diseases which attack cultivated plants will find in Massee's text-books of Fungi and of Plant Diseases, in Duggar's Fungous Diseases of Plants, and Orton's list in the Year-Book of the Department of Agriculture for 1906, some very interesting reading upon the subject. Thomson and Geddes, two well-known British naturalists, give us the following clear and impressive word picture of the condition of abject parasitism as it exists, particularly in the ocean. "Fishes may even swarm externally with trematodes and parasitic crustaceans, internally with cysts and intestinal worms without number. A vivid impression of the prevalence of parasitism is afforded by the capture, not infrequent at a channel zoological station or by fisher folk anywhere, of the huge and majestic sunfish, *Orthoagoricus mola;* and by picking off with forceps into museum bottles his crowds of uninvited passengers—the tuft of barnacles upon his back, the biting isipods like enormous fleas upon his skin, the trematodes sucking like leeches upon his eyes; and within to find not only his alimentary canal crammed with worms more than with food, and his liver changed from its natural brown almost into the likeness of a tangle of white worsted, of which each thread is a tape worm. Neither frog nor lizard, serpent nor bird escapes; indeed birds are peculiar sufferers, witness the too common 'gapes' of poultry, a choking of the windpipe by thread worms, and the numerous parasitic worms which Mr. Shiply's labors have discovered in the well-nigh sacred grouse. Of ticks the shepherd is only beginning to know the full dangers, as of fleas upon man himself. Apart from bacterial and protozoan pests, as yet beyond counting, man is debited by the parasitologist with at least sixty species."[26] But man does not, by any means, seem to be alone in having many kinds. Among trees "Cuboni and Mancini enumerate sixty-five species of fungi which occur on the chestnut, and over three hundred species on quercus." We have already mentioned how *Diaporthe parasitica* is fast killing our chestnut trees, and late investigators have been adding new kinds to the credit of the oaks. Pirotti lists one hundred and four species as feeding at the expense of grape vines.[27] In Professor Clark's "Beginnings of Dependent Life," we are told that "Nature is permeated with such degeneration. Few, probably no, members of the whole vast fauna and flora of the earth are free of the bond of supporting others at the cost of their own effort and vitality. From the protozoa and bacteria to man and the oak every greater or less division of nature is riddled with these dependent organisms. * * *. Were we to begin an investigation of the degenerate condition pervading nature * * * there would be but one conclusion of our excursion; it was clearly stated long ago—the whole creation groaneth and travaileth."[28] It is impossible to attempt a general study of parasitology without soon discovering that this statement of Clark's is but an expression of one of the most important truths, from our present viewpoint, which the science of biology has ever revealed. Another writer, Dr. H. Byrd, has, in Bulletin 3 of the Florida Board of Health, expressed this same idea in these words: "More than one-half of all the animal creation are parasites. Almost every animal is a pauper home for parasites—a dive wherein other species of animals feast and hold their ghastly orgies. Nor is this true of the higher animals alone, but it is equally true for high and low. The human species having more than half a hundred parasites can sympathize with the *Paramecium* which although so small it can only be seen with a microscope, is infested with a smaller parasite, the *Sphærophyra.* And more than this, parasites themselves have parasites."[29]

That parasites parasitize each other has been long known. When Leeuwenhoek, early in the eighteenth century, called attention to his discovery that exceedingly minute as are the pupæ of fleas they had still smaller parasites upon them. Jonathan Swift[30] got hold of this report and, in his satirical way, wrote:

"The vermin only tease and pinch
Their foes superior by an inch.
So naturalists observe, a flea
Has smaller fleas that on him prey,
And these have smaller still to bite 'em
And so proceed *ad infinitum:*
Thus every poet in his kind
Is bit by him that comes behind."

This parasitism of parasites is quite common in nature. As an instance, we find that the most common parasites of the plant world—the fungi—have other fungi ever ready to parasitize them. Concerning this Professor Massee states that "Fungi are by no means immune against the attacks of parasites which consist of other species of fungi. This is true of all the families. In the phycomycetes the species of Mucor are especially victimized." [31]

Our cotton crops at present are being greatly damaged by an insect parasite—the boll weevil—which reached this country from Mexico some years ago. It has been estimated that it now causes a loss of over twenty millions of dollars per year to the cotton raisers of the South.[32] For the purpose of trying to lessen this loss our government has put expert entomologists upon the problem of boll weevil control or extermination. The plan being tried is that of finding parasites that will cripple or destroy the boll weevils. One expert, W. Dwight Pierce, has found that some fifty-one species of weevils, now living as parasites on Southern plants, carry other smaller parasites upon themselves.[33] These can be transferred to the boll weevil and they, being new to it, produce an infection that is severe. In Mexico, the original home of the boll weevil, a species of cotton known as "culluche" grows, which has a unique way of circumventing this insect. When this plant was first seen by Collins and Doyle, "weevils were present in large numbers but were doing comparatively little damage. The bolls are protected by proliferation much more completely than in any cotton thus far studied. Hardly a single boll could be found which had not been punctured, but in all the bolls opened we could not find a single live larva. In fact, the proliferation was so complete that the bolls were hardly deformed, although as many as seven or eight eggs had been laid in a single boll. Proliferating tissue had been formed to such an extent that it was forced out through the opening and dried as a coiled mass on the outside of the boll."[34] Unfortunately "culluche" cotton is so inferior in quality that it is of practically no commercial value. It seems, however, as if some one might try Burbank's method of cross-fertilizing upon it. There would seem to be in it a promise of the production of a hybrid having boll weevil resisting qualities combined with good cotton quality. The "culluche" power of regenerating boll tissue, being hereditary, indicates that this, as an adaptation, may be as old as the species. As other species of Mexican cotton have adopted still other though less efficient methods of checking the boll weevil menace these are confirmatory of the suggestion. This raises the question of the possible antiquity of parasitism. These species changes could hardly be a thing of yesterday. Even if they came as mutants it must have taken a long time to exterminate the susceptible strains and leave the unsusceptible masters of the country. How far the boll weevils have changed in the direction of becoming new species has not been investigated.

Parasites change more slowly than do their hosts. One mycologist, E. S. Salmon, has made such an investigation in regard to *Erysiphe graminis*.[35] This parasite grows upon grasses of the genus Bromus. He has proven that it contains many different strains that grow only on different species, each on its own species host. On six different species of Bromus, which for convenience we will designate as A, B, C, D, E, and F, he found six different strains of Erysiphe, which we will call *a, b, c, d, e,* and *f*. He found that *a* would grow on A and on F but on none of the rest. He found that *b* would grow on B and F but on no other of the lot. On continuing his experiments he discovered that *c, d,* and *e* behaved similarly to *a* and *b,* in that they would grow on their own hosts and on F but on none of the others. The "soil" of F was favorable to all, but the "soils" of A, B, C, D, and E were all antagonistic to each other's parasites. When, however, the parasite *a* was grown for several generations on F, Salmon found that it could then, with a little coaxing, be caused to grow upon B, C, D, and E. The same was later found to be equally true of *b, c, d,* and *e*. After growth on F they were cross-transferable to the other hosts. Because of this F came to be called a "bridging host." The host F was, evidently, intermediate in its posionousness to the parasites of the other hosts. These others varied away from F as five main branches of a tree would bend away from its central trunk. As all of the six species belong to the same genus (Bromus) they are, phylogenetically, branches of a common evolution trunk. This conceded and it is evident that parasites and hosts have varied *pari passu*. In obedience to the common rule the parasites varied least. With increase in the alien character of the grasses toward each other's parasites, they gradually must have ceased acting as cohosts until, finally, only F retained this power. The spores of the parasites being wind sown every one of these hosts stood a fair chance of serving as a cohost but refused to do so. Each parasite perished on all except its own host. When all of the six hosts began to deviate from each other their proteins had no destructive action on any of the six parasites. Then their tissue structure was chemotactic for the parasites. Naturally the parasites throve at the expense of the hosts and threatened their extermination. Each varied in its own way, but only those that varied in a manner destructive to enough of the parasites to save themselves from destruction were able to survive and perpetuate their kinds. Each host's type of poisonousness left unkilled such type of parasite as was best able to resist that form of poisonousness. As the change in each instance obeyed the law of chance each of the six hosts saved a different strain of parasite for itself. These settled down into a balanced neutrality that caused only chronic disease following weakness or injury. The proteins of the hosts ceased being immediately poisonous to their parasites because of this balance. The poisoning became anaphylactic, only killing when too rapidly digested and, therefore, too dangerous to the host. Here we see the probable genesis of anaphylaxis. In no instance does anaphylactic poisoning occur where there is not alien protein, and in no instance does it occur with alien protein until intercellular digestion is immediate and excessive. Every alien protein has arisen,

phylogenetically, from some nonalien common progenitor. Go back far enough and organisms that now produce proteins that are alien to each other produced proteins that were identical. The only persistent, causative agent known to us that could, by natural selection, produce anaphylaxis is parasitism. No other can be thought of that has selective value. In a former article in the MEDICAL RECORD the writer has shown that protozoan parasites have exactly the same kind of branching, paralleling the branchings of the higher animals, and extending from the lowest up to man,[36] as that seen in the relations of Erysiphe and Bromus. The parasites match every branch with a corresponding branch of their own, clearly indicating the probability of both having evolved together. Since anaphylaxis follows these very branchings it seems fair to infer that it has been caused by the selecting that followed the branchings. That selecting could only be due to parasites. Another phenomenon of parasitism that seems to confirm this view is that known to mycologists as heterœcism.

In the great Natural Order of Fungi, called the Uredineæ, over 2,000 species have been described and every individual of every one of these species is so absolutly dependent on parasitism as to perish in every place except on the few select hosts each parasite lives upon. The winds waft their countless millions of spores in every direction, but only those live that fall on their specific hosts. Among these species 150 have been found that live two quite unlike lives, each on a host of its own.[37] The two hosts belong to very unlike kinds of plants and they cannot be substituted for each other. The two forms of the same parasite require each its own specific host and cannot live if crossed upon its own hosts. So unlike are the two forms of the same parasite that mycologists long believed them to be entirely different kinds of plants. They develop alternately into each other from spores, much as if cabbage seed should grow into turnips and turnip seeds back into cabbages again, repeating the cycle indefinitely. For a plant to thus split its hereditary qualities into two or more parts constitutes heterœcism.[38] Massee thus describes the changes of *Puccinia graminis,* one of the fungi here referred to. "The aecidospores will not directly infect a barberry plant, but when placed on a leaf of a suitable grass infection takes place, and in due course pustules of uredospores appear on the surface of the grass leaf. Uredospores, on the other hand, will only infect grasses, and the production of uredospores and infection of new grasses continues throughout the summer. During the autumn, when the host plant is on the wane, the mycelium, that up to the present had been producing uredospores, now commences to produce teleutospores. * * *. The production of teleutospores completes the cycle of development of the fungus. The following spring the teleutospores germinate, infection of the barberry follows, and the cycle of development commences anew."[39] Let the reader remember that the proteins of barberry and grass are thoroughly alien toward each other if they obey the usual law. That they do obey this law is made probable in that the fungi that will grow on one cannot grow on the other. If the runners (stolons) of a strawberry plant acquired the habit of growing on a different kind of soil from that which would grow the seeds of the strawberry we would have a first step toward a condition akin to heterœcism. If the seeds from such stolons required the original soil on which to grow, a second step would be taken. By successive steps such as these we can imagine a possible origin of heterœcism. But it must begin on soil that is the same and that slowly changes in its poisonousness. No mutations jump into existence with such perfection in adaptations to totally unlike conditions. If at some time in the past barberry and the host grass on which a given species of *Puccinia* grows were evolved from plants of the same species, we can see a possible origin of this dual nature. But this means that heterœcism is as old as the barberry and grasses and that it evolved at the time they separated from each other.[40] Propinquity of barberry and grass might, as a doubtful possibility, under conditions of lowered vitality in the newest of the two hosts, favor parasitization, but for the production of heterœcism such an explanation seems wholly inadequate. For the production of such a phenomenon the most perfect adaptiveness of the parasite to both hosts appears to be a necessary prerequisite condition of its establishment. Unless the ability to cross from one host to the other was perfect from the beginning the conditions favorable for the transformation of the parasite into its two forms would be absent. Another and apparently much more ancient illustration of heterœcism is seen in various species of the genus *Gymnosporangium* that have as hosts different species of the rose family on one side and of junipers on the other.[41] In both *Puccini* and these the alternation of generation resembles in several respects the case of *Plasmodium malariæ* and its two hosts, man and mosquito. All of them involve the problems of genesis and antiquity. In the *Plasmodium* we can trace the successive steps of the modifications of its sporozoan kindred, by which it evolved from a parasite of intestinal epithelial cells to a parasite of red blood cells, and from a parasite of wholly cold-blooded animals to one of alternation between cold and warm-blooded animals. In the mosquito it is still an epithelial parasite as well as a cold-blooded one.[42] The transition picture is quite like that of plant heterœcism. In both one of the hosts is very much higher in the scale of evolution than the other. No hypothesis can cover the facts that excludes great antiquity or divergence in evolution of the two hosts. Evolutionists must concede divergence in descent or stultify themselves, and paleontology fully confirms the claim of parasitic antiquity. Many fossil plants of a far greater antiquity have been found in which fungi can be seen as parasites piercing the tissues of their fossil hosts. Meschnikelli has drawn and described over 400 species of very ancient fossil fungi. Massee tells us that "numerous Ascomycetes, Pyrenomycetes, and Dyscomycetes occur on (fossil) leaves, and in the tissues and stems of many different (fossil) plants, in some instances so well preserved that the structure of the perithecia with their conidia or spores can be studied."[43] Evidence of this convincing character can hardly be seriously questioned. Parasitism, then, is older than our modern dominant flora and older than the higher vertebrates. How much older we can only conjecture.

On the assumption of the ubiquitousness of parasitism and its indefinitely great antiquity let the reader endeavor to picture to himself a few of the important implications which this implies. To perceive that a continuous menace of disease and death, due to disturbances of the universal balanced, armed neutrality of chronic parasites, has,

probably, for many millions of years, hung over all organisms, is to get a new illumination regarding the mechanism of natural selection. No other known agent could possibly have been in action so long. No other has stuck so persistently to the task of selecting for destruction unfit germ plasm. No other has become adjusted to this task with any approach to the delicacy with which this selecting agent can work. Parasitism acts directly upon the *molecular structure* of every cell. Parasites feed upon cell molecules so that the survival of cell molecules is the one all-important event in the life of every creature. It is for these that the hungry parasites fight with the cells. It is to these that both parasite and host are indebted for their existence. These facts constitute our evidence that the cell molecule holds the chief and all-important place in natural selection. The over-destruction of these molecules always means the extinction of the race of cells or organisms that possess them. Let the molecules change in ways that will increase their attractiveness for microbes and it needs no prophet to foresee the dire consequences that must follow. Let them lose their power of repulsion, and thus convert them into favoring food for parasitic multiplication and the organism that produces them is foredoomed. Let them become more repulsive or more poisonous and the chances of a destructive invasion of their parasites is instantly lessened. Molecules that have varied in this way are a shield of defense for their producers. Who can doubt that an organism which varied in a way to increase its attractive molecules would soon be swept from the earth? Who, conversely, can doubt that an organism that varied in a way to increase its parasite repulsing and parasite poisoning molecules would be the better able to survive invasion? Not to be thus fit spells speedy extinction. Every cell in every organism—germ cells not excepted—and every minute organ of every cell is built of molecules that are potential food supplies for microbes. The only evident reason why all cells in every one of the higher organisms are not swept out of existence is because their molecules (*a*) have varied in ways that poisoned parasites, (*b*) have become repellent to the parasites, (*c*) have produced antienzymes to arrest the digestive powers of the parasites, or (*d*) have taken refuge behind molecules possessing one or other of these qualities. The only evident reason why parasites have not been exterminated by the cells is because they have become adapted, one by one, to every, to them, injurious variation in their hosts and checkmated the hosts by similar variations of their own. As Massee says, "It is always well to remember that however much the host plant may succeed, aided or unaided, in guarding itself against its foe, fungi, on the other hand, have proved themselves equally capable of adaptation to existing circumstances."[44] During millions of years this shifting of fitness, first to one side and then to the other, has kept up one incessant round of changes in the molecules of both host and parasite, which selection has preserved. Every germ cell that failed to change its molecular panoply so as to hold back the destructive influences of invading parasites has perished, unrepresented. While most of the damage and destruction of germ cells seems, at present, to be accomplished by the cytotoxins acting through the general circulation, we have evidence, particularly among the lower vertebrates, of these cells being subject to direct attack. There are species of Coccidium that make their homes in testes, others in ovaries, and still others in the vas deferens. There are species of Glugea that select the gonads, while others limit themselves to the ova, and still others to the sperm cells. There are species of Zygocystis, of Monocystis, of Spermatophagus, and of Uraspora that confine themselves to the vesiculæ seminales. There are Legerella that prefer the testes, Rhabdospora and Pleistophora that choose the ovaries, and Myxosporidia that limit themselves to the ova.[45] These bring us down to the bed rock of the mechanism of natural selection. When a whole individual is selected because of his fitness we can gain no conception of how the fitness arose. Within a human being that is about to be selected under some new condition of his environment any new fitness that may arise must be fitly correlated with countless millions of prior fitnesses. If these correlations could arise through chance variations, why may we not ascribe wholly to chance, and independent of natural selection, the entire process? If the changes came as slowly gained molecular adjustments, through the selective action of parasites, the thing is understandable. Unless molecules are subject to natural selection cell organs and cells are produced wholly fortuitously. Unless molecules, then cell organs, then cells, then tissues, then organs, and finally organisms are each, by successive molecular selections adjusted to each other then every organism must be a product of pure fortuitousness. But, if any or all of these steps are wholly fortuitous then miracle rules, miracle produced mutants are a certainty, and natural selection a chimera. But, as even mutationists concede that natural selection controls the final destinies of their mutants, why deem mutation a miracle? In landslides, where water slowly undermines the supports of the land, we do not invoke miracle as an explanation. We look to gravity and the undermining water. Why, then, refuse to see the gradual undermining work of parasites among the organic molecules that has been going on for time so long as to baffle imagination. Mutants are exactly such phenomena as we might expect among gradually changing protein molecules, subject to the law of mass action. Out of molecules the whole body is built. By altering molecules any conceivable change may be produced. Mutations can only be due to variations among the molecules. That the molecules are, and ever have been, subject to selection, we have no reason for doubting. Parasites have never ceased their work of selecting them since competitive life first appeared upon our planet. Every selection made has been for cause. No molecule has been selected for extinction until it and its kind have jeopardized the existence of the organism. Every selected fit variation has been of molecules that have strengthened constitutional resistance to adverse climatic conditons, to fatigue, to excessive strain in the search of food or the subduing of foes, to hunger, to wounds and bruises, in fact to everything that established unfitness. Each of these favored the breaking of the armed neutrality of the parasites and caused attack. Whenever soma cells gave way before these parasites the germ proteins and carbohydrates of like kind had to give way and change or die. As soma cells always give way to every condition of change which demands readaptation germ protein and germ carbohydrate

had to give way at the same time. Thus it happens that during the phylogeny of every organism the very changes occur that are required to occur to produce new and adapted forms. The body responds by disease to unfavorable conditions and the parasites rid the germ cells of the unadapted molecules that made such disease possible. This incessant parasitic attack of the organism along the lines of its least resistance, and always where excessive strain appears, is, the writer believes, the unknown element in natural selection which Osborn and other evolutionists have insisted upon the existence of for so long. Professor Osborn says: "I came to the conclusion in 1895 that we must appeal to the existence of some unknown factor or factors of evolution. Subsequent research has convinced me that in these phenomena of the internal origin first of certain determinate characters, we are dealing with the unknown if not the unknowable, although the latter despairing attitude should not be hastily adopted."[46] The selection by microparasites is the only selection that is known to select, step by step, every part of every organism with incessant fidelity through countless generations. By selecting molecules they select cell organs, cells, tissues, organism organs, and the entire organism whether plant or animal. The selecting has been done bit by bit and so presents to the mind the problem of natural selection free from the terrible ambiguity attached to the same problem where whole organisms only are considered. It provides for perfect correlation of all the parts from the inconceivably minute molecules upward. Such selection most probably began at the very birth of living matter and has never ceased its operations from that day to this. Any part of any organism, great or small, that showed a weakness under any new condition of its environment, became the immediate point of attack by disease, and had either to vary in conformity with the new demand of that environment or the organism had to submit to extinction. Under great stress the selection was of individuals. Under less severe stress the attacked organism did not have to die to bring favorable selection, as such conditions kill and maim germ cells, thus making the selection through them. Germ cells, in common with soma cells, are built of hydrolysable molecules. There is absolutely no difference in the chemical principle involved in their dissolution and in the dissolution of the soma cells. The reversibility of enzyme action indicates that any organism that can construct germ plasm ought to be able to destory it by reverse action. Differences in molecules are due to differences in detail, but in all the molecules of living matter the hydroxyl and hydrogen ions of water cement them together out of varying numbers of the same kinds of amino acids. Germ cells are destroyed under infection. They are also injured under it. Why should there not be degrees of such injury and degrees of fitness in resisting the poisoning and digesting powers of parasites? The germ cells contain proteins, fats, and carbohydrates that the parasites digest and use as food. It is these they are after, and it is a question whether or not they have any great choice as to where they can get them. Those molecules that, to a given parasite, are most easily digested will be the first to suffer and all cells of the body in varying degree. To the various species of Spermatophagus the spermatozoa of their hosts is the most desirable morsel, because it is the part to which their digestive enzymes have become adjusted. Whether the struggle between the parasites and the germ cells is direct or indirect the selection occurs in response to lack of resistance in that germ cell which is damaged. Its lack of resistance is toward the enzymes and toxins that are being used by the parasite against soma cells having the same weakness. The surviving germ cells are those with the minimum number of molecules hydrolysable in the way that the diseased part of the body is being hydrolysed or injured by the toxins that injure the soma cells. That the morphological changes have comported with the chemical changes in the surviving molecules is a reasonable inference from what we know of the relations of crystalline forms and other qualities to chemical structure.

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## ULCEROMEMBRANOUS ANGINA (VINCENT'S) AND ITS TREATMENT; WITH REPORT OF CASES.*

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No disorder is more readily demonstrated, more frequently overlooked, or if noticed, oftener neglected in the scheme of therapeutics than mouth infections. No practical physician can deny the influence of this condition in the production of forms of arthritis, in endocarditis, in inflammation of the pharynx, in chronic excessive intestinal putrefaction, in toxic anemias, in some obscure, mild, long-continued fevers, in toxic nerve disorders, as neuritis, and in many functional disorders of the nervous system, which are toxic in origin. Its influence on the prognosis of pneumonia, typhoid fever, and other infectious diseases is not questioned, yet the therapeutics of buccal disease is in a comparatively unsatisfactory state, notwithstanding the ease with which the mouth can be inspected, its secretions tested and remedies applied. The process may be local or general. It may be limited to the vicinity of one tooth or extend throughout the mouth. If present, it may be indicated by a carious tooth, by an abscess, or by an inflammation at the root of the tooth. More evident processes are seen in gingivitis, in stomatitis (catarrhal suppurative, ulcerative and ulceromembranous), in pyrrhea alveolaris, in tonsillitis, and in ulceromembranous angina.

My interest in mouth infections was stimulated during my service as physician to the Philadelphia Hospital for Contagious Diseases in 1910 where I had the opportunity of studying the throats of from 50 to 200 patients daily. My first cases of Vincent's infection were seen at this time; the others were seen among the servants of the Glen Springs Sanitarium and in my private practice.

In this paper I wish to record my experience in fifty distinct cases of ulceromembranous, or Vincent's angina and supplement with a review of the literature.

I have examined the latest textbooks of medicine for a description of this infection. The majority of the authors either fail to mention this infection, or else confine their discussion to but a few lines. Most of the articles on this subject in the medical journals contain reports of the unusual cases rather than the ordinary ones.

Without a doubt this tonsillar and pharyngeal affection is treated more frequently than any other mouth infection, without a correct diagnosis having been made. Many times a positive diagnosis would be made if, in addition to cultures, smears were made from the ulceration. Some cases have even received salvarsan before smears were made, showing the fusiform bacilli and spirilla of Vincent. The failure of many laryngologists and pediatrists to recognize this infection is due to their attention not being especially called to its clinical features and because of the mildness of symptoms in many cases.

Blühdorn[1] has examined the throats of 222 patients for fusiform bacilli and spirilla and found one or the other or both in all but 27 of 76 patients with diphtheria; in all but 31 of 42 cases with scarlet fever; in all but 13 of 26 cases of streptococcus or staphylococcus sorethroats; in 2 of 4 cases of ulcerative stomatitis; in all but 10 of 31 cases of syphilitic mouth or throat lesions; and in all but 18 healthy persons.

The cases reported by Holm[2] were gathered during 1908 and occurred among 265 cases of suspected diphtheria examined at the Laboratory of the Michigan State Board of Health. *Bacillus diphtheriæ* was recorded whenever present, regardless of the relative number. *Bacillus fusiformis* was recorded only when found by direct smear from the swab to be more numerous than any other. The total number of cases examined for diagnosis was 265, showing *Bacillus diphtheriæ*, 118; *Bacillus fusiformis*, 73; a membrane was described in all but 4 cases; involving both tonsils, 38; one tonsil, 31; extending to adjacent structures, 15. The color of the membrane was given as gray, or grayish, 41; yellow, 9; white, 8; grayish yellow, 1, and creamy, 2. The highest temperature given was 103.6° F., the lowest 98.5° F., the average being about 100.5° F. The clinical diagnosis was given as diphtheria, 28; suspicious or questionable, 20; tonsillitis, 17; Vincent's angina, 5, and scarlet fever, 1. The cultural results showed streptococci, 29; staphylococci, 20; *Bacillus diphtheriæ*, 14; *Micrococcus catarrhalis*, 8; pneumococci, 1; Hoffmann's bacilli, 1. In the entire series of 265 cases diphtheria was diagnosed on clinical grounds in 99. The bacteriological examinations of these 99 cases showed *Bacillus diphtheriæ* present in 64 cases, absent in 35 cases. Among the 73 cases showing *Bacillus fusiformis*, diphtheria was diagnosed clinically 28 times. The bacteriological examination of these 28 cases showed *Bacillus diphtheriæ* present in 1, absent in 27. This gives a percentage in the clinical diagnosis of diphtheria in the presence of *Bacillus fusiformis* of 96.4. The cultural results in this series of cases indicate that streptococci and staphylococci are the most usual in the cases of Vincent's angina. It should be further noted that, in over three-fourths of the cases of pseudodiphtheria, the direct smears from the membrane showed a predominance of *Bacillus fusiformis*.

Vincent's angina usually occurs between the ages of 2 and 25 years. It is more frequently seen in damp weather, especially during the spring and autumn. Such conditions as oral uncleanliness, local irritative lesions in the mouth, dental caries, inflamed gums, alveolar abscess, syphilis and mercurial stomatitis, acute infectious and contagious diseases, enlarged and necrotic tonsils, trauma after tonsillectomy, etc., favor the development of the disease. Contagion has been observed, but close contact is apparently required as by means of pipes, pencils, drinking and eating utensils.

Vincent's angina consists of an inflammatory lesion in the mouth, pharynx, or throat, situated most frequently upon the tonsils. It usually begins as an acute stomatitis, pharyngitis, or tonsillitis. This soon leads to the formation of a granular or cheesy pseudomembrane, which, at this stage, has a great deal of resemblance to that caused by the diphtheria bacillus. This false membrane may be removed by scraping, leaving bare a reddish and bleeding surface. At later stages of the disease there may be distinct ulcerations. The shedding of this pseudo-

*Read before the Pathological Society, Rochester, N. Y., November 14, 1912.

membrane leaves a deep anfractuous ulcer with prominent edges, which, clinically, has often been erroneously diagnosed as syphilis. The lesion commonly involves one tonsil and may spread to the soft palate, the other tonsil, the pharynx, or the gums. It may even spread to the larynx or trachea in children. In scarlet fever patients I have seen it involve both pillars of the fauces, the tonsil, and the lateral wall of the pharynx, extending for a short distance into the nasopharynx. The ulcers do not, in themselves, comprise the entire lesion. Softening and swelling of the mucous membrane of the gums, which become grayish and bleeding, has also been observed. Some authors have confounded this form of stomatitis with scurvy. It is evident that the disease is not simply a stomatitis, it is an ulcerogangrenous inflammation of the whole buccopharyngeal cavity. The ulceration at times is very destructive, destroying the whole or a portion of the tonsil, and invading healthy tissue. The tendency is to extend laterally instead of deeper. A curious fact is the rapid recurrence that takes place when the membrane is removed, so similar to the membrane of diphtheria. In a number of cases reported the tonsils have been amputated but, in each case, the wound became infected with the same organisms. The submaxillary, retromaxillary, and cervical lymphnodes are often markedly swollen and tender, but rarely suppurate. In scrofulous subjects they may persist indefinitely. The disease is acute or subacute and often becomes chronic, the ulcers persisting for weeks or months. One attack is likely to be followed months or even a few years later by a recurrence. Infection takes place only when the mucous membrane is abraded and it often becomes engrafted upon a preceding attack of amygdalitis. There may be no constitutional disturbances, the patient complaining only of more or less pain in swallowing, or he may have discovered the yellowish patch on examining his throat with a mirror, because of a slight feeling of discomfort. Again the symptoms are most violent—great pain in mastication and deglutition, breath fetid, saliva profuse, more or less gastrointestinal disturbances, submaxillary and cervical lymphnodes enlarged and tender, and neuralgic pains in the side of the face and neck, sometimes even extending to the chest. The temperature varies from normal to 102 deg. While resembling tonsillitis, the following points of difference are noted: The absence of rise of temperature, the constitutional symptoms are at variance with the amount of lesion seen, and the pain is more localized on the affected side, being quite severe and lancinating.

The depression of the patients in some cases is very marked, so much so that the patients are completely prostrated, out of proportion to the clinical manifestations of the throat lesions. The depression is not present in a marked degree except in cases where the membrane covers a large area of the tonsil or pharynx and is of the heavier type. The cause of such prostration has not so far been ascertained.

The most peculiar characteristic is the absence of rise in temperature, for all other tonsillar invasions, even those of less area involved and apparently of less virulence, are associated with rapid rise in temperature. The absence of this symptom is one of the most constant signs, and is especially difficult to explain in the face of the great malaise and exhaustion which are usually of toxic origin. The localized pain simulates very much that of quinsy; in fact, oftentimes, from the patient's appearance, we have made a tentative diagnosis of peritonsillar phlegmon, this being dispelled on examination.

Case I.—An example of this type is seen in the case of a girl, aged sixteen years, who gives a history of having had, during the past three or four years, about ten to twelve attacks of quinsy. I was consulted April 18, 1912, for a recurrent attack. Upon examination I found the neck swollen and tender on the left side, the left tonsil and pillars of the fauces swollen, and an ulceration covering the lower half of the tonsil. This ulceration was filled with a grayish, cheesy pseudomembrane. There was considerable pain in deglutition, neuralgic pains in the face and neck, headache, chilly sensations, and marked general depression. The temperature varied from normal to 99 deg. F. The pulse was not accelerated. Microscopically, by means of smears, fusiform bacilli and spirilla (Vincent) were found in large numbers. Treatment was instigated and the patient improved rapidly. At the end of the first week the patient refused treatment, thinking it was only the "ordinary sore throat" and would get well without further treatment.

Three weeks later I was again summoned. This time both sides of the neck were quite swollen and tender, the tonsils enlarged until they almost met in the midline, and the ulceration was now located on the lateral walls of the pharynx. There were severe lancinating pains in the face and neck extending to the chest, difficult mastication, deglutition almost impossible, inability to sleep because of difficulty in breathing, and depression so marked that the patient was confined to bed for several days. The temperature and the pulse were again normal. Smears made from the ulceration showed almost a pure culture of fusiform bacilli and spirilla. Treatment was again instigated and the patient improved rapidly. The diagnosis of ulceromembranous tonsillitis and pharyngitis was made in this case because of the "punched out" appearance of the ulcer, the absence of rise in temperature and accelerated pulse, the presence of almost a pure culture of fusiform bacilli and spirilla, the disappearance of these microorganisms with the symptoms and their return with the return of symptoms.

Case II.—This patient was a man, aged twenty years, who complained of toothache. This gradually became so severe and the depression became so marked that the patient had to quit work, and consulted me for relief of symptoms until he could go to a dentist. Examination of the mouth revealed an ulceration of the mucous membrane on a level with the last molar teeth. The ulcer was filled with necrotic material which was slightly adherent. The temperature was normal and the symptoms were out of proportion to the amount of lesion. Fusiform bacilli and spirilla (Vincent) were found in large numbers. Under treatment the symptoms disappeared in a few days. Diagnosis—Ulceromembranous stomatitis.

Case III.—Man, aged twenty-seven years. History of sore throat, painful deglutition, and malaise for two or three days. Examination of the throat showed the left tonsil to be swollen and partially covered by a grayish membrane. The temperature and pulse were normal. Cultures were reported negative for Klebs-Löffler bacilli. Smears showed almost a pure culture of Vincent's spirilla

and fusiform bacilli. Under treatment the ulceration was healed in ten days. Diagnosis—Ulceromembranous tonsillitis.

Case IV.—Child, aged two years, admitted to Ward B of the Scarlet Fever Department of the Philadelphia Hospital for Contagious Diseases on the second day of the disease. At that institution routine examinations are made of the throat of all patients daily. In this case examination revealed an extensive ulceration involving almost the entire right tonsil, both pillars of the fauces, the right lateral wall of the pharynx, and extending for a short distance into the nasopharynx. The right submaxillary and retromaxillary glands were enlarged and tender. Temperature 102 deg. Cultures were negative. Smears contained Vincent's microorganisms in almost pure culture. Swabbing of the ulceration was done with cotton saturated with hydrogen peroxide and wrapped around the index finger. After all the necrotic material was removed, a 10 per cent. solution of copper sulphate was applied directly to the ulcer. Following this a saturated solution of potassium chlorate was used. No fusiform bacilli or spirilla were found after the seventh day of treatment. The ulceration was completely healed in about three weeks, leaving practically no scar tissue. Diagnosis—Scarlet fever and ulceromembranous pharyngitis.

These cases were selected as representing the different ways in which Vincent's angina is manifested.

For a long time this infection has been confounded with other infections of the mouth under the misleading names of stomacace, chancre, scurvy, membranous stomatitis, etc. The nature of the lesions of this peculiar kind was not clear until Plaut,[3] Vincent,[4] and others reported uniform bacteriological findings in cases of this description. These observers demonstrated in smears from the lesions a spindle-shaped or fusiform bacillus, and a spirillum not unlike the spirillum of relapsing fever. The two microorganisms are always found together in this form of disease and were regarded by the first observers as representing two distinct forms dwelling in symbiosis. More recently Tunnicliff,[5] on the basis of experimental work, has claimed identity for the two forms, believing that they represent different developmental stages of the same organism.

The fusiform bacilli are from 3 to 10 micra in length and have a thickness at the center varying from 0.5 to 0.8 micron. From the center they taper gradually toward the ends, ending in points. The lengths of these bacilli may differ greatly within one and the same smear preparation. They are usually straight, sometimes slightly curved. MacWhinnie[6] describes them as resembling canoes with often transverse markings that somewhat resemble the seats of the canoe. Stained preparations show a characteristic inequality in the intensity of the stain, the bacilli being more deeply stained near the end, and showing a banded or striped alternation of stained and unstained areas in the central body. Their staining qualities in this respect are not unlike those of the diphtheria bacilli. The bacilli are nonmotile. They have not yet been isolated in pure culture, although Vincent was able to make them grow in bouillon with other organisms from the mouth. It is a saprophyte of the buccal cavity, but becomes pathogenic in the presence of other organisms. Fusiform bacilli morphologically similar to those found in the angina of Vincent have frequently been found in smears taken from the gums, from carious teeth, scurvy, and noma.

The spirochetæ, or spirilla, are usually somewhat longer than the fusiform bacilli, and are made up of a variable number of undulations. They are shallow and irregular in their curvatures, unlike the more regularly steep waves of the *Spirochæta pallida*. By the earlier observers, cultivation of these microorganisms was attempted without success. Recently, however, it has been shown that cultivation could be carried out under anerobic conditions. Tunnicliff[5] has cultivated them anerobically upon slants of ascitic agar at 37.5 deg. C. This observer found that in such cultures, before the fifth day, bacilli only could be found, that after this time, however, spirilla gradually appeared and finally constituted the majority of the organisms in the culture. It appeared to Tunnicliff from this study that the spirilla might be developed out of the fusiform microorganisms representing the adult form.

The spirochetes that may lead to confusion with the spirillum of Vincent are the *Treponema pallidum*, the *Spirochæta refringens*, and the *Spirochæta dentium*.

*Treponema pallidum* is an extremely delicate undulating filament from 6 to 14 micra in length by 0.25 micron in breadth. Its convolutions vary from 6 to 26 extremely close and fine turns; the ends are pointed and a flagellum has been described at each extremity.

*Spirochæta refringens* is not found regularly and is not pathogenic. It is strongly refracting and its color with Giemsa's stain is blue, and not pale rose. It is easily distinguished by its coarser contour, its greater thickness, its less numerous undulations and by its ends being more blunt.

*Spirochæta dentium* is also shorter and thicker than *Treponema pallidum;* the ends are more blunt; flagella-like ends are less common; the spirals are flatter, less regular, and narrower. To many observers these points of difference are so fine that many times it is almost impossible to differentiate them. *Spirochæta dentium* is found only on the surface, so it is quite important to remove the surface layer of a lesion and examine the serum from the deeper parts, being careful to prevent surface contamination. This practically eliminates *Spirochæta dentium*. If a spirocheta is demonstrated that is over 10 micra in length we may be reasonably certain that we are dealing with the organism of syphilis. If both a fusiform bacillus and a spirillum are found in almost pure culture we can make the diagnosis of Vincent's infection.

The microorganisms of Vincent's angina, when occurring in the throat, are rarely present alone but are usually accompanied by other microorganisms, such as staphylococci, streptococci, and not infrequently diphtheria bacilli. If pseudodiphtheria organisms are present, we have them showing a gram positive reaction. It is not yet determined whether the disease is due to the fusiform bacillus alone, or whether the spirillum plays any part; the spirillum may possibly be merely a morphological variation of the bacillus. The fusiform bacillus is occasionally found alone, but the spirillum never.

The large number of fusiform bacilli and spirilli in the false membrane, the reproduction of the membrane as long as these microorganisms are present, and the clearing up of the mucous membrane as soon as they commence to decrease, are sound arguments for admitting their action in the genesis of this disease.

The diagnosis in all cases should be made with microscopic slides, consisting of smears from the membranes, which require but a few minutes. The superficial, necrotic pseudomembrane should be removed gently and a smear made from the underlying fluid. This should be fixed and stained in the ordinary way. Any of the aniline dyes may be used, but they are more readily stained by Löffler's methylene-blue, saturated aqueous solution of gentian violet, Giemsa's stain, or India ink. They are usually decolorized by Gram's method. Stained preparations show a characteristic inequality in the intensity of the stain, the bacilli being more deeply stained near the end, and showing a banded or striped appearance. The occurrence of the bacilli may be irregular, often occurring as tetrads, presenting vacuoles and other degenerate forms. The spirilla are stained with more difficulty than are the bacilli and usually appear less distinct in the preparations. The stain, however, is taken without irregularity, showing none of the apparent metachromatism observed in the bacilli. The fact that so many cases of ulceromembranous tonsillitis are not recognized is due to the fact that immediately the membrane becomes evident a culture tube is brought into service and the case is subjected to the routine of a diphtheria case. These microorganisms will not grow on the ordinary culture media; so many times the report comes back negative when the case is really one of ulceromembranous angina. Other cases are overlooked because the symptoms usually complained of are not always present and because there is usually no rise in temperature. Smears should always be made in every case of suspected diphtheria. In suspected syphilis, in both the secondary and tertiary stages, an examination of a smear would clear up the diagnosis. Here we must be very conservative in reporting such an organism because of the similarity of the morphology of the *Treponema pallidum*.

The prognosis is usually good. The rapidity with which healing of the ulceration takes place following the disappearance of the membrane is striking, as a rule, leaving no manifestation of the previous condition. This applies to the superficial as well as to the deeper ulcerations. Sometimes the disease tends to persist for several weeks, and may recur at any time. Complications are seldom troublesome, and a fatal issue is not to be expected unless the larynx or trachea becomes invaded in a child. The adenitis which often accompanies this process disappears readily, usually in six to ten days after healing has taken place.

The treatment of this disease is very simple but must be thorough to be effective. The necrotic material or pseudomembrane should first be removed by swabbing the ulceration with hydrogen peroxide, full strength, or diluted half, until the ulcer is clean. Then either a 10 per cent. solution of copper sulphate followed by a saturated solution of potassium chlorate, or tincture of iodine should be applied directly to the ulcer. Iodine is probably the best local agent for destroying the bacteria and at the same time promoting healing of the ulceration. The drugs recorded as used by different authors are: Silver nitrate, subacetate of copper, chromic acid, carbolic acid, argyrol, iron and glycerine, methylene-blue, zinc sulphocarbolate, and local application of salvarsan. The galvano cautery and chemical cauterizing agents have been used without much success. An astringent cleansing mouth wash is indicated. Potassium chlorate should be used either locally or internally. Most relief from the pain in swallowing will be obtained from the use of orthoform in powder or tablet form. General tonic treatment is indicated only in multiple stomatitis and in the recurrent forms. To prevent infecting others, drinking and eating utensils should be sterilized and kept separate. Sputum and mouth discharges should be burned. Following the attack, local disease of the mouth, teeth, and tonsils should be attended to, but operative work had best be postponed until making sure, by the microscope, of the absence of the specific bacteria. Removal of the tartar from the teeth and oral hygiene are important as preventives.

*Relation of Mouth-Disease to Disturbance of Metabolism and Systemic Disease.*—The physician, whenever he is consulted by any patient, should examine the mouth carefully, and give advice for daily continued cleanliness; the character of the solutions he deems advisable to order depending on the condition in which he finds the mouth. The frequency of the agency of the mouth in the production of diseases is almost altogether overlooked. Its importance in diagnosis is only beginning to be recognized. How often do we find pathological conditions in which the most minute examinations of the blood and urine are made, the temperature, the pulse, the respiration, and other conditions carefully noted, while the diseased mouth, reeking with dangerous microorganisms, is overlooked as having no bearing on the case. Treatment of septic disorders is greatly retarded and, in certain cases, rendered altogether impossible by the neglected condition of the mouth. The mouth seems to be splendidly arranged for the propagation and even the protection of bacteria. There are cavities, caverns, and crypts, not easily cleansed, which are moist and warm, and more or less food is deposited near or in these spaces, which forms suitable pabulum for the growth of bacteria. Accumulation of infectious matter in the mouth may easily become the origin of disturbances of varied degrees of intensity in the most vital portions of the alimentary tract. It has been shown that some of these pathogenic bacteria may cause not only intestinal indigestion and putrefaction, but may even be a source of pernicious anemia. A normal gastric juice kills most of these germs which are swallowed, but anything which alters the secretions will allow these germs to be carried into the intestines unharmed, where they can continue to grow. Mouth infection influences the prognosis of pneumonia, typhoid fever, and other infections. It adds immensely to the gravity of the case, not only because of the existing local disorders, but because of its past effect on the organism. The resistance and the nutrition are influenced. There is always the danger of reinfection because the organisms may be harbored in the tooth cavities and crypts. In anemia, chronic toxemia, arthritis, chronic gastrointestinal conditions, etc., the course is in accordance with the degree of success attained in the treatment of the primary mouth disorder. Oral antisepsis is a field of preventive medicine which must be worked out by the combined efforts of the physician, the dentist, and the patient.

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275 Alexander St.

## GONORRHEAL OPHTHALMIA TREATED WITH GONOCOCCUS VACCINES.

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A study of the character of the discharge in gonorrheal ophthalmia with the microscope, noting the morphology of the bacteria and their location, led to the attempt to treat these conditions with the vaccines. Seeing that these bacteria were present in the cells of the conjunctiva and the cornea in small colonies, few of them being free and so few being actually found in the many pus cells in each field examined, the natural inference was that could there be an immunity established for the actual corneal and conjunctival cells below the outer layer, the disease should run a mild course without any serious complications and would yield more readily to the usual external treatment. The fact that these bacteria grow best or at all satisfactorily on blood serum cultures also was in favor of the treatment by rendering the serum of the patient a poor culture medium for their growth. The first nine cases so treated showed very marked results and the clinical history of these cases is here given for consideration. In all the cases treated there was a very rapid termination of the swelling of the lids and a decided lessening of the discharge, and in only one case were the bacteria found after the second week. Usually one felt that after the first couple of days all danger to the eyes was passed and that in a week or ten days the patient was as good as cured. Of these cases eight were treated in the Platt Pavilion of the New York Eye and Ear Infirmary from the clinics of Drs. W. E. Lambert, R. G. Reese, and L. W. Callan; one was treated at home in the country by the parents with equally satisfactory results.

Case I.—Max N., age 24. Lids and ocular conjunctiva red and swollen and much pus. Had gonorrhea and rheumatism of the knee and pains in hip. Smears were negative from each eye, but cultures made grew gonococci; after three days the smears from the eyes were positive and there was a beginning involvement of the right cornea with some haziness. This case was undoubtedly a metastatic condition. Put in hospital and gonococcus vaccine injected by hypodermic syringe with argyrol, 25 per cent., and boric acid irrigation locally. Previous to admission he had had this treatment but steadily grew worse. The vaccine injections were given every third day—first 50 million gonococcus and 200 million staphylococcus albus, the other doses double this amount. In forty-eight hours the swelling was gone in the lids and the eyeballs were almost white. The case steadily improved and the smears were negative in two weeks. The patient was held a week and discharged in three weeks with eyes well. The rheumatism had also disappeared. Two weeks later he reported he was again working as a butcher carrying heavy meats and on his feet all day with perfect comfort.

Case II.—Baby F., age 3 days; premature baby, 7 months. Both eyes were badly swollen and red, discharging much pus; had been using argyrol, 20 per cent., but eyes got much worse. Smears showed numerous gonococci. Baby small and weak and would take no nourishment. It was in the country and could not go to hospital so I decided to use vaccine of gonococci 50 million, pseudo Klebs-Loeffler 50 million, staphylococcus albus 100 million, streptococcus 50 million, colon bacillus 50 million. The first dose was one-third of this amount and the subsequent doses (at two-day intervals) one-half. After the second day the swelling in the left eye had disappeared and the baby was feeling better and took some nourishment. After the fourth day both eyes had lost all swelling and there was very little discharge. The next three days baby had almost no local treatment as the mother developed pleurisy and could not attend to it, but it lost no ground and opened both eyes nicely. In two weeks the eyes were cured and the vaccine was discontinued with only occasional local treatment. This baby was nourished hardly at all and was very weak during the whole course of treatment, but was not affected in any way by the vaccine injections and lived for seven weeks before it died of malnutrition on the approach of cold weather. The physician attending the family had not expected the child to live a week when it was born.

Case III.—Baby Wm. D., age 15 months. Had sore eyes about a week when taken to hospital. Both eyes were swollen and outside of lids very red and closed tight. Treated three days in hospital; no improvement. Same vaccine used as in preceding case in same dosage. On the second day after injection the baby opened both eyes, the swelling was almost gone, and the discharge was very limited. Vaccine was used at three-day intervals during the second week. Both eyes were closed again for one day and a small ulcer was discovered on the left cornea, but this was yellowish and raised, with no haziness of the cornea except in the limited area of the ulcer. Atropine ordered t.i.d. Two days later the ulcer appeared the same, but smears from both eyes were negative. As ulcer appeared phlyctenular I applied yellow oxide of mercury, gr. i, in lanolina 5iss, morning and night. The ulcer began to improve immediately and in forty-eight hours was healed. After six injections the patient was discharged cured.

Case IV.—John H., age 20 years. Old extensive macula in the right cornea from traumatism. He had posterior urethritis and rheumatism of knee, finger, and elbow. Both eyes were red and lids somewhat swollen with much discharge. Argyrol and boric acid irrigation was ordered, and a vaccine of 100 million gonococcus and 80 million staphylococcus albus were injected every three days. There was immediate improvement in both eyes. On the sixth day he had pain in the right eye and some redness—probably iritic irritation—as there was no ulcer on the cornea; this disappeared the next day. After six injections the patient was discharged, both eyes showing negative smears. After eighteen days treatment the rheumatism was almost all gone. After the patient had gone home his physician gave him a very large dose of vaccine, estimated at 250 million, but probably more. In forty-eight hours both eyes were red, all the joints were inflamed, and small ring of ulcers appeared on the left cornea. Smears were negative in both eyes. He was sent to the ward, atropine

was used, and a vaccine of 100 million gonococci was given. In three days the eyes and joints were better, and two days later the patient was discharged and walked out of hospital without a cane. Ten days later he reported all well in both eyes. He had danced all the preceding evening without any inconvenience at all.

Case V.—Max B., age 24. Right eye affected, very red, and swollen. He was five days in the ward getting worse under treatment with argyrol and boric acid, small ulcers appeared on the cornea, and there was a copious creamy discharge. Gonococcus phylacogen was injected on the fifth day, 5 c.c. subcutaneously. There was a marked reaction, the temperature going to 104°, but the eye improved, and after the second injection he could open the eye himself. Five daily injections of 10 c.c. were given, when the eye appeared almost normal, and the patient was sent home. He reports no relapse. After each injection the systemic reaction was less and of shorter duration.

Case VI.—John S., 4 weeks old. Treated three weeks at home. Perforating ulcer of the right eye. The left eye has been discharging four days now. Lids very swollen and copious thick creamy discharge. Smears from both eyes positive. Vaccine (100 million gonococci) used every three days, atropine to right eye, and argyrol and boric acid irrigation to both. Two days after admission the baby opened left eye; there was protusion of iris in the right with still some swelling of the lids. After two weeks the left eye was clean and well, with smears negative, but smears from the right eye were still positive, though the cornea had healed, the eyeball was white, and only a small incarceration of the iris was present. The rapid healing of this eye was the most remarkable incident in the whole series of cases.

Case VII.—Ethel C., 1 month old. Both eyes red and much pus; not so much swelling of the lids. Daily injections of gonococcus phylacogen, ½ to 1 c.c., were given. After the second day the eye appeared almost well, eyeballs white. After the first week the eyes were white and conjunctiva of the lids were pink. Smears were negative after ten days.

Case VIII.—Thomas P., 10 days old. Treated six weeks in the ward with argyrol and boric acid. The eyes were not swollen and there was only a small amount of discharge, but smears showed gonococci still present. Two doses of 1 c.c. of phylacogen were then given subcutaneously, following which the smears were negative and the patient was discharged.

Case IX.—Wm. G., 1½ years old. Eyes sore and discharging for ten days. Both were swollen and closed and there was much discharge. Cornea clear. Five doses of gonococcus phylacogen 1 c.c. were given subcutaneously. Reaction was somewhat marked, temperature 102°. After five days the eyes looked entirely well and normal and patient is ready to leave the ward.

Analyzing the preceding cases, the use of the vaccine seems to be warranted in this disease, as the reduction of the swelling of the lids is so prompt and the deeper tissue of the cornea and conjunctiva seem to be protected quite effectively against the invasion of the gonococci, as shown by the cases in which there were abrasions of the cornea.

This appears to be a useful adjunct treatment, especially in those cases which cannot be treated in a hospital or have proper nursing facilities, as in the smaller places in the country. The vaccines used were stock vaccines of three different laboratories and were purchased in the open market. Fifty million gonococci as an initial dose and one hundred million as subsequent doses did not affect even small babies in any untoward manner locally or systematically, and double this dose was used for adults and was well borne. The use of the gonococcus phylacogen, a strained vaccine, was attended by a more rapid effect, but the chill and rise of temperature, as reaction, make its use outside of a hospital, or where no trained attendance is at hand, rather alarming to the lay mind, though expected by the physician; it might be used to advantage in a case of emergency when the eye seems threatened and an immediate effect is desired, but the active immunity established by the vaccine seems more desirable for the ordinary case. These cases were treated alongside of other cases in the ward in which the old treatment alone was used, and many of the latter ran a course of six to eight weeks, during which the swelling and discharge persisted for a long time, with the attendant worry as to the danger of complication of the cornea and loss of the eye.

In not one case treated was the result at all unsatisfactory and the almost immediate reduction of the inflammation was most gratifying.

The use of the vaccine alone does not seem to be justified, but should be supplemented by measures of local cleanliness and antisepsis.

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## THORIUM X IN THE TREATMENT OF PERNICIOUS ANEMIA, WITH REPORT OF CASE.

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Among all the advances and discoveries of modern medicine, there is none so interesting and marvelous as that which relates to the action and properties of the radioactive elements. A great literature has already been built about radium and its achievements, but so far very little has been published in this country about thorium, the sister element.

Discovered in 1828, by Berzelius, in the magnetic ores of Norway, it is found combined with monozite, orangite, thorite, and other rare minerals containing the cerium group. Named in honor of the Thunder God, it was given the symbol Th. and found to have an atomic weight of 232.63 and a specific gravity of 10.96.

When isolated it is a grayish powder, which assumes an iron gray luster when burnished. Heated in the open air it burns readily with a brilliant flame, forming thorium dioxide. Of late years it has been used in the arts very sparingly, owing to its great rarity and cost, but it was not until 1898, when the discovery was simultaneously made by Mme. Curie and Professor Schmidt of the radioactivity of its salts that it was thought of as a possible therapeutic agent.

In 1902 Rutherford found that there were given off from its salts emanations similar to those of radium, which could be blown from one vessel to another, and which would render radioactive the walls of the container. Since that time, owing to the painstaking researches of Bickel, King, Plesch, Gudgent, Czerny, Canne, Curie, and others, much very interesting information has been gained.

Regarding the length of its existence, science tells us that thorium exists for millions of years in an unchanged state, constantly giving off energy. From the element thorium is derived mesothorium, which exists 7.9 years. The next step is mesothorium 2, with a life of 8.9 years. Then in order, radiothorium, 2.9 years; thorium X, 5.25 days; emanation, 76 seconds; emanation A, 15.3 seconds; B, 79 seconds; C, 1 second; D, 4.5 minutes.

Investigation has shown that of these various products of thorium, X has the most wonderful properties and is of practical use in internal medicine. Thorium X is produced by superimposing upon a layer of radiothorium a solution of 1-3000 of sodium chloride. By using definite quantities of each, an absolute strength of thorium X is obtained, which can be measured by a delicate electroscope, and is expressed in Mache units.

Careful experiments have demonstrated that this substance in large doses is inhibitive to cellular life. Seeds, soaked in strong solutions, lose their power to grow; and dogs fed with doses of several million Mache units die, and on examination present necrotic areas in the gastrointestinal tract. Epithelial cells of cancer, and of lupus are influenced as by radium. There has been one fatality in the clinic of Gudzent, where a fat woman of fifty-nine years of age was given intravenously 900,000 M. units on March 21, 550,000 more March 30, April 2, 10,000 of thorium A, April 6, 3,000,000 M. units; went home April 10 apparently in good health. Returned April 15 suffering with pain in the abdomen; leucocytes, 312. April 18 developed hematemesis and melena. Leucocytes dropped to 100. Death occurred, and at autopsy the same signs were found as in the cases of dogs killed by thorium. In the same clinic other patients had received as high as 4,000,000 M. units without harm.

Given in moderate doses no harmful effect has ever been observed, either upon the epithelium of the gastrointestinal tract or upon any of its secretions. Likewise there has been no deterring effect noted from its action upon the kidneys.

The observed fact that after twenty-four hours the greater part of the thorium X that had been given to dogs could be recovered from the red marrow of the bones, directed the attention of investigators to its action upon the blood. Then it was found that there was a remarkable stimulation exercised upon the red cell formation. This discovery was eventually made use of by A. Bickel, professor of internal medicine at the University of Berlin. His case as he related it to me was most interesting.

The patient, a man of middle age, had had pernicious anemia for several years, had apparently reached the end, and was about to die. There was an enormous amount of anasarca. The red cells numbered 960,000. Small doses of thorium X were given by the mouth three times a day, with the following results as regards the number of red cells: May 1, 960,000; May 10, 1,200,000; May 20, 2,085,000; May 30, 4,320,000; June 12, 4,600,000. This patient received 50,000 M. units daily during this period. He became apparently perfectly well, and the blood picture became and has remained to the present time normal. Dr. Bickel said that the improvement was almost startling, and in no way simulated that seen in the usual recovery that follows the earlier relapses.

Plech reports a case from Kraus's clinic where in a case of pernicious anemia with a red count as low as 340,000 in a woman of thirty years there was an increase of 860,000 red cells in twenty-four hours. This patient also made a speedy and so far a permanent recovery.

Up to last September there had been nine cases treated by this method. Three of these showed no effect, and probably were cases of so-called secondary pernicious anemia, for in such cases it has been observed that thorium X has no effect. The other six cases responded in the same manner as did that of Bickel's, and are apparently cured.

In the fall of 1912 Dr. Bickel was summoned in consulation to see a case of pernicious anemia in Greenwich, Conn. This lady was at the point of death, suffering from a complication of heart and kidney disease as well, and survived but a few weeks. In spite of the unfavorable circumstances, however, her red cells increased in that short time 800,000. Having a case that was getting worse rapidly, I was fortunate in being able, through the kindness of Dr. Bickel, to obtain the specimen of radiothorium which he had brought with him for use, in my own case. This case I will now report, and I believe I may claim the honor of reporting the first case of pernicious anemia cured in this country by the use of thorium X.

Professor B., forty years of age. Father died of prostatic trouble and had had a cough for many years. Mother died of tuberculosis pulmonalis. He has one brother who is in good health. The previous history up to the time of his present disease is negative save for a severe attack of yellow fever in 1888. He fully recovered from this and for many years has led an athletic life. While teaching at college in 1906 his health began to fail, and in May of 1897 he consulted an eminent hematologist of the University of Michigan and was told that he had pernicious anemia. He improved under arsenic and went along for nearly a year, when he had another relapse. Again the arsenic was of service although he was longer getting back onto his feet, in fact he did not get entirely back this time, but kept along fairly well until in 1908 he had a very severe relapse. After about four months he got about again and from that time, save for an attack of pneumonia in 1909, he did very well up to the early fall of 1912.

About this time a bad relapse started, and although the old remedies that had formerly checked the progress of such an attack were faithfully used, he steadily failed, until things began to look very serious. At this time I obtained my thorium and began treatment with it. During the first three weeks I combined with it an electric treatment of the long bones and solar plexus, which had given such good results in the treatment of the case since 1908, that I was very loth to discontinue it. He continued to fail steadily and it occurred to me that possibly the electricity was in some way rendering inert the thorium emanations, so this was stopped. At once he began to gain in a very decided manner. His condition at that time was as follows: Edema of all the dependent parts, dyspnea upon the slightest exertion, poor appetite and feeble digestion, and a blood count of 1,200,000 red corpuscles. In just four weeks from that time he was walking about town as vigorous as ever; edema entirely gone, fine appetite and digestion, and a blood count of 4,800,000 red cells. One week later

the count went to 5,280,000; the blood picture was normal and the patient volunteered the statement that he had not felt so well for seven years. As a test of his heart action he recently climbed a long hill, with a snowstorm in progress, without getting out of breath.

Of course many years must elapse before we can positively say that such a case is entirely cured. But the return to normal of the cells in shape as well as quantity leads me to feel very optimistic. In his case the remedy was given almost entirely by the vein, 20,000 M. units being injected with an all-glass syringe and a 27-gauge needle, into the median basilic every other day. No irritation was felt. At first a few injections were made into the muscles but as this caused considerable soreness it was discontinued. A recent communication from Dr. Bickel advises me that in his opinion it is best to give an intravenous dose of 50,000 M. units once every four days until three have been given, and then to continue the treatment with a daily portion by the mouth of 20,000 units, one-third to be taken after each meal.

Whether thorium X proves to be a specific cure or not for pernicious anemia the evidence seems to be irrefutable that in it we have the most potent remedy to aid that is yet known to medical science.

## THE RATIONALE OF THE USE OF ADRENALIN IN THE TREATMENT OF ASTHMA.

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In the treatment of asthmatics the neurotic and personal elements give occasion to so complex an etiology that prophylaxis is only feasible after a study of the vagaries of the individual patient. In the intervals between attacks so free from symptoms is the patient that the treatment at this period is again essentially prophylactic and embraces the removal of any predisposing conditions, and a general hygienic systematization—all in an effort to ward off the attack, or at least to lengthen the intervals between paroxysms. The forte for drug therapeutics would then appear to be in the relieving of the distress of the attack. The position occupied by adrenalin in this condition is peculiar in that although in the majority of cases it is astonishingly effective, it has attained to but scant use at the hands of the general practitioner. It is upon this value of adrenalin, together with its exemption from any permanent secondary effects, that this paper is based, drawing freely upon results obtained by various clinical and experimental workers.

The immediate pathological conditions exciting the symptoms of the attack has given rise to numerous theories. The most plausible and the one at the present time most substantiated by experimental work is that which ascribes the paroxysm to spasm of the circular muscle coat of the bronchial wall. Secondarily congestive swelling with exudation into the bronchial cavity occurs in many cases, and the spasm of the bronchial wall is probably aggravated by the distention of the distal air sacs, pressing upon and further constricting the bronchioles. That such a bronchial spasm may account effectively for the symptom complex produced in asthma has been shown by Brodie and Dixon.[1] They demonstrated that the vagus is the only motor nerve to the bronchial musculature and that in this nerve run dilator and constrictor fibers for the bronchial muscles. Constriction of the bronchioles could be induced by stimulating the constrictor fibers with muscarine, pilocarpine, or electricity, whereupon there occurred all the signs and symptoms characteristic of bronchial asthma. Removal of the constricting influence arrested at once the attack, only to reappear when the constricting influence was re-exerted.

Januschke and Pollak[2] in 1911, after having obtained the experimental bronchial constriction in a manner similar to Brodie and Dixon, demonstrated a dilatation after the intravenous administration of adrenalin. Jackson[3] in 1912 described a series of experimental studies in which the action of adrenalin was investigated. He obtained dilatation of the bronchioles on adrenalin administration, which he concludes is due to stimulation of the bronchodilator fiber endings from the vagus. Jackson indicated further that all his results bear out the opinion that in the intact animal one of the functions of the adrenal glands is to assist by means of their internal secretion in counteracting pathological processes or products, which tend to produce an abnormal broncho constriction. An additional factor in the bronchiole dilatation lies in the observation of Elliott[4] that the administration of adrenalin stimulates a discharge of adrenalin from the adrenal glands, which becomes available for dilatation of the bronchioles. From this group of experimental studies it would appear reasonably well established that adrenalin dilates the bronchial musculature.

The striking clinical results, although explained through many theories, probably owe their beneficial action, at least in part, to this phenomenon. In 1900 Solis-Cohen[5] suggested the use of adrenal extracts in certain forms of asthma associated with vasomotor ataxia on the supposition that asthma was caused by obstruction of the respiratory passages by irregular swelling of the bronchial mucosa similar to angioneurotic edema, and that adrenal extracts by increasing the vascular tone prevented and relieved such attacks.

Lermann,[6] in connection with his employing adrenalin in asthma, has made a study of blood pressure. Before and after the subcutaneous administration of adrenalin, blood pressure measurements were made. He states that the blood pressure which is not high in asthmatic attacks is not increased by hypodermic injections of adrenalin. He attributes the beneficial action of adrenalin to its relaxing the bronchial spasm.

Reilly[7] advocates the use of adrenalin. However, in his cases the asthma was ascribed to nasal pathology and adrenalin was used as a spray upon the contact surfaces with a view to relieving the edematous condition. Eminently satisfactory results were obtained. The inhalation of some adrenalin is a probability in such treatment so that the satisfactory results may have been obtained in a way similar to Segel,[8] who, by causing inhalation of adrenalin in oxygen obtained more than transient relief. However, his small number of cases precludes anything more than hopeful possibilities. Equally hopeful results were obtained by Mathews[9] by spraying the nose with adrenalin in acute asthma. Since only a portion of his series had any nasal defect, the spraying of the nose with so much relief lends plausibility to the possibility that inhalation of adrenalin leads to bronchial dilatation.

Freudenthal[10] advocates the endobronchial appli-

cation of adrenalin for treatment of asthma and cites a series of cases so treated.

Weiss[11] is enthusiastic over results obtained from 3,000 treatments of mild and severe asthmatic cases. His cases obtained permanent relief, and all except ten from a single injection. He supposes that any stimulus contracting the bronchial musculature must follow a nervous condition, or is due to some fault in the composition of the blood, this latter depending on the condition of the blood-forming organs, on the sufficient exchange from the lungs and the skin, on the proper excreting function, and upon the balanced action of the organs of internal secretion. Weiss is of the opinion that through disturbed gland action, the circulation is impaired and carbon dioxide accumulates, which in turn brings on the bronchial attack. He used in treatment sterile watery solution of adrenalin in combination with pituitary extract. This he injects subcutaneously. This writer is of the opinion that adrenalin alone will not suffice. No deleterious actions followed the use of the drug in this way. The idea is advanced that since the attack is caused by faulty blood composition the relief following the administration of the drugs is due to the correction of the circulatory disturbance.

Ephriam[12] reported results obtained in his own hands and made a study of results of other workers. Adrenalin treatment, according to this writer, was introduced into Europe by v. Jagic[13] and later was used by Hofbauer.[14] Of his own cases he writes, "I, too, had opportunity to convince myself often that the subcutaneous injection of .75 to 1 c.c. of the marketable 1 per cent. adrenalin solution, almost invariably terminates a severe asthmatic attack." Ephriam further calls attention to Kauert's[15] observation that the site of injection has somewhat to do with the effect of the drug. Injections in the thoracic region react more intensively than those in the more remote portions of the body. Recommendation is made that injections be made in the forearm. The beneficial action of adrenalin given subcutaneously is very transient. In patients who suffer from rare, short attacks, the interval seems in no wise altered even though pronounced relief is given at the time of the paroxysm. In cases of severe protracted *status asthmaticus* the adrenalin effect never lasted more than two hours. However, no ill results were encountered from a large number of injections at two-hour intervals. Ephriam watched the effect of subcutaneous administration of adrenalin, with the bronchoscope. Anesthesia of the mucosa was carried out as follows: larynx with 20 per cent. alypin, trachea and bronchi with 10 per cent. novocain. Such an anesthesia occurs without producing anemia of the bronchi mucosa. With the bronchoscope in place 1 mg. adrenalin was injected into the back and observations were made. In the cases with severe hyperemia an unmistakable paling occurred after 25-60 seconds. From these observations Ephriam concurs in the theory advanced by v. Jagic and Minkowski[16] concerning the production of bloodlessness in the bronchial mucosa upon adrenalin administration. In addition to the spastic process, hyperemia, swelling, and hypersecretion of the bronchioles play important additional causative parts in asthma so that the characteristic ventilation disturbances of the lung result. If, then, as a result of the subcutaneous adrenalin injection, paling of bronchial mucous membranes and extension of the bronchial lumina both occur, not only does normal lung ventilation return, but also the expectoration of the retained secretion becomes possible—all factors of relief. Ephriam, in order to permit the adrenalin to act upon the bronchial mocous membranes more intensively and extensively than is possible from subcutaneous injections, applies the adrenalin endobronchially. This he finds much more effective toward relieving the hyperemia and swelling, and the duration is much more lasting, being up to ten hours in cases cited by Möller.[17] Such results follow the bronchoscopic observations which permit only examination of the large bronchi, so that the relaxing action of adrenalin on the bronchioles cannot be studied in this way.

Another point of more than passing interest is to be found in Ephriam's article in connection with the eosinophilia occurring synchronously with the asthmatic attack. In four asthmatic patients treated with adrenalin the blood was examined before and after treatment with reference to eosinophilia. Very regularly the adrenalin administration was followed by a pronounced diminution of the eosinophiles, in part a reduction from 10 per cent. to 3 per cent., but continued study indicated that in these patients the eosinophilia varied greatly. Whether the decrease was due to the adrenalin *per se*, or was concomitant to the changes connected with the asthmatic symptoms is left in question.

In the above abstracts no attempt is made to cover the entire literature, but rather to cite the experimental basis for adrenalin treatment and attempt to correlate clinical results, explained at present by means of "far-fetched" theories. That adrenalin has found so scant favor at the hands of the general practitioner may be ascribed to the fear of evil secondary effects. Braun[18] warns against the subcutaneous injection of adrenalin, but widespread and extensive clinical experience not only does not bear this out, but indicate that such a fear is groundless. Kirchheim[19] injected daily 12 c.c. of the market solution for many weeks into patients with severe infectious diseases. No secondary effects of evil nature were to be noticed. At the time of injection certain unpleasant results have been pointed out as occurring transiently. Severe palpitation of the heart may occur, which leads to a very pronounced, but not accelerated pulse. A peculiar restlessness may set in which may create the patient's alarm, and at times the face may rapidly become very pale, but all of these pass rapidly away and at the same time the respiration becomes easier and softer and the rattling and wheezing sounds cease.

From the results indicated above growing out of the use of adrenalin by both laboratory and clinical workers it seems reasonable to conclude:

1. Adrenalin extends the lumina of contracted bronchioles.

2. This dilatation of the bronchioles is probably the basis for the beneficial action of adrenalin in the treatment of asthma.

3. The dilatation follows subcutaneous, intravenous, and endobronchial administrations.

4. The action is transient but very effective in relieving the acute attack. The subcutaneous administration apparently is the most transient.

5. The administration is simple and no injurious results follow as a secondary sequence.

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# A STUDY OF FOURTEEN CASES OF ALCOHOLISM IN CHILDREN APPARENTLY FREE FROM MORBID HEREDITY.*

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The eminent French moralist, pedagogue, and philosopher, Jean Jacques Rousseau, has portrayed in his immortal works, "Emile" and the "Treatise on Education" the nature and the gradual development of the morality and intellectuality in children. He admits that an infant comes into the world with best instincts and only improper directions in his bringing up, as well as examples of bad surroundings, render him apt to commit errors in life and to become undesirable. This thought, while correct in many respects, is deficient in others. It is true that a child is apt to acquire whatever he comes in contact with and whatever he is taught, provided his cerebrum is intact. But one must not forget that each individual possesses certain inherited peculiarities and tendencies which he carries with him through his entire life.

Rousseau's ideas are in accord with our modern conception concerning various influences in the development of the child. We know that the hereditary factors *per se* are not sufficient to create mental abnormalities. Environmental influences play, speaking generally, a very important rôle. It is a well known fact that species of the animal kingdom undergo evolution and transformation under the influence of the exigencies of the environment. While heredity and environment determine all our physiological, anatomical, and psychological characteristics, nevertheless, environment plays a more preponderating rôle, it corrects and modifies hereditary tendencies. A child can justly be considered as a virgin soil on which everything grows with an extraordinary facility. The mnemonic faculty particularly possesses a surprising activity and with it he possesses an instinctive desire for learning and knowing everything, also a curiosity which cannot be stopped. Intelligence, sense of propriety, faculty of adaptation are all rudimentary. From many standpoints he could be compared to an animal. Like the latter, he is attracted only by things that appeal to his tastes. As reasoning power is rudimentary, impulses cannot yet be controlled. The child is very anxious to possess what appeals to him and displays violent anger when his desire is not promptly satisfied; he does not know obstacles. Education, proper bringing up succeed in controlling and inhibiting all sorts of desires and tendencies. But when these factors are wanting, a free hand is given to any desire and tendency to develop in a direction which is most acceptable to the child. Another feature characteristic of the child's nature is imitation. It is very pronounced at a tender age. Easily suggestible, children are always anxious and inclined to do, to act, and to behave like adults. In this manner they are apt to succumb to outside influences which may lead them to the most extraordinary acts. There are imitations of acts which may be the result of noble sentiments but there are also imitations which may lead to and end in criminal acts. In view of the imitative faculty being the strongest in the child's nature, it is extremely important to place him at the earliest possible period of his life in a milieu which will be conducive to an imitation of the noblest sentiments that a human being possesses.

Among the various obnoxious influences which, when taken up by children, are developed by them into a habit with the greatest facility is alcoholism. It has been my good fortune to observe and study a series of fourteen cases of alcoholism in children in the most systematic way. This study has demonstrated to me the disastrous effect of this poison on the physical growth, and on the development of mental faculties and moral conceptions. Moreover, this study is especially useful, in my opinion, in view of the fact that all my fourteen subjects are individuals apparently free from any morbid hereditary transmission, as a very careful investigation revealed unusually healthy ancestors possessing a marked longevity. In this manner the effect of alcoholism is most evident, as morbid hereditary influence played here no rôle whatever.

Nine of the entire series of children became orphans at a very tender age. Distant relatives took charge of them for a certain time, but soon abandoned them and those children were placed indiscriminately with various families for menial services. These families happened to be of a low moral and intellectual level. Promiscuous relations between various members of the same families from the standpoint of acquired habits and sexuality had undoubtedly the most unfavorable influence upon those children. They grew up without any supervision or direction and became early the victims of the bad habits which they witnessed daily. Drink was the most conspicuous vice that they saw being cultivated. At that time their ages ranged between eight and fourteen years. In presence of surroundings of such a nature and being deprived of any wholesome outside influence or example, a child, whose chief characteristic is to imitate, will *nolens volens* succumb to what is frequently repeated before him and acquire of necessity the craving and anxiety for all bad habits. Such was the case with the first nine children of my series. They soon acquired the habit of drink. At first there was only a tasting of beverages, gradually a distinct alcoholic craving developed. Several of them soon abandoned their so-called benefactors and gave them-

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selves to vagabondage. In order to support themselves they committed thefts, and most of their meager illegitimate acquisition was devoted to the use of drink. It is needless to say that other vicious habits followed and then accompanied the use of alcohol. It is also needless to enumerate the number of escapades and of various unlawful acts committed by these juvenile degenerates. Here the degeneracy was not to be considered as an inherited abnormality due either to some prenatal cause or to a congenital transmission of some atavistic characteristic, but as an exclusively acquired vicious tendency due to environmental factors which began to direct the impressionable human nature at a tender age. A number of times they appeared in various cities before judicial officers. The juvenile courts heard their vagaries and small crimes recited a number of times. What is particularly interesting and important is the mental status and the medical histories of these nine juvenile unfortunates. Epileptic convulsions figured in five of them. Various neurotic phenomena, such as tremors, twitchings, restlessness, acquired mimicry, insomnia were evident in all of them. Pallor of the face, gastrointestinal disturbances of a pronounced character, tachycardia are the other somatic manifestations. The mentality was low. Some of them were incapable of appreciating their condition when the latter was explained to them in the simplest possible way. Some of them were brutal and without the least idea of altruistic sentiments. Others presented a marked mental habitude in the intervals between the attacks of alcoholic debauchery. A tendency to attack and injure was present in all of them. One individual developed a penchant for killing chickens and he did it very frequently; he would take special trips to farms and steal chickens for the purpose of enjoying the act of killing. Pederasty was also observed in one of them. All were averred masturbators. The moral conception was rudimentary and in some of them actually nil. None of them expressed any desire for work. Prison, vacant lots, country farms, unoccupied buildings—these were the habitats of these unfortunate victims of early alcoholism. It was impossible to determine the amount of the alcoholic beverages consumed by them. Such was the mental and physical picture of nine of my fourteen individuals at the last examination four months ago. Their ages ranged between fourteen and nineteen.

The remaining five members of my series lived under the supervision of their parents from early infancy until the age of puberty. During that time the parents suffered various financial shocks of the gravest nature. They could not or would not face gravely the calamity and commence life anew in other directions. Other domestic circumstances of the most unfortunate nature, such as marital infidelity, etc., added considerably to the material disaster. Thus was created an open avenue for the reception of the ever-present vice—alcoholism. The homes were broken up, the children drifted away, joined one or another parent or a relative. From that time on the children's fate was decided. As they were of a tender age, from four to seven, they became involuntary witnesses of the physiological and psychological misery. Beer and wine were given the children, at first occasionally, later more frequently. Gradually they acquired a desire for beverages and the latter became an unavoidable element in the house. The fathers and the mothers gradually sank lower and lower, the children were sent out on the street to beg and were compelled to bring to their parents the collected money which was partly spent on drink. In such a milieu the children grew up, partly deprived of necessary food but always supplied with beer which then became a necessity to them. The further development of events is identical with that of the first group of my series.

Mental arrest, mental hebetude, lack of moral conception, perversion of moral sense, no knowledge of the most ordinary normal relationship between man and man, no conception of conventional laws, brutal tendencies and impulses of the most primitive character, abnormal sexual proclivities, excessive use of tobacco—are all manifestations which develop side by side and I must say, because of alcoholism. Not once were they found in a stuporous and confusional state following drink. Some of them had attacks of genuine alcoholic delirium with visual hallucinations.

The picture presented here is drawn from the histories of fourteen individuals followed up for a period of several years. They all present common features, although they may vary in details. These unfortunate victims of acquired alcoholism do not know, and never learned the necessity of working, never understood the meaning of obligations, of altruism, of morality, all factors which distinguish man from animals. Their resemblance to animals in this respect is very striking. Like the latter, they live in accordance with instincts and are entirely controlled by sudden impulses. Voluntary inhibition is not in their domain; it exists in them in the most rudimentary manner. The moral, intellectual, and physical precipice into which they are fallen and in which they are held, was created for them directly by alcoholism and indirectly by unfortunate circumstances. The latter are, undoubtedly, the original cause of physiological disorders as well as of social evils.

Society endeavors to preserve itself from infections and transmissible disease by means of hygienic measures, such as disinfection and isolation of already infected ones. Prophylaxis constitutes now the most rigorous measure, as it destroys the cause of the infection. As an illustration of the importance of preventive medicine one may mention the suppression of the mosquitos in the countries where malaria and yellow fever prevail. In the same manner and with the same vigor the community must endeavor to preserve itself from criminality, delinquence, from feeble mindedness and from other deviations from normal by attacking the cause which produce these abnormalities. To combat social misery and all its consequences is to combat physical and moral deterioration. Preventing them means to prepare generations better equipped to resist depressive influences in life and therefore more apt to receive an intellectual and moral foundation which will transform them. This is a logical conclusion drawn from the application of biological knowledge to social evolution.

The present study is, in my opinion, valuable from a practical standpoint. First of all, it shows with almost mathematical precision the direct nefarious influence of alcohol on an individual during his physiological development. As was mentioned above, there was no apparent element of morbid hereditary which could possibly be transmitted to the offspring and thus produce the mental abnormalities observed in my fourteen patients.

The infancy was normal, the proper surroundings and the proper care were all conducive to normal evolution of the lives of the fourteen individuals. The evident change commenced from the time when the use of alcohol stepped in. The exact future of the fourteen youths cannot be defined. But one fact is certain, that is, they are lost to the community as far as their usefulness is concerned. Moreover, there is a great danger threatening society. That is, the possibility of their marriage or illegitimate sexual relations. They are then likely to procreate and bring into the world weaklings, individuals with an inherited degenerative makeup. Such a state of affairs is dangerous to society as it produces a slow and progressive deterioration not only of the individual, but also of the species; it produces an intellectual and physical sterility of the race with all its social consequences—lowering of the intellectual status and qualitative depopulation.

1430 Pine Street.

## THE NECESSITY OF EARLY INSTITUTIONAL TREATMENT IN MENTAL AND NERVOUS DISEASES.

By F. H. BARNES, M.D.,

STAMFORD, CONN.

MEDICAL SUPERINTENDENT OF DR. BARNES' SANITARIUM.

Much has been said relative to the treatment of mental and nervous diseases and the necessity of sending patients to the various sanitaria and State Hospitals before a psychosis develops or in its acute stages. Some physicians advise against institutional treatment at the start preferring to send their cases to the country to be taken care of in farm houses or the numerous small hotels; others place their mental and nervous patients in city hotels under the care of a trained nurse. Still others advise sea voyages, railroad journeys, or visits to relatives at some distance. Other medical men go so far as absolutely to prohibit sanitarium or hospital treatment, telling their patients they would grow worse under such environment. The fact remains, however, that many patients are not placed in the various sanatoria and State institutions for the insane in the treatment of their individual disease. As a result many chronic cases are admitted to the various sanatoria and state institutions for the insane each year. The public at large are suspicious of institutions, and this feeling of distrust is one of the hardest propositions that alienists have to combat. The name lunatic or insane asylum should not be used by medical men, but rather should the different State institutions for the treatment of mental disease be designated State Hospitals.

It should be possible for patients suffering from mental disease in the acute stages to commit themselves voluntarily to the various State hospitals and sanatoriums, and psychopathic wards should be established in connection with each one of these. The following is taken from the report of the Superintendent of one of the Connecticut State Hospitals: "I believe that the additions in the number of the insane in state hospitals could be kept below that naturally expected from the State's gain in population were it possible to treat a larger proportion of cases in the incipient stages of their disease. I do not consider it possible to do this as long as practically the same procedure is employed in committing a patient to an insane hospital as is followed at the trial of a criminal. We can not wonder that under present conditions our hospitals are regarded not as hospitals but as custodial institutions and that insanity is regarded not as a disease but as a disgrace that must be concealed as long as possible. The expense of providing a so-called reception hospital, slightly removed from, but under the same management as the state hospital, would not be great, and the necessary changes required in the statutes to permit a patient to repair of his own accord to this hospital or be brought by his friends or relatives with the same freedom as to a general hospital need not be radical. Certain cases would of necessity have to be committed to the hospital in the same manner as at present, but a large number, especially if they were given the alternative, would no doubt, enter the hospital of their own accord or at the solicitation of their relatives. They would thus enter the hospital sufficiently early to receive benefit from the treatment administered and their average stay in the hospital would be much shorter than it is at present. The interests of the patient could be properly safeguarded by a provision that if he were unwilling to remain he could not be detained in the hospital beyond a stated period. If he requested his release and it was deemed unwise by the hospital staff to restore him to liberty, he could be examined at the hospital by two physicians and if found insane on their report could be committed by a Judge of Probate entirely without publicity. The chief advantage of having a detention hospital in connection with the existing state hospitals rather than a detached and independent intitution, would be the ease of transfer from the detention to the main hospital and the lessening of expense incident to erection, administration and maintenance. We have received during the period a number of patients who have voluntarily committed themselves for treatment. The majority of these patients were restored to their normal mental condition and left the institution after a comparatively brief stay."

The following from the report of the Superintendent of one of the large private sanitariums of Connecticut: "Where necessity compels the alternative of hospital care or breaking up the order of the home to provide for one of the members, there is fortunately less reluctance than once existed to employ the former; if, however, the onset of the malady is slow, the fact of mental illness is reluctantly accepted; and unless there are more urgent symptoms than delusions that seem to be harmless, or if there is simply insomnia and incapacity for work, the need for hospital treatment, if considered at all, is thought of only as an expedient to be used when all other means have failed. The individual, who suffers mental disorder, is fortunate if the onset and course of the disease is such as to render hospital treatment imperative early. No greater misfortune, after the fact of the disease itself, can happen to the sufferer from a psychosis than to become a prey and victim of predatory isms and cults that flourish today as never before. Acting on the belief that no harm can result, even if no benefit is derived from such a course, the patient's friends indulge the vain hope that the tottering mental citadel may be propped up by some occult means, suggestion founded on a religious basis, or what not, with the result that an already jaded nervous system is subjected to trials that would tax the forces of a normal person, and when the hospital is finally reached, whatever chances for recovery earlier existed. have been sadly jeopardized. An-

other interesting abstract written by a former hospital superintendent who had many years of experience in the treatment of mental disease. The public mind is becoming more convinced of the importance of committing the insane to remedial treatment of appropriate institutions at an early period of the disease, and of the imminent peril attending the delays which arise either from the morbid hesitancy of friends to meet the emergencies of the case or from a desire to test the efficacy of private treatment, traveling, etc., delays so often fatal in their effects, and which often render nugatory the final resort to the hospital.

"One of the first principles of the treatment of the insane, is to remove them from all those domestic associations which are connected with the origin or the progress of the disease, and from the direction or management of those whom the patient has been accustomed to control, either through natural authority or affection, and to present to them an entire change of scene and of all surrounding influences. We can thus hope to break in upon the morbid train of thought, and remove those diseased imaginations which so greatly distress them."

Mental disease is on the increase and will be until the medical profession realizes the necessity for immediate treatment of the borderland cases. Many people keep their relatives at home for months, and in some cases for years because they have morbid fears that they cannot trust their own flesh and blood to the tender mercy of hospital treatment. This should not be the case; people should have confidence in those who by years of experience nad training are best adapted to care for the mentally deranged. It has been authoritatively stated that if all cases of mental and nervous breakdown were taken to hospitals and treated from their incipiency the number of cure could be increased by 50 per cent. People generally should be enlightened on this subject and taught that institutions for the treatment of mental and nervous disease are based on humane principles and that hundreds of earnest men on the staffs of the various hospitals are working constantly to alleviate suffering in every form and are striving to find out the means best adapted for stamping out the thing which is such a menace to our nation at the present time. This can only be accomplished by the cooperation of the medical profession.

In the fight against the great white plague, we have been conclusively shown how much can be accomplished by united effort. The unlimited number of tuberculosis hospitals being established; the interest of the public brought about by lecture and exhibits and their hearty endorsement of all that is being done is a demonstration of the efficacy of united work by our profession. If mental disease is allowed to increase at the present ratio it will not be many years before the burden of taxation for the care and treatment of these unfortunates will be a heavy one. Of this, we, as taxpayers, must each bear a part. Much can be accomplished by preventive means in this as well as in other lines of disease. It is our duty to teach the public the necessity of early hospital treatment of mental disease and the benefits derived therefrom. Surely there is no better cause to interest us at the present time.

It is self-evident that a regulated life under the supervision of a medical man and assistants trained to care for all forms of mental alienation is far superior to being bundled about on steamships or railroad trains with the unlimited number of annoyances which are ever presented to the traveler. Neurotic patients must have medical treatment from those who understand their nervous tendencies. This cannot be obtained in a country farm house or in a city hotel. Such influences only depress and add to the worries of mental patients. Rest is imperative but not rest alone; the various forms of exercise, baths, electrotherapy, massage, vibratory massage, and numerous other therapeutic measures must be at hand in order to provide proper treatment for these cases. The personality of the physician in charge is helpful; by virtue of his training he must keep the sunny side uppermost and provide a lighter shade to the dark picture ever before the neurasthenic type.

The influence of kindness with firmness brought about by long training and experience does much to overcome morbid fears and suspicious ideas. The constant suggestion that the mental sickness is only temporary; that the patient can rise above it and get well does much toward paving the way toward recovery. In fact, the regulated life, the doing of things on time, the knowledge that they must try to help themselves which is the keynote of institutional treatment goes a long way toward the desired end. Drs. Clouston, Bevan, Lewis, Tanzi, and many other prominent alienists enlarge upon the necessity of a regulated life under medical supervision in the various sanitaria and hospitals for mental and nervous disease. The time has come when the profession must stand together as a unit and educate the laity to the necessity of placing their relatives in a proper environment at the earliest possible moment, in this manner avoiding the results of long delay which are only too apparent in all institutions throughout the land. People generally should know that many so-called abuses of the past do not occur in the light of present knowledge and methods of treatment. The institutions generally are striving to the best of their ability to stem the tide of increasing insanity. This can only be accomplished by the hearty cooperation and united effort of the whole profession.

## Medicolegal Notes.

**Proof of Authority to Practise.**—In an action for compensation for professional services registered in a foreign state, where the services were rendered, the undisputed testimony showed that the plaintiff had complied with the laws of that state as a prerequisite to his right to practice. It was held that the question of whether or not he was authorized to practice should not, therefore, have been submitted to the jury. In the case of any dispute in regard to the matter, the court should inform the jury what is required by the laws of the foreign state, so that they may determine whether or not the plaintiff has complied with them. It was held proper to exclude a copy of the plaintiff's license to practice, his failure to produce the original not being satisfactorily explained, and also the certificate of a county clerk to the effect that the plaintiff had registered his license in the office of that county.—Feingold v. Lefkovitz, Texas Court of Civil Appeals, 147 S. W. 346.

**Osteopath—Regularly Qualified Physician.**—In an action on an insurance policy the defendant was liable provided the osteopath who attended the plaintiff was a "regularly qualified physician" as the policy required. The only limitation imposed upon the attendant by the New York statute under which he became licensed as a doctor of osteopathy was that he was not permitted to administer drugs or to perform surgery with instruments. It was held that he was a "regularly qualified physician" within the meaning of the policy, the term being equivalent to one authorized by law to treat the sick.—Anderson v. National Casualty Co., New York Appellate Division, 135 N. Y. Supp. 889.

# MEDICAL RECORD.

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## MORTALITY AMONG PHYSICIANS.

DR. JACQUES BERTILLON, chief of the Bureau of Statistics of Paris, has recently completed an elaborate and extremely valuable monograph "On Mortality and Causes of Death by Occupation." Among other occupations which are separately considered is that of physicians, and Bertillon in this comparative study makes use of ten series of tables (4 English tables, 2 Scotch tables, 1 Swiss table, 2 Paris tables, and a table for France). The latter table is, however, of little use as it combines physicians with pharmacists, in spite of the great differences between the two occupations.

The mortality of English physicians, according to the Registrar General's statistics of 1860-61-71, was very high at ages under 34, then more moderate, and only averaged from age 45 to the end of life. The statistics for 1880-82 give a lower mortality rate for ages 25 to 45. Finally, the statistics for 1890-92 and 1900-02 show a rather low mortality at all ages. The two tables for Paris (1885-89 and 1890-99) show a very low mortality among physicians at all ages. Bertillon makes the following comments on these comparative mortality data: Consumption is rare. Bronchitis is rare. Other respiratory diseases are of moderate frequency in England, and the rate is low for Paris. Valvular diseases of the heart are of average frequency in England, but the rate is high in Paris. Other diseases of the circulatory system are of average frequency in England. Diabetes is very frequent among English physicians. Alcoholism is a little above the average among English physicians, while it is rare in Paris. Liver diseases are very frequent in England, while they are of only average frequency in Paris. Diseases of the nervous system are numerous among English physicians, while apoplexy, according to the statistics of Paris, is below the average among French physicians. Suicide is very frequent in England; very rare in Paris. Accidents are somewhat rare in England; they are rare also in Paris. Physicians and surgeons of England have a mortality considerably above the average at all ages (equal to that of quarrymen), which is not surprising when we consider the unhealthfulness of their profession. It is the same in Switzerland. Consumption, however, is not much more common among them than among the general population.

In the absence of any statistics of the causes of death, Bertillon recently attempted to explain as follows the remarkable difference in the mortality of the physicians of England and Paris: "The majority of the English physicians are naturally country doctors, who are required to go long distances often in rigorous weather in small open carriages, which they generally drive themselves; it is not surprising then that their mortality is high. The physicians of Paris lead an entirely different life and are much less exposed to inclement weather." The examination of the causes of death justifies this explanation, however, only to a slight degree for, if the diseases of the respiratory tract are very rare among the doctors of Paris they are of only moderate frequency among English doctors. When the mortality of the physicians of England and of Paris is compared, cause by cause, we find that the difference appears to hinge particularly upon the frequency of hepatic disorders, diseases of the nervous system, suicide, in a word, upon the diseases which are related to alcoholism, and it would be interesting to know whether or not the greater use of spirits, in moderation or in immoderation, in England may be the cause which underlies the difference in the two mortalities. A comparative study of the mortality among London physicians, rather than those of all England, and the physicians of Paris would have been fairer and more interesting.

## THE DISTRIBUTION OF ENDEMIC GOITER.

ENDEMIC goiter prevails in certain countries and districts to an extent almost incredible to an inhabitant of this continent. In parts of Europe, chiefly in mountainous districts, the disease is so common as hardly to excite comment. In the Milroy Lectures on the etiology of goiter (*Lancet*, January 18, 1913), Major Robert McCarrison of the Indian Medical Service gives some interesting figures regarding the distribution of the malady. For instance, Ballarger has estimated that about the year 1874 there were in France alone no less than 500,000 goitrous individuals, and 122,700 cretins and cretinous idiots. In Switzerland during the six years between 1875 and 1881, 12,227 young men were exempted from military service on account of goiter. In Italy 3 per cent. of the conscripts were rejected for the same reasons between the years 1859 and 1864. In the provinces of Piedmont, Lombardy, and Venice there were in the year 1883, 128,730 goitrous and 12,885 cretinous individuals in a population of nine and one-half millions. In the Himalayan regions where McCarrison carried on his researches, the disease is so common that in some villages it is difficult to find a man, woman, or child not suffering from the deformity. McCarrison estimates that in Himalayan India and in Europe there are about 5,000,000 sufferers from goiter.

With regard to distribution, two main facts are pointed out, the very marked association of goiter with regions of high mountains and the comparative limitation of the disease to temperate and subtropical zones. The association of the disease with

mountainous districts is so well-known a feature that little comment on this phase of the complaint is needful. But it is worthy of notice that some mountainous countries are practically exempt from goiter, as, for instance, certain parts of Norway and the highlands of Scotland, where it is almost unknown. The disease is not unknown in this country, but for the most part on this continent it is more conspicuous by its absence than by its presence. It is found to some extent in the plains of the St. Lawrence in Canada and in the Hudson Bay Territory.

Although endemic goiter is most frequently met with in temperate and subtropical zones, it is not entirely confined to these regions, for it occurs in Siberia, in Finland, and as just mentioned, in the Hudson Bay Territory. Moreover, regions of great heat contain sufferers from goiter, as tropical South America, Borneo, Sumatra, Java, and India. Temperate and subtropical climates favor most its development, but it will and does occur in any climate. A study of the matter has shown that while the disease exhibits a decided preference for mountainous localities and prevails with the greatest intensity in the deep-cut narrow valleys which intersect the mountain ranges of temperate and subtropical zones, it may prevail in any country, flat or hilly, hot or cold, dark and dismal or bright and sunny, where man cultivates the soil. Consequently it cannot be held that configuration of the soil, rarity of the atmosphere, cold or dry air, or any kind of air exerts a preponderating causal influence.

## THE LACK OF RELIABLE STATISTICS IN THE UNITED STATES.

We are apt in this country to plume ourselves upon being in the van of progress in all respects, but in the matter of statistics we must confess to a marked inferiority to the countries of Europe. In France, in Germany, and in England statistics bearing upon public health or upon social or economic questions are more carefully compiled than here. France is notorious for the minute and painstaking manner in which statistics are kept; it has become a fine art and is not infrequently carried to excess. Everyone is aware of the paternal solicitude exercised over its people by the German government, and it has been said even that bureaucracy is there gone mad. In Great Britain, although the attention paid to gathering statistics is less apparent than in the aforenamed lands, statistics are collected on a large scale and put by for future reference. Indeed, complaint is made that the amount of statistical information demanded under the new insurance law is so great that the physician has no time to give to the diagnosis and treatment of his cases.

All branches of statistics relating to public health, directly or indirectly, have been considerably neglected in the United States. There are no population mortality tables of much value, and it was not until the census of 1900 that any really forward steps were taken toward deriving and tabulating such tables. Now, as a result of the establishment of a permanent Bureau of the Census, the registration of deaths has been placed upon a better footing, but Congress has always nullified to some extent the efforts made to provide an efficient system of death registration by cutting down the necessary appropriations.

Again, criminal statistics are weak and faulty. According to Mr. John Koren of Boston, who read a paper on the subject at the recent International Congress of Hygiene and Demography at Washington, the general purposes of criminal statistics are to furnish: (1) A measurement of the volume of crime during a given period; (2) the facts in regard to kinds of criminality, the classes of criminals, and the methods of disposing of them; and (3) a basis for intensive study of specific criminal problems. Under the present system adequate or partially satisfactory criminal statistics are impossible. To give one example out of many, in order to show the hopeless muddle in which the matter of criminal statistics here is enmeshed, each State has its own criminal code and works under a system of criminal courts unlike that of other States. Of course, the collecting and compiling of such statistics is a task that the federal government should undertake, but the relation of the several States to the national government renders this impossible. There is almost exactly the same difficulty regarding vital statistics. Each State is sovereign, to a great extent, as to its methods of dealing with these statistics. Marriage statistics also have received but scant attention here and national registration of marriage has, of course, never been established in the United States. Outside of the District of Columbia and the territories the national government has never attempted to assume the task of regulating in any way the institution of marriage. Statistics relating to marriage or divorce are comparatively valueless. It is very important that vital statistics at any rate should be full and accurate, and it is a distinct slur on a country like this which is often boastful of its superiority to Europe that a small country like Sweden should have systems of vital and criminal statistics immeasurably better than ours. Statistics of all kinds, vital, criminal, marriage, and divorce are factors of no small account in the progress and well being of a country, and it is time that the United States followed the lead of European countries, placing everything relating to public health outside the withering blight of politics, and inaugurated a system of statistics suited to its peculiarities of government.

## An Ill-Advised Visitor.

In the interests of fair play, to say nothing of science and of the fate of the consumptive, it is to be hoped that the events of the first week of Dr. Friedrich Franz Friedmann's residence in New York will not prejudice the profession in America against the remedy for tuberculosis which he claims to have discovered. His course since landing here has unfortunately strengthened the impression which the reports of his actions in Berlin had aroused, that his thoughts are occupied with

the commercial aspects of his culture fully as much as with the blessing it will bring to the consumptive and the fame it will bring to himself. The loud trumpeting with which the newspapers greeted his arrival was presumably through no fault of his, but his actions after arrival have not been such as to prejudice the local profession in his favor. It is not the accepted way of proving the therapeutic efficacy of a drug to hire an expensive office on the most fashionable and public street in the city and to announce that patients will be received and treated, for pay, with the remedy, the nature and mode of preparation of which are kept secret. Fortunately, there is a medical practice law, of which Dr. Friedmann's advisers were apparently ignorant, designed to prevent just such practices as this, and it has been impressed upon this gentleman by the officers of the County Medical Society that unless he can prove his case in a proper way, he will not be allowed to exploit his remedy in this city. He may be assured, however, that if he can prove to the satisfaction of his American colleagues that his culture will cure tuberculosis, and if he will reveal the secret of its nature and mode of preparation, none will begrudge him the fame and fortune that await the discoverer of a cure for this disease.

### Bad Teeth and Disease.

It is interesting to read in medical journals of the present time the accounts given by medical men of the close relationship between a bad condition of the mouth and teeth and ill health. It is only within a comparatively recent period that the fact has been generally recognized that the state of the mouth and teeth has an important, nearly an essential bearing on an individual's health. However, now one can hardly look into a medical or even a lay journal without observing that teeth and gums bulk large from a public health standpoint. It might be said without incurring the risk of being dubbed an exaggerator that teeth have become a national issue and that the possession of good teeth is regarded as a national asset of incalculable value. In the *Medical Press and Circular*, January 29, 1913, a correspondent points out that dental disease is much the most common cause of facial neuralgia and facial hemiplasm, while a correspondent of the *Lancet*, February 1, 1913, draws attention to the fact that many cases of ill-health which have been attributed to lead poisoning are not really due to this form of poisoning but mainly if not wholly owing to a foul condition of the mouth. The writer who is a surgeon under the British Factory Acts, argues that if a man's or woman's teeth and mouth are clean, even if they work continuously in a lead factory, there is not much fear of being poisoned by lead, but if their mouths and teeth are in an unclean state there is every probability of them being poisoned. There is no doubt that on the condition of a person's mouth and teeth hinges to a great extent his health. Some may think that undue prominence is being given to the subject of teeth in these days, but if this be so it is certainly a fault on the right side.

### Chemotherapy and Serotherapy.

Not infrequently we hear these two methods of treatment contrasted as if both could not be justifiable; so that one must be destined to drive out the other. We naturally suspect a commercial rivalry beneath arguments of this character. Even if the chemotherapy of a certain disease appears to be ill founded, that should be no argument against this method as a whole, nor are we even warranted in the belief that the future cannot supply what the present moment does not. If the serotherapy of some affection like scarlatina does not inspire our confidence, why should we reject it outright in favor of some other plan of treatment, provided the two are not strictly incompatible? The answer would seem to be self-evident, but the history of therapeutics shows that the apparent success of one plan is not infrequently the death knell of another. It would be better in every way to preserve a semblance of the old treatment as synergistic to the new; and the profession would escape thereby the accusation of fickleness so often made against it. At a recent meeting of the local medical society of Frankfort, Boenke brought up this question in connection with experimental pneumonia (*Berliner klinische Wochenschrift*, February 3, 1913). Serotherapy of pneumococcus infection having been pronounced practically valueless in man and of limited value in the experimental disease—while contrariwise the new chemotherapeutic remedy, ethylhydrocuprein, fails in one case out of three in animals, the author combined both plans in his treatment of induced pneumococcus sepsis. As a result he now saves nearly all his experiment animals and shows incidentally that there are two essential components in the disease.

## News of the Week.

**Civil Service Examinations.**—The New York State Civil Service Commission will hold examinations on March 22, 1913, for the purpose of filling the following positions: Chief medical officer, Health Officer's Department, Port of New York, at a salary of $2,500, open to men only; Dietitian, Health Officer's Department, Port of New York, $900 and maintenance, open to women only; Assistant physician in Iola Sanatorium, West Brighton, Monroe Co., at a salary of $300 to $600 a year, open to men only; and Necrotomist in the office of the Coroner of Onondaga County at a salary of $1,000, open to men only.

**Public Health Service.**—A Board of Medical Officers will meet at the Bureau of the Public Health Service in Washington, on Monday, April 7, 1913, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and of good moral character. Fur further information or for invitation to appear before the Board of Examiners application should be made to the Surgeon General, Public Health Service, Washington, D. C.

**Dental Interne.**—The United States Civil Service Commission announces an open competitive examination for dental interne, open to men only, on April 2, 1913, for the purpose of filling a vacancy in this position at a salary of $600 per annum and maintenance in the Government Hospital for the Insane, Washington, D. C. As insufficient eligibles were secured from the examination for this position held on December 11, 1912, qualified persons are urged to enter this examination. Application should be made at once to the United States Civil Service Commission for examination Form 1312.

**Miraj Medical School.**—A teacher of physiology,

chemistry, physics, biology, and bacteriology, and preferably with a knowledge of *x*-ray work, is needed in connection with the Presbyterian Mission Hospital Medical School and Leper Asylum at Miraj, India. The hospital has a large and varied service and the equipment is good. A laboratory for teaching purposes is to be erected shortly. Further particulars may be obtained from Mr. Wilbert B. Smith, 600 Lexington Avenue, New York City.

**Prizes of the International Congress.**—On the occasion of the XVIIth International Congress at London next August, three prizes will be awarded: The Prize of Moscow, commemorating the XIIth Congress, of the value of 5,000 francs, will be awarded for work in medicine and hygiene or for eminent services rendered to suffering humanity; the Prize of the XIIIth Congress of Paris, having a value of 4,000 francs, will be bestowed for original work during the past ten years bearing upon medicine, surgery, obstetrics, or the biological sciences in their application to medical science; and the Prize of Hungary, instituted to commemorate the XVIth Congress of 3,000 crowns, will be given for a notable piece of work in medical science which has appeared in the interval since the last Congress. Nominations of candidates for these prizes are invited before June 1, 1913, and should be sent, together with examples of the work on which the candidacy is based, to the "Bureau de la Commission permanente des Congres internationaux de medicine, Hugo de Grootstraat 10, The Hague."

**Medical Faculty of the University of Minnesota.**—The personnel of the new medical faculty of the University of Minnesota, Minneapolis, was announced on February 18 by Dean Wesbrook of the Medical School. The reorganization has resulted in decreasing the force of instructors from 184 to 96, with 24 additional members to be selected from outside, the final number to be 120. Notices have been sent to all the members of the faculty that their resignations, which were submitted in a body to the President to be acted upon at his pleasure, have been accepted. The resignations will take effect on July 31, and the new appointments on the following day. The chief appointments are as follows: Professor of Public Health and Bacteriology and Dean of the Medical School, Dr. F. F. Wesbrook; Professor of Surgery, Dr. James E. Moore; Professor of Obstetrics, Dr. Jennings C. Litzenberg; Associate Professor of Pathology and Acting Director of the Department, Dr. Harold E. Robertson. The heads of the departments of anatomy, physiology, pharmacology, and pathology are still to be selected. The reorganization and the manner in which it has been effected hold out promise of a bright future for the school.

**Chair of Geriatrics.**—Dr. Ignatz L. Nascher of New York has been appointed Professor of Geriatrics in the College of Physicians and Surgeons of Boston, this being the first instance of the establishment of such a chair in any medical school, although lectures on the diseases of old age have been included in the courses of many.

**Röntgen Society.**—The ninth Congress of the German Röntgen Society will be held in Berlin on Sunday, March 30, 1913, directly following the meeting, also in Berlin, of the fourth International Congress for Physiotherapy on March 26 to 29.

**Age Limit for Doctors.**—The managers of the Montreal General Hospital at the ninety-first annual meeting held recently added to the by-laws of the hospital a regulation making compulsory the retirement of the attending physicians upon reaching the age of sixty-two years.

**Medical Schools Approved.**—The New York State Board of Regents on February 20 voted to recognize the following schools of medicine as meeting the requirements of the State: Dartmouth Medical School, Hanover, N. H.; Leland Stanford University College of Medicine, Palo Alto-San Francisco, Cal.; McGill University Medical Faculty, Montreal; College of Physicians and Surgeons, Baltimore.

**District Tuberculosis Hospitals.**—Believing that it is not only desirable but absolutely necessary that the State itself put forth much greater effort looking to the relief of suffering and the prevention of the spread of infection in tuberculosis if the disease is to be overcome, the New York State Board of Charities has recommended the establishment by the State of district hospitals for the treatment of early and curable cases of the disease on the plan of that at Ray Brook. To the local authorities should be left as a general rule the care of patients in the later and less hopeful stages of the disease. Sufficient hospitals should be provided to make possible the separation of the incipient and advanced cases of children and adults and of patients of good moral character from those of the alcoholic type, for instance.

**Resignation of Dr. Kunitzer.**—At a recent meeting of the New York County Medical Society the Comitia Minora reported that in its opinion, although Dr. Kunitzer had been found guilty of the charges against him, yet he had already been sufficiently punished by being deprived of the rights and privileges of the society for the last two years, and that it was therefore willing to accept his resignation without further question. The report of the committee was approved.

**The Plague at Teneriffe.**—Five fatal cases of bubonic plague were reported on February 27, from Teneriffe in the Canary Islands.

**Centenarians Dead.**—At the age of 103 years, William Redmond, a New Jersey farmer, died recently at his home in Oakhurst.

Mrs. Marcelline Leon of Los Angeles, Cal., died on February 27, at the age of 105 years, having been married only a few days previously.

**Deaths in New York City.**—During the week ending February 22, there was a considerable increase in the number of deaths in New York City, as compared with preceding weeks and with the same week of 1912. The total number of deaths was 1,836 with a rate of 17.83 per thousand, while last year there were 1,635 deaths with a rate of 16.49. The increase occurred in all the death groups and from practically all of the principal causes of death. Thus, the deaths from diphtheria and croup were double those reported from these causes in the same period of last year, and there was an increase of 47 deaths from lobar pneumonia, of 35 from organic heart disease, and of 23 from organic kidney disease.

**Diphtheria in School.**—Six cases of diphtheria among pupils of Public School 16 in Wiliamsburg, New York, have made it necessary to close up some of the classrooms.

**Bequests to Charities.**—By the will of the late Hunter Brooke of Philadelphia the sum of $5,000 is bequeathed to the Episcopal Hospital of that city for the endowment of a free bed in memory of the testator's parents; the sum of $1,000 is bequeathed

to the Kensington Hospital for Women, and sums of $500 each to the Philadelphia Home for Incurables, the Home of the Merciful Saviour for Crippled Children, and the Pennsylvania Training School for Feeble-Minded Children.

The Eastern District Hospital and Dispensary of Brooklyn, N. Y., receives a gift of $500 by the will of the late Mr. James S. Bearns of that city.

The Sharon Sanatorium of Sharon, Mass., receives $5,000 under the will of the late Miss Sarah E. Read of Boston.

A bequest of $25,000 is made to the University and Bellevue Hospital Medical College Clinic, New York, by the will of the late Mrs. Maria C. Tailer, in memory of her husband, William H. Tailer. The Home for Incurables, New York, also receives $7,500 in memory of the testator's father, and the New York Orthopedic Hospital receives $5,000.

The Montefiore Home receives $500 and Mt. Sinai Hospital $250 by the will of the late Mrs. Semon Bache of New York.

**Aschoff to Lecture.**—As previously announced, Prof. Aschoff will deliver the Cartwright lectures before the Association of the Alumni of the College of Physicians and Surgeons on March 12 and 15 at the New York Academy of Medcine, at eight-thirty o'clock in the evening.

**Medical Society Election.**—Tri-State Medical Society.—At the annual meeting held in Norfolk, Va., on February 20 to 22, the following officers were elected: *President,* Dr. Southgate Leigh, Norfolk; *Vice-Presidents,* Dr. Stephen Harnsberger, Catlett, Va.; Dr. E. Reid Russell, Asheville, N. C.; and Dr. J. H. Taylor, Columbia, S. C.; *Secretary,* Dr. Rolfe E. Hughes, Laurens, S. C.

Fox River Valley (Wis.) Medical Society.—The following officers were elected at the annual meeting held on February 18: *President,* Dr. F. Gregory Connell, Oshkosh; *Vice-Presidents,* Dr. Wm. Weber Kelly, Green Bay, and Dr. A. T. Nadeau, Marinette; *Secretary-Treasurer,* Dr. R. H. Sweetman, Green Bay.

Bee County (Tex.) Medical Society.—The annual meeting was held at Beeville on February 17, when the following officers were elected: *President,* Dr. Houston Neeley, Beeville; *Vice-President,* Dr. L. E. Parr, Beeville; *Secretary-Treasurer,* Dr. W. E. Sturgis.

**Obituary Notes.** — Dr. Norman Brigham Bailey of Haverstraw, N. Y., a graduate of Yale University, Medical Department, New Haven, in 1871, and a member of the American Medical Association and the New York State and Rockland County Medical Societies, died at his home on February 27, aged 65 years.

Dr. William H. Campbell of Kansas City, Mo., a graduate of Washington University, Medical Department, St. Louis, in 1856, died at his home on February 7, aged 83 years.

Surgeon Henry D. Geddings of the Public Health and Marine Hospital Service, a graduate of the Medical College of the State of South Carolina, Charleston, in 1880, and a member of the American Medical Association and the Medical Society of the District of Columbia, died at his home on February 13, aged 54 years.

Dr. Henry E. Locher of Grand Rapids, Mich., a graduate of the Long Island College Hospital, Brooklyn, N. Y., in 1877, a member of the Michigan State and Kent County Medical Societies, president of the Board of Health of Grand Rapids, and formerly coroner of Kent County, died at his home on February 9, from Bright's disease, after a long illness, aged 62 years.

Dr. Henry Francis Ballard of Chenoa, Ill., a graduate of the Rush Medical College, Chicago, in 1882, and a member of the American Medical Association and the Illinois State and McLean County Medical Societies, died at St. Francis' Hospital, Peoria, after a short illness, on February 7, aged 60 years.

Dr. John B. L'Hommedieu, First Deputy Health Officer of the Port of New York, and for eighteen years a member of the quarantine staff, died at his home at Rosebank, N. Y., after a brief illness, on February 21, aged 46 years. Dr. L'Hommedieu was born at Medina, N. Y., and was graduated from the New York University Medical College in 1890. After service at the Willard Parker Hospital and the hospital for contagious diseases on North Brother Island, he was appointed to Quarantine, serving as one of the three boarding officers and becoming an authority on yellow fever and other tropical diseases. He was a member of the American Medical Association and the New York State and Richmond County Medical Societies.

Dr. William Conrad Wile, A.M., LL.D., of Danbury, Conn., a graduate of the New York University Medical College in 1870, a member of the Society of Medical Jurisprudence, until recently editor of the *New England Medical Monthly,* and a veteran of the Civil War, died at his home on February 21, aged 66 years.

Dr. William A. Megrath of Loudon, N. H., a graduate of the Dartmouth Medical School, Hanover, in 1886, and a member of the New Hampshire State and Centre District-Merrimack County Medical Societies, died at his home after a short illness on February 12, aged 54 years

Dr. Minot A. Steele of Portsmouth, R. I., a graduate of the Albany Medical College, N. Y., in 1890, a member of the Rhode Island State and Providence District Medical Societies, and medical examiner of the district, died at his home on February 17, from blood poisoning as the result of the bite of a dog, at the age of 45 years.

The Right Hon. Lord Ilkeston, the only member of the medical profession in the English House of Lords, died on January 31, at the age of 72 years. As Dr. Foster and later as Sir Walter Foster, he was for many years professor of anatomy in Queen's College, Birmingham, and professor of medicine in the amalgamated Queen's and Sydenham Colleges. He was one of the founders of the Birmingham Medical Institute, for some time a member of the staff of *The Lancet,* and a member of the General Medical Council. In 1910, he was raised to the peerage with the title of Lord Ilkeston.

Dr. Alexander Mansfield Goodman of Brooklyn, N. Y., a graduate of the New York University Medical College in 1876, died at his home on February 19.

Dr. J. Edgar Ambler of New York, a graduate of the New York Homeopathic Medical College and Hospital in 1893, a member of the American Institute of Homeopathy, the New York State Homeopathic Medical Society, and the Academy of Pathological Science, and laryngologist to the Metropolitan Hospital and assistant surgeon to the Ophthalmic Dispensary, died at his home on February 24, from scarlet fever, aged 41 years.

# Obituary.

## PHILIP HANSON HISS, Jr., M.D.,

NEW YORK.

Dr. Philip Hanson Hiss, Jr., professor of bacteriology in the College of Physicians and Surgeons, Columbia University, New York, died at his home in this city after a long illness on February 27, aged 44 years. Dr. Hiss was born in Baltimore on September 17, 1868, and was graduated from Johns Hopkins University with the degree of A.B. in 1891, and from the College of Physicians and Surgeons, New York, in 1895. The following year he became assistant in bacteriology at the College, under Prof. T. Mitchell Prudden, and also alumni association fellow in pathology. In 1899 he was appointed instructor in bacteriology and hygiene and Alonzo Clark Scholar for that year; in 1903 he was made adjunct professor of bacteriology, and in 1906 a full professor with a seat on the medical faculty of pure science of the University. From 1896 to 1899 he served also as assistant bacteriologist in the Department of Health of New York City.

Dr. Hiss was a member of the American Medical Association, the New York State and Kings County Medical Societies, the Public Health Association, the Society of Experimental Biology and Medicine, the American Association of Pathologists and Bacteriologists, of which he had been vice-president since 1909, the New York Pathological Society, and the Harvey Society. Notable among his research work were his studies on the bacilli of the dysentery group, on the bacteriology of typhoid fever, and on the differentiation of typhoid and colon bacilli and of pneumococcus and streptococcus, for the staining of the capsules of which he had devised a stain. He also carried on investigations on the nature of immunity, and in collaboration with his assistant, Dr. Hans Zinsser, was the author of a widely used textbook on bacteriology.

# Correspondence.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE—CONFERENCE ON CLERICAL WORK—CIRCULAR OF BRITISH MEDICAL ASSOCIATION—HOSPITAL SUNDAY FUND—SECTION ON HISTORY OF MEDICINE—ODDITIES OF NOMENCLATURE—STREPTOTHRIX INFECTIONS—OBITUARY.

London, February 14, 1913.

Questions in the House of Commons having extracted the admission that the clerical work imposed on panel doctors was hardly justifiable, the commissioners hastened to invite those serving to a conference for Tuesday last. Nearly 100 attended and were so sympathetically received that they seem to be satisfied that relief will be granted by the issue of less ponderous books of schedules and certificates. Various other questions have been put with a view of showing shortcomings in the Act, but perhaps it would be wiser to neglect the lesser and consider only those which should be included in the promised amendments.

The British Medical Association has sent out a circular to all registered practitioners asking for information and opinions on the Insurance Act and the Regulations. This is in compliance with the recent determination of the special meeting of representatives. Practitioners are asked to say whether they are on the panels and if so willingly or not, if they are, so far, satisfied with the conditions and will renew the contract; or if not satisfied what alterations they desire. If not on the panel would they go on and how many insured persons have come for attendance although entitled to free advice from others. In case government should appoint whole or part time officials to treat the insured who in that area would be likely to accept the post.

At the Mansion House on Monday there was quite a crowded meeting of the Hospital Sunday Fund to consider resolutions brought forward for changing the constitution. The proposer complained that for five or six years there had been discussions and bickerings. He wanted the awards of the distribution committee to be considered at the annual meetings and any objection made to be investigated by an arbitration committee *ad hoc*.

The Hon. Sydney Holland undertook to reply. He said the constitution was drawn up many years ago and the resolutions brought forward would not remedy a single defect that had been alleged, but the council had appointed a sub-committee respecting some details. The Council was elected at the annual meeting and they chose the distribution committee from well known city men who were not partisans of any particular hospital. They tried to exclude any one who had a bee in his bonnet and the committee was about as strong as could be got together. Excess of expenditure in any hospital would be sure to be inquired into as would any complaints as to the grants made. So satisfied was the late Mr. George Herring that he left £600,000 to the fund. Until anti-vivisectionists intervened the decisions had always been received with gratitude by all. The reverend gentleman who brought forward these resolutions was really the mouthpiece of anti-vivisectionists who wanted a grant for a hospital of their own. Discussion was kept up for a couple of hours, after which each of the three resolutions offered was rejected by an overwhelming majority.

The recently formed Section (History of Medicine) of the Royal Society of Medicine has already produced contributions, more or less serious according to the views of the listeners, but none without interest. Sir William Osler, president, took the chair on January 27, when the medical allusions in Bacon's writings were talked of by Drs. G. W. Steeves, Raymond H. P. Crawford, and L. G. Guthrie. Dr. Crawford then showed by lantern slides in the epidiascope some "plague banners" such as were formerly carried in processions during epidemics. Tracing the custom as far back as the end of the sixth century, he made three groups according as the central figure was the Madonna, the Christ, or a plague saint, the last being most commonly St. Sebastian.

Mr. Doran showed by the epidiascope a number of obstetric forceps of the eighteenth century and described the distinctions between them.

Mr. A. G. R. Foulerton thinks streptothrix infections more frequent than is generally supposed. In his Milroy lectures, 1810, he expressed this opinion and referred to 53 cases investigated at the Middlesex Hospital in the previous 10 years. To these he can now add 25, making up a series of 78 in 13 years which he has communicated to the Surgical Section of the Royal Society of Medicine. He is convinced that this report seriously understates the frequency of streptotrichosis in ordinary

hospital practice. It only includes cases in which a streptothrix was obtained by culture on an artificial medium, or typical branching mycelium was identified in stained specimens of material. The list would have been longer if rod-forms or spores had been included, *e.g.* more cases of appendix infection would have appeared. One would hardly suppose that the results at the Middlesex Hospital are exceptional, at any rate as far as hospital practice is concerned, but to determine this question Mr. Foulerton collated this series with cases collected elsewhere in reference to the incidence as to age, sex, occupation, and sites of primary infection. Comparing on these points the 78 Middlesex Hospital cases with Arland's 109 and Rühral's 632, he finds nothing exceptional and suggests that the apparently large number found may have been due to the detection of early cases—especially of mouth and appendix infections. Now early diagnosis and operation should have an effect on the mortality. Among 40 cases of infection about the mouth only one death occurred and that was one of abscess of the parotid region which broke externally infecting the subcutaneous tissue at the side of the neck and thorax, death following from lung complication. Among 20 appendix cases there were six deaths. Of 14 cases of lung infection, nine died, two went to an infirmary in a hopeless condition, one was not traced, one is believed to have been cured and in the other the progress of the disease seemed arrested. The cured case was admitted under Sir A. P. Gould with abscess in the mamma on incising which fecal smelling pus escaped. A streptothrix was obtained in pure culture. Exploring further a sinus was found leading to a small cavity in the lung. No physical signs had been found. Discharge continued for a year but healed at last under large doses of iodide.

The arrested case was admitted with deep-seated ulcer on the tongue and a patch of dulness over upper lobe of left lung. Repeated scraping of the ulcer gave no streptothrix but the sputum yielded abundance, from which a vaccine was prepared and used for many months when the patient seemed quite well and there were no parasites obtainable from the sputum. A small indefinite area of dulness in the lung remained.

Mr. Foulerton dealt lucidly with the method of pathogenic action, differentiating two classes of the parasite and then with the recognized difficulties of accurate diagnosis. Certainty he felt was to be impossible unless definite, branched, mycelial elements, staining by Gram's method, are found, or unless the identity of the parasite is established by culture. This is why cases are overlooked and why he thinks our hospital statistics understate the frequency of the infection.

Mr. Henry Eales, senior surgeon of the Birmingham Eye Hospital and ophthalmic surgeon to several institutions in the Midlands, died on February 8, his sixty-first birthday. He had been vice-president of the Ophthalmological Society and of the Midland Medical Society. He contributed papers on his specialty to the *Ophthalmic Society's Transactions* and other periodicals.

Dr. J. P. Wilton, of Gloucester, where he had practised some sixty years, succeeding his father, who was Mayor of that city during the reform agitation and was also a doctor, died on the 12th inst. at the age of eighty-four. He took his M. R. C. S. in 1852. He held a conspicuous position and was connected with many public bodies in Gloucester and the county. For some time he also took part in the teaching at the Science and Art Department, South Kensington.

Dr. H. W. Hart, of Ealing, has met with his death "by misadventure," as the coroner's jury term it, having taking an overdose of an opiate on account of insomnia which supervened on the death of his wife after an illness causing him great anxiety.

Dr. William Carter, of Liverpool, died on the 2d inst, aged seventy-seven. He had for many years occupied a leading position as a physician and teacher. He graduated in science and law as well as medicine (M. B. Lond., 1864). He became, it seemed naturally, president of the Medican Institute, consulting physician to the Southern Hospital, the Eye and Ear Infirmary, and various other institutions. He was connected with the medical school as a teacher from the early part of his career and filled different chairs, but for the longest time that of materia medica and therapeutics on which he was regarded as a great authority. He was connected thus with the University from its foundation, also with the Tropical School, which he worked hard to promote. Besides these labors he took an active part in many social efforts. He retired only about four or five years ago, the profession as well as Liverpool being the poorer for his loss.

Dr. Alfred B. Duffin, late professor of medicine at King's College and physician to the Hospital, died on Monday, January 10, aged seventy-nine. He had previously held the professorship of pathological anatomy and of clinical medicine. He filled his curriculum at King's and Edinburgh Universities, where he took his M.D. He then went to Berlin and studied under Virchow.

## OUR PARIS LETTER.

(From Our Regular Correspondent.)

THE FIRST INTERNATIONAL CONGRESS OF COMPARATIVE PATHOLOGY—CYSTICERCUS IN DOMESTIC ANIMALS AND HUMAN TAPEWORM—TINEAS IN HUMAN BEINGS—AVIAN AND HUMAN DIPHTHERIA—RABIES AND RODENTS—ANIMAL AND HUMAN TUBERCULOSIS—ROUTE OF ENTRY OF TUBERCLE BACILLUS IN DIFFERENT ANIMALS—RADIOACTIVITY AND VEGETATION—RESOLUTIONS ADOPTED.

PARIS, January 15, 1913.

THE First International Congress of Comparative Pathology began its sessions October 10, 1912, in the large amphitheater of the Medical School, under the honorary presidency of the Minister of Public Instruction. The officiating president of the congress was Professor Roger who in a fine address showed the importance of comparative pathology in the progress of the medical sciences.

In the section on animal parasitology Morot read a paper entitled "Cysticercus in Domestic Animals in Relation to Tapeworm in Human Beings." He discussed the question of prophylaxis and advocated the careful inspection of all carcasses of beef and swine, after their slaughter in the abattoirs. This inspection should include the making of exploratory incisions into the chief sites of election of the cysticerus, which sites are the following: the masseteric, the pterygohyoid, and the cervical regions, the tongue, heart, diaphragm, etc. The speaker asked that a resolution be passed by the congress recommending that the public authorities should es-

tablish a rigid inspection of all foods destined for consumption in order that every possibility of infection might be eliminated. He also recommended that rural populations should be instructed as to the necessity of maintaining cesspools for human excreta, and as to the danger to domestic animals resulting from the deposition of these excreta on fields and pastures. Finally the public should be informed as to the dangers resulting from the use of insufficiently cooked beef or pork.

On the subject of vegetable parasites, M. Bodin presented a paper entitled "Tineas: Human and Animal." There are three kinds of tinea: favus, microsporia, and trichophyton. The clinical manifestations of human infection with any of these forms have been drawn in their larger features. Still points in detail are lacking. Little is known regarding the chemical exchanges and the toxic secretions that are associated with tinea infection. The treatment of these infections is well established. It is easy to cure by means of antiseptics tinea of the smooth surfaces, in which the parasites are superficial. In the case of tinea of the hairy scalp, the matter is not so simple, for until recent years it has been regarded as impossible to disinfect the roots of the hairs, or to mechanically obliterate these roots on account of the brittleness of the hairs. Since 1904 the use of radium according to the method first practised by M. Sabouraud has enabled one to accomplish the above ends. This method has served to form a worthy climax to the scientific work which has made the subject of the tineas one of the finest and most complete chapters in pathology.

"Avian and Human Diphtheria" was the title of a paper read by Professor Arloing. There can be no doubt of the transmission of this disease from birds to human beings. The affections that may be transmitted from men to birds are not always caused by the same microorganism. There may be a reciprocal contagion resulting in a pseudomembranous angina. The diphtheritic affections of fowls in which the Klebs-Loeffler bacillus is not the causative organism may cause a similar affection in human beings. The following preventive measures are recommended: the construction of well isolated dunghills; the prohibition of the use of the water obtained from cisterns that may have been contaminated by animals of the barnyard. It is important that children be not permitted to play with fowl. The curative treatment requires the use of the antidiphtheritic serum. All infected places should be disinfected, the infective foci should be destroyed, and the dead animals should be burned. Measures of prophylaxis in the human being require careful disinfection of the buccal, nasal, and pharyngeal cavities, but principally a careful toilet of the hands before meals.

"Rabies" was the subject of a report by Professor Babès of Bucharest. The canine origin of this disease, as generally recognized, has never been actually proved. It is possible that this disease may have originally developed in certain rodents, such as rats, bats, etc., for rabies is not rare in these small animals. It is thought nowadays that rabies belongs to the group of disorders caused by invisible microbes. Babès would hesitate to admit that the Negri bodies are the specific parasites of rabies. In fact this disease is caused by a filterable virus. The Negri bodies are nevertheless of considerable diagnostic value.

"Tuberculosis in Animals as a Source of Human Infection" was studied by Professor Calmette of Lille. Avian tuberculosis may infect, although rarely, the horse, the pig, the bat, the rat, the monkey, the sheep, and even man. It has been proved that bovine bacilli may play a rôle in the infection of human beings. Although statistics show that human infection with bovine bacilli may occasionally though rarely occur through the medium of milk, it is necessary to adopt sanitary measures to remove the cause of this contamination. Human tuberculosis may be transmitted to cattle.

"The Route of Entry of the Tubercle Bacilli in Different Animals" was the subject of a paper by Professor Vallée of Alfort. This route may be through the lungs, the digestive tract, or the buccopharyngeal region. In man the predominating type of contagion is by inhalation; this is also the type in the case of cattle kept in closed stables. Contagion via the alimentary tract occurs in cattle that are in pasture or that drink at the common pond.

"Radioactivity in Relation to Vegetation" was the subject of a discourse by M. Petit of Alfort. Many investigations have demonstrated the beneficial action of radioactivity upon vegetable life. The addition to an ordinary fertilizer of a double quantity of radioactive manure causes an appreciable increase in the crop and gives rise to interesting fluorescent phenomena. The radioactive manures bid fair to render an important service in agriculture.

The congress adopted the following resolutions: First a resolution in favor of the establishment in all countries of a society of comparative pathology, similar to the one existent in Paris. Second, the dissemination among farmers of a knowledge of the diseases of plants and of the most important measures in preventing or combating them. Another resolution introduced by M. Morot was the following: The inspection of meats should be a careful procedure carried out in all those countries in which it is at present incompletely done. There should be an efficient supervision in all abattoirs by competent individuals.

The next meeting of the Congress will be held in three years. The place has not yet been decided upon.

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## Progress of Medical Science.

### Boston Medical and Surgical Journal

*February* 20, 1913.

1. Medical Education and the Harvard Medical School. E. H. Bradford.
2. The Problem of Graduate Medical Instruction. H. D. Arnold.
3. Transfusion in the Treatment of Ruptured Tubal Pregnancy. R. M. Green.
4. Mental Symptoms Associated with Renal Insufficiency. M. L. Neff.
5. Ophthalmia Neonatorum; Administration Standards. H. C. Greene.
6. Hemangioendothelioma of the Temporal Bone. F. L. Jack. Pathological Report. C. B. Faunce.

3. **Transfusion in Treatment of Ruptured Tubal Gestation.**—R. M. Green believes that direct blood transfusion is a surgical procedure of considerable value in the immediate treatment of ruptured tubal pregnancy associated with excessive hemorrhage, and may to advantage be employed in such cases as soon as possible after the hemorrhage is checked, and under the original anesthesia. Even if the patient's life is not in imminent danger, such transfusion, in serious cases, at least does no harm, minimizes shock and expedites convalescence. In the technique of transfusion, if the Elsberg cannula be employed, it seems advisable not to apply a clamp proximally to the donor's artery unless the compression of the cannula proves

insufficient to control the flow of blood. It seems also advisable not to mobilize the donor's artery completely until the moment when the anastomosis is made, since by this method troublesome hemorrhage from minute arterial radicles may be avoided.

4. **Renal Insufficiency and Mental Symptoms.**—M. L. Neff calls attention to the facts that mental symptoms may be the earliest indications of renal insufficiency; that they are the frequent accompaniments of such a condition; that treatment directed to the underlying nephritis would in many cases ameliorate them; and that a critical analysis of the somatic basis of the psychoses would frequently transfer them from the somewhat mystical realm where they now lie into the domain of general medicine.

5. **Administrative Standards in Ophthalmia Neonatorum.**—H. C. Greene states that the efficient control of ophthalmia in the newborn depends upon the routine use of the prophylactic at lying-in hospitals, and, with few exceptions, in private practice; prompt birth returns; absolute adherence to the reporting law which requires immediate notification of the symptoms of ophthalmia neonatorum; and insistence by the health authorities on constant skilled nursing in all but the lightest cases, the specialist's help at the first suspicion of danger, and if this cannot be had in the parents' home, then prompt transfer of the baby, with mother if possible, to a hospital where expert nursing and special medical care are constantly available.

## New York Medical Journal

*February* 22, 1913.

1. The Diagnostic Significance of Pain in Tabes. A. McL. Hamilton.
2. A Study of Mortality in Four Thousand Feebleminded and Idiots. L. P. Clark and W. L. Stowell.
3. Contradictory Findings in the Wassermann Test. A. L. Wolbarst.
4. The Day Camp for Tuberculosis. A. P. Francine.
5. Maimonides the Physician. M. Kahn.
6. Functional Nervous Conditions. W. V. P. Garretson.
7. Sewage Pollution of the Great Lakes. A. J. McLaughlin.
8. The Colorado Method for the Examination and Care of Public School Children. M. E. Bates.

1. **Pain in Tabes.**—A. McL. Hamilton notes that pains are the most important indication of the commencing sclerosis of the posterior nerve roots, and may be of very early appearance, constituting the only dominant or even apparent symptom for perhaps even ten or twelve years; but the author doubts if there are many cases in which some of the lost reflexes may not at the same time also be detected, especially after a year or two. The severity of the peripheral pains, however, does not equal the socalled abdominal or thoracic crises which are characteristic of tabes and are erroneously attributed to other conditions, often leading to improper medical treatment or surgical interference. The likelihood of error is also increased by the fact that these are of early appearance in one-third of all cases of tabes, and this may be uncomplicated for years. Crural neuralgia of an explosive type is a tabetic symptom, and when it is associated with retraction of the testicle it has led to the delusion that a calculus exists. Two forms of occasional pain may resemble those due to disease of the posterior columns. These occasional pains are the cramplike abdominal pains symptomatic of arteriosclerosis of the big mesenteric artery, and the intermittent claudication due to arteriosclerosis, as well as to tobacco toxemia. In the former the duration of the pain is not so protracted nor is the pain so intense as in true tabes, while the tonic contraction in claudication is the chief feature, and the distress is nearly always confined to the posterior leg muscles. There are anomalous cases, however, when the pains are most extensive in the course of the crural nerve and the muscles it supplies. In all cases of trunk pain of doubtful nature, an effort should be made to investigate a possible history of earlier sensory disturbance, which in true tabes involves the lower extremities. By many clinicians the distinctive character of the fulgurating pains of the lower extremities is considered to be sufficient without the verifying accompaniment of lost pupillary reflexes and absent knee jerks.

2. **Mortality in the Feebleminded.**—L. P. Clark and W. L. Stowell believe that segregation is the ideal remedy for this condition, as it runs counter to no moral, religious, or social law or custom. The practical objections are the enormous expense in providing proper segregation facilities, as the State is now greatly overburdened by taxation in caring for the wards it already has under custodial care, and it is doubtful whether the public can be induced freely to meet the problem in this manner, as it would require ten times the number of institutions we now have. As regards sterilization of the unfit, it is pointed out that a very earnest campaign of education and proof of the harmlessness to the individual is necessary if this plan is to be put in general practice and prove adequate to the size and importance of the problem. At present the laws governing the same in the different States are almost void owing to the general distrust of the whole procedure. Legislation has plainly outrun public sentiment in this direction. The authors believe in the effectiveness of this preventive measure and that it works no harm to any concerned. Another measure is the restriction of the marriage laws so there may be no mating of the unfit. Aside from the fact that the unfit often have little need and infrequently invoke the right of marriage license to propagate, this latter rational but Utopian scheme interests society but little at present. Love in its protean form not only laughs at locksmiths, but gives little heed to social rules and customs running counter to its desires.

3. **Contradictions in the Wassermann Reaction.**—A. L. Wolbarst concludes that: (1) The Wassermann reaction is dependent for its result on the skill and knowledge of the serologist. (2) The results of the test depend in great measure on the perfect standardization of the reagents used; these are subject to variation in the hands of different serologists. (3) As a result of these differences, diversity in results is not infrequent, but insufficient attention has hitherto been given to this particular feature of the reaction. (4) It is a gross error to accept the findings of one serologist as conclusive, particularly if his result is positive and the diagnosis is dependent on his report; his work should be checked up by one or more equally competent workers. (5) If two or more competent serologists report on a given serum, the majority opinion may be accepted as fairly conclusive; frequent reexaminations are always of advantage to the patient. (6) Of thirty-seven cases thus studied for discrepancies, agreement of findings took place in twenty-six cases (70 per cent.); absolute contradiction of findings took place in five cases (14 per cent.); and slight disagreements took place in six cases (16 per cent.). (7) All mention of results of the Wassermann test, in the literature or elsewhere, should be accompanied by the name of the serologist who made the test, in order that the measure of accuracy and skill employed may be estimated. (8) The serologist should be selected with the same care and caution as is exercised in the selection of a consultant or expert in any other branch of medical science.

## Journal of the American Medical Association.

*February* 22, 1913.

1. The Interpretation of the Results of the Wassermann Test. C. F. Craig.
2. Vaccination and Local Anaphylaxis. J. H. Barach.
3. Thymus Tracheostenosis and Thymus Death with Report of Cases. A. Crotti.
4. An Experimental Study of Milk Coagulation in the Stomach, Together with Clinical Observations on the Use of Raw and Boiled Milk. J. Brennemann.
5. The Etiology and Treatment of Acne. E. D. Chipman.
6. Transduodenal Lavage. Treatment and Report of Some Cases of Chronic Diseases. M. E. Jutte.
7. Death Following the Administration of Phylacogen (Schafer). F. C. McLean.
8. Trachoma. Its Prophylaxis and Therapy. W. H. Harrison.
9. The Serpent's Tooth in Formaldehyde. W. E. Morgan.

3. **Thymic Tracheostenosis and Thymus Death.**—A. Crotti reports two cases of this condition in addition to the five that he has already reported. One of the two patients was an adult, the other a newborn infant; sudden death occurred in both. What may be called a latent thymus hyperplasia may occur in children and not come under the surgeon's care. Sudden death may occur without prior symptoms, but there are generally vague respiratory troubles and other signs of ill health. Certain cases of asphyxia of the newborn are explained only in this way. The most striking symptom of the condition is dyspnea, labored respiration or severe choking spells, often alarming to witness. Tracheotomy is useless with the present style of short tubes and longer ones should be provided with every tracheotomy set. The dyspneic symptoms usually appear early and diminish after the second year of life, rarely appearing later. Pressure on the windpipe by the enlarged thymus occurs either at the superior opening of the thorax (mostly in children) or, especially in adults, between the brachiocephalic trunk and the common carotid. It is usually shown by the autopsy, but in some cases it is not shown, and the author accounts for the latter by the irritation of the inferior laryngeal nerve causing spasm of the glottis. In such cases tracheotomy might be useful. In still other cases direct pressure on the base of the heart, affecting the heart ganglia, may be the cause of sudden death. There are, of course, other causes—stridor and respiratory spasm, such as are caused by adenoids and enlarged glands—and these causes must be considered in the diagnosis. Thymus enlargement frequently accompanies hyperthyroidism and simple goiter, but its relations to the thyroid are not clear.

4. **Boiled and Raw Milk.**—J. Brenneman notes that raw mik and boiled milk are clinically very different foods; that the most striking difference between them as shown experimentally is in their reaction to rennin; that the casein of raw milk, unless modified so that it will not form hard and large coagula offers serious difficulties in digestion that are not present in boiled milk; and lastly that these differences between raw and boiled milk should always be borne in mind in comparing clinical, therapeutic, and experimental results in infant-feeding.

5. **Etiology and Treatment of Acne.**—E. D. Chipman believes that bacteria do not figure in the production of acne unless the sebaceous ducts are occluded. The bacteriological flora of acne is of no importance except in treatment by vaccines, and vaccine treatment is not necessary if one is able to provide for the drainage of the ducts. The logical treatment of acne is local treatment aimed at the proper drainage of the sebaceous ducts, and general treatment that will develop an increased tone in the skin.

8. **Treatment of Trachoma.**—W. H. Harrison states that the surgical treatment of this condition is comprised mainly in expression, which benefits more by the increased and quickened blood and lymph supply it induces than by the small quantity of trachoma material removed. Hot applications after expression are more useful than cold ones and a drop of a 25 per cent. solution of argyrol or some bland oil may be put in the eye and the glued lids should be carefully cleansed every morning. After the acute effects of expression subside, in from five to seven days, and there is no further secretion, inflammation or gluing of the lids, they should be everted and the whole of the conjunctiva of the fornix and palpebral surfaces firmly and rather rapidly rubbed with a smooth pencil of copper sulphate, and this must be repeated daily to secure the best results, care being taken to prevent any traumatism of the corneal epithelium. Assuming that the true principle of the treatment of trachoma is often-repeated acute hyperemia in all the conjunctiva in which there is active trachoma, the copper stick should come in contact daily with all this surface. If thorough expression has been done properly and all secretions are checked before using the copper sulphate, the pain of the application will be gradually lessened and cease but will appear again if, after having been left off, it is begun again. Copper sulphate should not be used when there is a corneal ulcer, an inflammation, iritis, or acute exacerbation, until these have been allayed by proper treatment. Lotions are not indicated and the copper stick should not be used too vigorously or beyond producing the desired therapeutic hyperemia. Ointments and lotions are not, in the author's opinion, as effective as the copper stick.

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## The Lancet.

*February* 15, 1913.

1. The Paths of Infection in Genitourinary Tuberculosis. K. M. Walker.
2. Appendicitis; a Plea for Immediate Operation. E. Owens.
3. The Remote Results of Tonsillotomy and Tonsillectomy: An Analytical Scrutiny of 220 Unselected Cases. H. Whale.
4. An Operation for Hypospadias. A. Edmunds.
5. On a Case of Addison's Disease in a Boy Aged Ten Years. F. Langmead.
6. Polycystic Disease of Kidneys: Remarkable Persistence of Functions in Two Cases in Adults. H. Rischbieth and C. P. C. De Crespigny.
7. Note on a Case of Chronic Internal Hydrocephalus. J. Rae.
8. The Action of Scharlach R. Upon *X*-Rayed Skin. J. O. W. Barratt.

1. **Paths of Infection in Genitourinary Tuberculosis.**—K. M. Walker notes that tuberculosis of the testicle, in the great majority of cases, is but a single manifestation of a disease which is affecting the urogenital tract at large. It appears that infection of the testicle takes place in tuberculosis, as in gonorrhea, by means of the cord and not by the blood stream. Cases of hematogenous infection do occur but they are few in number. The evidence in favor of the frequent occurrence of a descending genital tuberculosis may be tabulated as follows: *Clinical evidence:* (1) It is extremely rare to find tubercle of the epididymis without discovering some indication of disease of the prostate or the vesicles. (2) Prostatic tubercle is not infrequently found without any lesion of the testicle. (3) The appearance of a tuberculous epididymitis is often preceded by symptoms of prostatitis or vesiculitis—the socalled prodromi of tuberculous epididymitis. (4) The earliest signs of tuberculous disease are found at the lower pole of the epididymis. This is the first position which opposes the line of march of the invading organisms. (5) Tuberculous disease of the testicle is analogous to acute infections which are known to have been produced by extension from the urethra. The ordinary type of tuberculous epididymitis has no analogy to the hematogenous orchitis of mumps. *Pathological evidence:* (1) Lesions of the testicle without disease of the prostate are rare, whereas tuberculous lesions of the prostate are not infrequently found unaccompanied by disease of the testicle. (2) When tubercle of the testicle is found in association with tubercle of the prostate, the lesions in the prostate generally have the appearance of being older than the lesions in the epididymis. (3) Tuberculous nodules in the lower pole of the epididymis usually appear older than those in the upper pole. They are the first to soften and break down. *Experimental evidence:* (1) Microorganisms and inanimate granules are rapidly absorbed from the urethra and carried to the testicle. (2) A tuberculous epididymitis may be experimentally obtained by inoculating the urethra after having damaged one of the testicles.

2. **Immediate Operation in Appendicitis.**—E. Owen states that appendicitis is different from most other acute diseases in that one cannot tell exactly what is the state of affairs without making an incision. It is generally considered that operations done on about the fifth or sixth day of the disease have a particularly high mortality. The explanation is simple; precious time has been lost. There is apt to be a fool's paradise stage in appendicitis, and it may come early or late in the course of the disease. This

stage is characterized by a disappearance of the pain and a remission in the pulse and temperature. What has happened is that some deeply-seated tension has been relieved and quiet has been restored, at least for a time. The continued rigidity of the abdominal muscles (which probably is still marked) is evidence to the surgeon that the storm-warning must not be lowered, although some heavy clouds have been rolled away and the sky looks brighter. It does not at present seem to be generally realized that the pulse and temperature of a person may be normal in spite of the appendix being gangrenous or perforated; that in some of these stealthy and rapid cases there is absolutely no fullness in the fossa; and that if the chief pathological change in the appendix is gangrene there need be very little local tenderness—for there is no sensation in dead tissue; that as there is no sensation in a mortified appendix, there need be no reflex rigidity of the abdominal muscles covering the fossa; that there being no excitement of pulse or temperature, and little or no local pain or tenderness, the patient may make light of his trouble and that his aspect may be deceivingly cheerful. Thus, in the most dangerous class of cases of appendicitis there may be but little either to cause anxiety or to attract serious attention.

3. **Remote Results of Tonsillotomy and Tonsillectomy.**—H. Whale finds that the disadvantages of tonsillotomy are: (1) The initiation of an infection, whether manifesting itself as tonsillitis, lymphadenitis, or both. Such sequelæ are more likely if a very free and deep removal has been performed than if only a moderate amount of the tonsil has been removed. (2) Recurrence of the trouble for which the operation was performed; except in the case of voice troubles, when recurrence is no more probable than after tonsillectomy. The disadvantages of tonsillectomy are: (1) A risk of serious or even dangerous hemorrhage at operation. (2) A risk of harmful deformity supervening later; the deformities most likely to cause harm are adhesion of the posterior faucial pillar to the posterior pharyngeal wall, and overgrowth of the plica triangularis. (3) A risk of voice troubles supervening later, even without any causative deformity. To any patient who requires operation for some other reason, who has never had any voice trouble, and whose livelihood or occupation depends on the use of the voice, tonsillectomy should be urged with caution. Thus it would appear that tonsillectomy is the more dangerous operation. But with the single exception of voice troubles, it is more likely to permanently cure the complaint for which advice is sought; notably so in the case of tonsillitis or lymphadenitis; moreover these two infections are never initiated by tonsillectomy. It is important to eradicate the lower pole.

5. **Addison's Disease in a Boy Aged Ten Years.**—F. Langmead reports the case of a boy aged 10, who died four hours after admission to the hospital. On the evening before, vomiting had started abruptly, accompanied by restlessness, and followed by loss of consciousness. On admission he was seen to be unconscious, the elbows, wrists, and knees being rigidly flexed, and the fingers extended. The temperature was subnormal and the pulse rapid and weak. The abdomen was retracted. The knee-jerks were present, and the plantar response was flexor. Frequent convulsive seizures occurred until death. The case gave rise to much conjecture as to its nature, and remained undiagnosed until the post-mortem examination. A possible explanation appeared to be meningitis, but the rapidity of its course was against this view. Moreover, the optic discs were normal, and cerebrospinal fluid withdrawn by lumbar puncture showed no abnormality beyond absence of reducing power. The possibility of uremia was excluded by the fact that a catheter specimen of urine was normal. Acetone was not present, an observation which excluded cyclical vomiting from the diagnosis. The pigmentation amounted to no more than a slight diffuse brownness of the skin, including that of the abdomen, and would not give rise to comment in a child of the poor at the end of the summer. Later it was learned by careful questioning of the mother that the pigmentation had been noticed to have gradually deepened for about 12 months, and that the boy had been subject to attacks of diarrhea for several months, and had been slowly getting weaker. The boy's father had died from phthisis ten years before, and two aunts and one uncle of his mother also died from the same disease. At autopsy the body was that of a somewhat wasted boy, the skin showing slight general pigmentation without maculæ. The suprarenal glands were fibrocaseous, almost throughout, merely a narrow margin of healthy gland tissue being discernible, and this only in a few areas. The fibrosis had spread into the adjoining posterior abdominal parietes, and must have involved the sympathetic ganglia, though these were not recognized. Caseous glands were found in the portal fissure and two caseous foci in the lowest lobes of the lungs, near the roots, probably representing glands also. Microscopically the tuberculous nature of the process was apparent.

8. **Action of Scarlet-R upon X-Rayed Skin.**—J. O. W. Barrett has found that in old *x*-rayed skin of the rabbit's ear the injection of a solution of Scarlet-R is followed by epithelial proliferation, which may reach an extreme degree, provided the destructive effect of the *x*-radiation has not been excessive. A marked tendency to sloughing is observed when Scarlet-R is injected into old *x*-rayed tissues, the tendency being greater the more marked the extent to which the appendages of the skin have been destroyed.

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## British Medical Journal.

*February* 15, 1913.

1. Appendicitis: A Plea for Immediate Operation. E. Owen.
2. The Function of the Appendix and the Origin of Appendicitis. E. M. Corner.
3. Carcinoma of the Colon. J. Cunning.
4. The Results of Excision of the Hip-Joint in Thirty-four Cases of Suppurating Tuberculous Disease. C. A. Morton.
5. Note of a Series of Fifty-five Cases of Suprapubic Prostatectomy, with Four Deaths. A. Fullerton.
6. Some Problems Connected with Rheumatoid Arthritis. F. G. Thomson.
7. The Occurrence of Acute Pneumonia during Treatment with Arsenic. F. Parkes Weber.
8. Three Cases in Midwifery Practice. J. Reid.

1. **Immediate Operation in Appendicitis.**—By E. Owen. (See page 446.)

2. **Function of the Appendix and Origin of Appendicitis.**—E. M. Corner notes that lymphoid tissue is the characteristic feature of the cecal apex. The vermiform appendix of man is represented in the vertebrate kingdom by a mass of lymphoid tissue, situated most frequently at the cecal apex. As the vertebrate scale is ascended, this lymphoid tissue tends to be collected together into a specially differentiated portion of the intestinal canal, the vermiform appendix. The vermiform appendix of man is not, therefore, solely a vestigial structure, though it undoubtedly represents the terminal part of the cecum. On the contrary, it is a specialized part of the alimentary canal, Nature having made use of a disappearing structure and endowed it with a secondary function by giving it lymphoid tissue to protect the body against the micro-organisms in the ileocecal region. One well-known property of lymphoid tissue is that by producing leucocytes it is actively protective to its possessor against foreign invaders. Situated in a blind tube in whose lumen are represented types of the organisms inhabiting the large bowel and their fermentations, the lymphoid follicles must have a great deal of work to do, more even than the tonsils, to which the appendix has been likened. The tonsils undergo fibrosis or chronic inflammation without the occurrence of an acute attack. In a like manner similar changes occur in the appendix, but unfortunately there is a very marked difference. Fibrosis of the appendix interferes with the

efficiency of its peristaltic action and the tube becomes incapable of emptying itself. By these means a vicious circle is established; the more pabulum which remains the more will bacteria flourish, and the more likely is it that the chronic inflammation will progress, and the organ become still more incapable of performing its own evacuation. Such a condition may he aptly called appendicular constipation. The inspissation of the contents will lead to the formation of an appendicular calculus or fecal concretion, which may be likened to scybala elsewhere in the large intestine. The results of chronic appendicitis may be at times far more extensive than this. The fibrosis, with its subsequent contraction, leads to further disappearance of the lymphoid follicles and impairment of the muscular action. The appendix consequently becomes an inert breeding ground for microorganisms, and if they escape into the cecum the multiplication is continued there.

6. **Problems Connected with Rheumatoid Arthritis.**—F. G. Thomson discerns a strong family resemblance between Raynaud's disease, rheumatoid arthritis, and exophthalmic goiter. Whatever its relationship to other diseases, rheumatoid arthritis presents in itself many points of interest and many features of obscurity. On the clinical side a wide field of investigation is afforded in the systematic and careful consideration of family history and individual peculiarities in so far as they indicate a personal factor predisposing to the disease, together with precise investigations as to the nature and significance of the so-called accessory symptoms as they affect the nervous and vascular systems respectively. On the pathological side one requires to know what relationship, if any, exists between the various foci of infection which frequently precede the disease and the subsequent phenomena, and more especially the importance of gastric and intestinal toxemia as an etiological factor. It is possible that expert bacteriological examination of the flora of the gastrointestinal tract in a series of cases might throw considerable light on this aspect of the question.

7. **Acute Pneumonia Occurring During Treatment with Arsenic.**—F. Parkes Weber reports a series of cases of pneumonia occurring among childen and other young persons undergoing arsenical treatment. He believes that the arsenic, while predisposing toward pneumonia, also exerts a favorable effect on the reaction of the body toward the disease—that is to say, that when pneumococcal pneumonia occurs in patients who are being treated with arsenic the pneumococcal infection is quickly and successfully resisted. Perhaps later on some arsenical compound like salvarsan or neosalvarsan will be found to have a beneficial effect in pneumococcal pneumonia or other pneumococcal infections, and it might be worth while to try the effect of arsenical preparations, in regard to experimental pneumococcal pneumonia, in some of the lower animals.

## Berliner klinische Wochenschrift.

*February* 10, 1913.

**Narcolepsy.**—Klieneberger relates a case of this mysterious affection, and describes the seizures to which the patient was subject under four heads. First, he slowed up suddenly in walking but did not stop; in a few minutes he quickened up to his usual speed. Second, his acts were suddenly arrested midway, the muscles not relaxing. This inhibition would last for a few seconds when the intended movement would be completed. Third, there was arrest as before, whereupon repeated efforts were made to execute the movement with no actual progress. Fourth, there was a much more complicated attack. A movement was arrested, as before; whereupon peculiar movements were made with the fingers, which were spread apart, or used in feeling and handling objects, as in delirious conditions. There was no change of color during the attack. There were no tics save for an occasional grimace and nictitation, but these were also present to a slight extent under ordinary conditions. In general the neurologic examination was negative. The patient, who was aged 20, could not have been an epileptic, as the attacks could not be confounded with *petit mal*. There was absolutely no clouding of consciousness, but simply an inhibition of motion. As to the psychogenous origin this was by no means evident. The patient was absolutely free from hysteria, having neither the stigmata nor the constitution. The condition is perhaps best explained by the theory of a special neurosis. Characteristic was the extreme periodicity, and patient also suffers from periodic headaches, migrainoid with scotomata. The narcoleptic attacks amount to as many as 100 attacks daily.

**Lepra Bacilli in the Blood.**—Rabinowitsch has made a somewhat startling discovery in regard to the bacteriology of leprosy which appears to show that our modern knowledge of the heredity of the disease may require revision. The author studied more especially the blood of miscellaneous lepers and fetuses, making use of Uhlenhuth's antiformin method. The finds in patient's blood were not constant, and it was necessary to make repeated examinations as a rule. Positive results were obtained in six lepers and one fetus. These appear to show that the bacilli may pass from the maternal blood directly into the fetal circulation, and that it is possible for the child to inherit the disease, although as in the case of tuberculosis this mode of transmission may be rare.

**Methyl Alcohol Poisoning and the Action of Toxic Peptides.**—Segàle refers by the term toxipeptides to any sort of meat or other nitrogenous food poison. The latter play more or less of a rôle in cholera, ptomaine poisoning, sausage poisoning (bacillus botulinus) and the like. The general picture of these poisonings resembles somewhat intoxication from methyl alcohol. The author lays stress upon the fact that the latter is less toxic than ethyl alcohol, but is not quickly oxidized into harmless bodies. In like manner other theoretically toxic substances may be rendered comparatively harmless. Another element to be reckoned with is anaphylaxis. A second exhibition of methyl alcohol to an experiment animal may cause a much more severe reaction than the first and this fact of course complicates many cases of peptide poisoning. A strong point of difference between the two types of poisoning is as follows: Methyl alcohol is a highly diffusible substance, while the toxic peptides are the reverse. The author touches on the subject of "spontaneous" intoxication. In the case of a man not known to have taken poison a refractive method used by the author in doubtful cases justified the clinical diagnosis of wood alcohol poisoning. Other biophysical or biochemical tests of the patient's serum refer to osmotic tension, concentration of ions, and electric conductivity. Doubtful cases may also be tested by anaphylaxis.

## Münchener medizinische Wochenschrift.

*February* 11, 1913.

**Painless Confinements.**—Voll describes a method which he is employing with success. He regards the half-sleep as unsuitable for private practice, Jaschke is right in not wishing to eliminate maternal consciousness. The author used to give a large dose of morphine through the action of which the women were not fully conscious of the pains, which as a result seemed to be better. They were also less frequent, something not desired, but still serviceable in the protection of the perineum. When the expulsive period has arrived the author simply injects directly into the perineum a mixture of cocain and adrenalin. He first disinfects the perineum with benzine. The needle is inserted 2 cm. to one side of the raphe and the solution directed toward the latter. Laceration seldom oc-

curs and when it does suture may readily be applied. The placenta follows in about an hour without serious hemorrhage.

**Familial Incidence of Atheromatous Tumors.**—Schneider mentions the increasing number of diseases and anomalies recognized as hereditary. Recently he has had the opportunity of tracing wens through five successive generations of a stock. But little is said of the clinical aspect of the wens—their number, size, location, etc. From the great frequency of these formations it should be difficult to prove that incidence represents heredity, but this he believes he has done because of the peculiar selection shown in family members. The author himself belongs to the stock and this gives him unusual opportunities for observation. The first generation is represented by a woman with atheroma. In the table given all descendants under the age of 12 are omitted. In the second generation are two sons, one of whom had the anomaly. The other, with his posterity, remained free. The male of the second generation had five sons, who remained unblemished, and four daughters, three of whom exhibited wens. This alternation of sex in the descent is significant. Of the three marked women of the third generation one left no descendants, and not one of the five males handed down the anomaly. One of the affected women had a son with wens, but the other upset the alternation of sex in part because her sons escaped, with the exception of a twin whose mate was a female. Two other daughters were also victims. One son, himself free, begot a son, sole representative of the fifth generation, who has the familial ailment. The male of the second generation had a progeny, of which 33 1/3 per cent. were affected and the prolific woman in the third generation had 40 per cent. of her children involved. The only father in the fourth generation shows thus far 20 per cent. involved. With sufficient fertility the family might be mendelized. It is, of course, possible that not all the atheroma cases were inherited.

**The Pocket Flashlight in the Diagnosis of Hydrocele.**—Mayer speaks of the difficulty in diagnosis in hydrocele at its earliest stages when the light available is not sufficient. As nearly every rural practitioner carries one of these lamps in his pocket he can use it for testing the transparency of a tumor which appears to be solid. The incandescent lamp should be placed close behind the scrotum, whereupon if hydrocele is present the shadow of the testicle is seen sharply contoured against the brighter area of the fluid. The ordinary bulb for illumination may also be utilized if the skin which touches it is protected by cloth. The larger the hydrocele the more brilliant the test.

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## Deutsche medizinische Wochenschrift.

*February 6, 1913.*

**Supersensitiveness to Arsenic.**—Kaufman, commenting upon Straubli's recently reported experience of arsenicism after injections of cacodyl states that he has also witnessed the local but never the general phenomena. The phenomena were quite constant. After from 2 to 4 injections had been sustained without any reaction whatever, every subsequent injection caused the production of a large firm infiltration *in situ* the size of a silver dollar or thereabout. This felt warm and itched violently, was not, in the least painful and underwent involution with desquamation in the course of a few days. The phenomenon suggested in every way not simple irritation but anaphylaxis—chiefly of course because the former was not in evidence at the outset.

**The Normal Body Temperature of the Child.**—Dr. Dora Fraenkel has studied this subject with especial reference to the influence of rest and motion. She introduces the well known fact that healthy children sometimes run a slight temperature. Jacobsen saw subfebrile temperatures last for weeks and months which did not subside until the tonsils were removed. Avellis never saw this sequence and his opinion of some of the subfebrile rectal temperatures was that they were due to local conditions—as the action of heat forming bacteria. Czerny believes in a "visit temperature" in sensitive children and Pfaundler thinks an elevated rectal temperature is normal in some neurolymphatic children. Authors also differ notably in what constitutes normal temperatures. The limits vary from 36.8° to 37.9°. An evening temperature of 37.5° appears to represent the average. The author's own work in the Borgsdorf Hospital for Children (Berlin) gives surprising results, for the supposedly afebrile children nearly all show an evening temperature of from 37.6° to 38.5°. A series of 163 supposedly nervous or scrofulous children chiefly between the ages of 5 and 13 furnished the material which moreover was quite free from enlarged tonsils and adenoids. Deep rectal temperatures alone were taken. With regard to the influence of motion and rest, the former in the form of play and exercise can cause temperatures of over 38° in all children. This as a rule subsides after resting. Neuropathic children are more responsive in this respect than the non-neuropathic. Children with positive von Pirquet behave like intact children in this respect. At best we should not find over 37.2 rectal in the healthy child.

**Significance and Practicability of the Prophlaxis and Treatment of Diphtheria.**—Braun, in the course of a long article makes the following points. In regard to the claim that the prophylactic action is very brief he asserts that at least three weeks immunity is conferred to a certainty, after which in individual cases it may be prolonged, say up to three and four months If new cases develop during this period they are extremely mild. In regard to anaphylaxis, it has become a bugbear with many institutional physicians because it antagonizes the idea of prophylactic injections. They mostly prefer on that account to reserve the first injection until the disease has actually been contracted. The author can only oppose to this argument that he sees no anaphylaxis in his practice as far as a single prophylactic injection is used. Anaphylaxis is to be feared when in the course of a year a number of injections are given at considerable intervals. This necessity cannot often occur. In subjects who have at intervals anginæ which are diphtheretic or diptheroid, a small therapeutic dose will do better than a large immunizing dose. The argument against serotherapy which is most difficult to answer is the great cost of the serum and of its exhibition. Proper prophylactic injections may greatly cut down expenses. The author proved this in connection with his own division of the Friedrichshain Hospital (Berlin). The organization of the official and semi-official medical men with respect to the carrying out of a definite campaign against the disease is, of course, of great assistance.

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**Diaphragmatic Hernia.**—K. M. Vogel concludes that diaphragmatic hernia is much commoner than is generally supposed, and may exist indefinitely without giving rise to symptoms. Dextrocardia and physical signs suggesting those of pneumothorax should always cause the possibility of this condition to be thought of and lead to careful radiographic study of the thorax.—*American Journal of the Medical Sciences.*

**Rôle of the Lipoids in Narcosis.**—B. Kramer finds that the intravenous injection of five to thirty cubic centimeters of a 5 or 10 per cent. emulsion of lecithin, depending upon the size of the animal used, does not interfere with the induction of anesthesia, and this can be accomplished as readily in animals thus injected as in controls. In six out of nine experiments lecithin had no effect upon the rapidity with which the various phenomena which indicate the animal's recovery from the effects of the anesthetic appeared. These experiments do not bear out Reicher's assumption as to the cause of the lipoidemia, and the explanation of this phenomenon still remains an open question.—*Journal of Experimental Medicine.*

## Insurance Medicine.

**The Upward Trend of Mortality in Middle Life and Old Age.**—At a meeting of the American Association for the Advancement of Science, Section I., at Cleveland, Ohio, January 3, 1913, Mr. E. E. Rittenhouse, conservation commissioner of the Equitable Life Assurance Society of the United States, spoke on the marked increase in the death rate of men of 40 years and over during the past twenty or twenty-five years, and quoted some interesting statistics in proof thereof. He enumerated some of the causes of this increase and how unnecessary it was, and said that every postponable death among policyholders increased the cost of life insurance. The mortality gains—which are the annual amounts by which the expected death claims exceed the actual claims—go into the surplus from which dividends are paid to stock and policyholders. Therefore, if the present mortality rate among policyholders could be materially lowered, the cost of insurance to them would be correspondingly reduced.

The Equitable Life Assurance Society, and three or four other companies have assisted by organized effort and actual expenditure of money, in advancing the campaign to promote longevity; and it is urged on all insurance companies to do the same. In infancy, childhood, and early adult life, where the proportion of policyholders is smaller, the death rate has been decreasing for years; while in middle life and beyond, where the larger proportion is found, the mortality trend appears to have been steadily upward, especially in the cities. The mortality experts of the great life insurance companies, recognizing the advancing ratios in the older periods from degenerative causes, have instituted more severe medical examinations at these ages, and in some instances, advance in premiums. But only two companies are giving especial attention in their conservation work to the excessive life waste in these older groups. Physicians and others who have studied this angle of our mortality tendencies recognize the fact that the important and hardest-worked organs of the body are wearing out and breaking down too soon, and that the upward trend in the general death rate in the later age periods is due to the rising mortality rate from the chronic diseases of these organs. Included in this group are apoplexy, paralysis and diseases of the heart, circulatory system, kidneys, and liver. The estimated deaths in 1910 from these diseases in the United States (based upon the registration area) were 367,700. In sixteen cities, from 1880 to 1910, the increase in death rate in these diseases, except those of the liver, was 94 per cent.; in New Jersey for the same period, 108; and in ten registered States for the past ten years, 19 per cent. The most important of the other diseases of middle life and old age that have increased is cancer. The death rate increase in Massachusetts alone from 1880 to 1910 was 66 per cent., and since 1900 it has increased 31 per cent. External cancer alone has increased in the entire registration area 55 per cent. since 1900. The death rate of the total population age 40 and over has increased, 1910, over 1880: In Massachusetts and New Jersey, in 30 years, 21.2 per cent.; in sixteen cities, in 30 years, 25.3 per cent.; in ten States, in 10 years (1900 to 1910), 3 per cent.

The increase in the proportion of older lives in our population has been very slight and does not account for the increase in the death rate. Mr. Rittenhouse quotes Professor Irving Fisher, of Yale, who in his report on national vitality states: "While the death rate of all age periods under 40 has materially decreased, the later periods of life have suffered progressive increase in mortality rate." The statistics given above are quoted as being the most reliable, and while much progress has been made in recent years in popularizing vital insurance statistics, still much more valuable information should be placed before the public in concise and popular form.

To what extent are the adverse mortality tendencies reflected in our total population? In estimating the probable increase for the entire country, the heavy death rate of the populous cities would be reduced by the lesser rate in the rural sections, thus striking a general balance of mortality rate increase. Mr. Rittenhouse states as his belief that in the past thirty years the mortality rate of our entire population in the group above 40 has increased at least 20 per cent., and that the increase is undoubtedly continuing. It seems that we have failed to adapt ourselves to the sudden increase in the life strain, due to our complex and rapidly changing conditions of life. The increase in American life strain is not due only to the high pressure of modern existence. One element of our population is undoubtedly deteriorating from over-strain, due to excessive physical and mental exertion; but a large group is suffering from the excesses of indolence and physical inactivity. The benefit of exercise from walking has alone been seriously curtailed by the advent of cheap transportation through the cities and towns. The tendency of most modern inventions is to reduce physical exercise and to encourage obesity. Even our farmers ride in sulky plows over the fields in which their fathers followed the furrow on foot. Automobiles have brought many people into the open air, but have added to the nerve strain, encouraged physical inertia, overeating and drinking, all of which promote physical degeneration. These are just as important factors in the increasing American life strain as excessive mental and physical exertion. Increased medical knowledge, especially in the field of prevention, and the adoption of more healthful habits of life by some of our people have prolonged many lives in middle life and old age, as well as in the younger ages. This gain, however, is obscured in the older ages by the increasing premature mortality, which appears to result from the unhealthful habits of a still larger group of our people.

All this is absolutely preventable life waste; for it is stated by physicians that fully 50, and perhaps 60 per cent. of the deaths from degenerative affections could be prevented, or postponed for many years by the adoption of ordinary and well-known personal and community health precautions, which include periodical health examinations to detect the existence of these diseases in their incipiency, when they might respond to medical skill. Such an educational movement would not alone extend the years of life, but a vast amount of suffering, poverty, immorality, crime and financial loss which accompanies this life waste would be prevented. The present and future welfare of our race can be guarded in no better way than by waging vigorous and continuous war against the degenerative diseases, which are prematurely blasting and destroying so many valuable American lives.

# Book Reviews.

HEALTH AND HAPPINESS. A Message to Girls from ELIZA M. MOSHER, M.D., member American Medical Association; Lecturer on Special Anatomy, Physiology and Hygiene for Women, Chautauqua School of Physical Education; Formerly Resident Physician to Massachusetts State Reformatory Prison for Women; Professor of Physiology and Resident Physician, Vassar College; Women's Dean and Professor of Hygiene, University of Michigan; Lecturer on Hygiene, Adelphi College, Brooklyn, etc. Illustrated by HELEN MULHERON. Price $1.00 net. New York and London. Funk & Wagnalls Company, 1912.

THE subjects treated in the present volume are uniquely presented in the form of letters, twelve in all. These letters Dr. Mosher has written during vacation hours, each one being sent from some point of interest as Newburyport; Digby, N. S.; York, Me.; Jaffrey, N. H. The style adopted almost persuades the reader that the letters are personal and individual messages. Particular emphasis is laid on habits of posture, good and bad, and their influence on the body. The sanest and simplest ways of acquiring correct habits of posture are pointed out and are made even more clear and interesting by illustrations. The general scheme of the human body is outlined and the relation of health and happiness to structure and function is defined in no uncertain terms. Foods, the removal of waste, the care of the skin, hair, nails, and teeth, and the uses of clothing are discussed not exhaustively but in a practical and helpful manner. In the last letters the writer follows the description of the structure and function of the nervous system with instruction concerning its care from infancy to maturity. The story of motherhood is told in a way calculated to appeal to girls, for Dr. Mosher believes that physical preparation for motherhood should begin in early girlhood. The message must prove helpful to both girls and their mothers.

THE CARE OF THE BODY. By R. S. WOODWORTH, Professor in Columbia University. Price $1.50 net. New York: The Macmillan Company, 1912.

THIS volume is essentially a book on personal hygiene, although throughout the text appear occasional references to the importance of public hygiene. As the writer points out, "personal hygiene is the direct concern of every man, since he must be his own manager in matters of food and sleep, exercise and recreation, and other daily activities which are influential in determining the difference between good health and mediocre health." And while, on the other hand, public hygiene belongs in the realm of the specialist, nevertheless the ideal citizen must realize its importance in the scheme of living. The book is written chiefly for young men. Some of the important topics of physiology are discussed in a practical way, for intelligent individuals demand reasons before they are willing to exert special pains to keep themselves in good condition. This goal can be reached, according to the writer's belief, without either technical medical knowledge or continuous thought about the preservation of health. Various chapters treat of the science of health, the circulation, breathing, food, digestion, wastes and their removal, the work of the body, the ear, the eye, nerve and brain, work, rest and recreation, indulgences, the cycle of life, and disease. The hygienic crank is shown to be "a very poor model of healthy living," for worry while it lasts transforms man into a sort of monomaniac. The writer believes that "scientific hygiene has nothing in common with worry." The understanding of cause and effect must be the foundation stone of a true science of health. The avoidance of excesses is probably the most useful general rule in the care of health, although even here the personal equation is all-important. A man must learn his own measure. The reader's interest is sustained throughout, for the advice given is sane, useful and well adapted to the needs of every-day life. A good index adds value to the work.

SURGERY OF THE BRAIN AND SPINAL CORD, BASED ON PERSONAL EXPERIENCES. By Prof. FEDOR KRAUSE, M.D., Berlin. English adaptation by MAX THOREK, M.D. (Rush Medical College, University of Chicago). Vols. II and III. With 136 figures in the text, 17 of which are colored, 74 colored figures and 4 half-tone figures on 37 plates. Price, $7 each. New York: Rebman Company, 1912.

THE concluding volumes of this valuable work, the first of which was translated by Dr. Herman A. Haubold, constitute a valuable and important addition to the literature of this branch of surgery, which may be looked upon as one of the great achievements of recent years. Professor Krause must be accepted as among the foremost figures in the development of this subject and his personal association with many of the leaders, not only of German surgical but also neurological endeavor, has aided greatly the value and interest of the work. The basis of the book is a series of cases observed and treated in the Augusta Hospital of Berlin, and the various theoretical questions which might arise in connection with the subject are referred to the original monographs. In other words, the author has endeavored to illustrate important morbid manifestations with characteristic clinical observations, based largely on personal observations and operative procedures. The translator acknowledges that he has had a difficult task and plainly states that he has attempted to reproduce the language of the author as accurately as possible. Whether this is an advantage or not must be left to the reader to decide, although it will probably be admitted that a better English and freedom from idiomatic expressions would have added greatly to the pleasure of reading the book. The second volume of Professor Krause's work presents a complete discussion of the general subject of epilepsy and its treatment by surgical measures. The author does not present any favorable opinion as regards the value of the procedure in general epilepsy, although he admits that improvement may occur. In the Jacksonian variety, in which the indications may be formulated with greater precision than in the general epileptic state, better results will be obtained by operative treatment. He believes that the latter class of cases should invariably be treated by the surgeon from the beginning rather than by the neurologist. A discussion of neoplasms of the brain occupies the remainder of the second volume.

The third volume is taken up by the discussion of intracranial suppurations and injuries, together with a complete description of the surgical diseases of the spinal cord, including meningitis, neoplasms, tuberculosis, and injuries.

A very important feature of the book is the large number of colored illustrations, which are taken from individual cases and display very effectively their various details. These illustrations are based on sketches made during the operation, and are claimed to portray the conditions as objectively presented to the eye of the observer. In each instance only the essential details are given, and the attention is centered entirely on the facts under discussion. Such illustrations present an enormous advantage over original photographic reproductions in which the center of interest is usually obscured by surrounding and unnecessary details.

THE PEOPLE'S MEDICAL GUIDE; Points for the Patient, Notes for the Nurse, Matter for the Medical Adviser, Succor for the Suffering, Precepts for the Public. By JOHN GRIMSHAW, M.D., B.S. (Lond.), D.P.H. (Camb.), M.R.C.S. (Eng.), etc. Price $8 net. New York: The Macmillan Co., 1912.

DR. GRIMSHAW has written a good deal of what may be termed popular medical literature and has done it all well. There is still a certain amount of prejudice among many members of the medical profession against the popularizing of medical subjects. There is, however, too, a considerable audience for this class of writing, and after all if the public requires such matter it is better that it should be provided by a competent person than that untrustworthy misleading and harmful statements regarding diseases and their treatment should be sent forth broadcast. Above all it is necessary if medical subjects are to be supplied for popular consumption that they should be presented in clear and understandable language. Dr. Grimshaw is a past master of this by no means easy art, and in his latest book he has given convincing evidence that in this respect his hand has not in the least lost its cunning. In the preface it is pointed out that the present period is characterized by catholicity and that apart from surgery which is making vast strides, and in addition to drugs which are being hobbled by scientic observation under experimental conditions we have dietetics, physical treatment, psychotherapy, organotherapy, chemotherapy, and vaccine and serum treatment. In this work all these various means of treating are explained lucidly, so that the layman may understand with ease not only treatment but how and why disease and infection are spread. A special feature of the book is that sufficient emphasis is placed upon the prevention of disease and the hygienic methods by which this object can be brought about. The author exposes in a fearless manner "the ways that are dark and the tricks that are vain" of quacks, their methods and medicine, and quoting from the analyses of proprietary and patent medicines made by the British Medical Association shows how most of these highly extolled certain cures are worthless when not harmful and bring to their unscrupulous exploiters huge profits. As a work on popular medicine this one is decidedly the best in the field.

# Society Reports.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held February 20, 1913.*

VICE-PRESIDENT, DR. GLENTWORTH R. BUTLER IN THE CHAIR.

THE evening was devoted to a symposium on hospital and dispensary facilities for the treatment of venereal diseases.

**The Attitude of the Department of Health in Relation to Venereal Diseases.**—Dr. HERMANN M. BIGGS read this paper. He stated that the action of the Board of Health in regard to the reporting of venereal diseases had been taken with a full realization of the difficulties that the problem presented. They had been influenced to this step by the fact that venereal diseases were infectious, highly communicable, and also preventable. The Board of Health was charged by law with the control and prevention of such diseases and consequently the logic of the situation demanded that action should be taken. The Department of Health concluded that its duty was to attempt to deal with the purely sanitary features of the problem from the public health standpoint, while the social and moral phases were entirely ignored. A number of the hospitals had objected to reporting cases of venereal disease and had appealed to the Mayor. The opposition met had been paralleled when some years ago it was decided to make pulmonary tuberculosis a reportable disease. After reviewing the history of that struggle, it was stated that such criticism and opposition had been fully anticipated and much more was likely to follow. Last year Dr. Homer Swift of the Hospital of the Rockefeller Institute showed that there was not a single clinic or dispensary in New York City in which modern methods for the diagnosis and treatment of syphilis were regularly followed. The department did not desire and never had desired to assume any responsibility or to do any work which was being done properly by any other authorities or agencies. The request of the department for a report of the number of cases of venereal diseases treated by each physician during 1912 had up to the present time resulted in the report of 12,525 cases of syphilis, 23,759 cases of gonorrhea, and 4,166 of chancroid, making a total of 40,450 cases, which only represented the cases reported by private physicians. It was probable that 200,000 was nearer the actual number of cases in the city during the year 1912. The department had established a "diagnosis venereal clinic" in July, 1912, and in January an evening clinic for the accommodation of persons who could not well leave their work during the day. The total attendance at the main clinic was 557 since January 1, while the night clinic had averaged six nightly. The policy of the Department of Health toward these diseases at present comprised the following: 1. The development and extension of the system of registration as at present conducted. 2. The provision of adequate facilities for the early diagnosis and subsequent supervision of all forms of venereal disease. 3. The institution of an extensive campaign of education in relation to sex hygiene and as to the cause, prevalence, danger, results of such infections, and the means for their prevention and treatment. 4. The provision of hospital accommodations for such cases as constituted a menace or which could find no facilities elsewhere for their care.

**Dispensary Facilities for the Treatment of Syphilis.**—Dr. HOMER F. SWIFT presented this paper. He stated that the out-patient departments of most of the hospitals had not kept pace with the advances made along scientific lines, so that the treatment to-day consisted chiefly of what might be designated "old fashioned" treatment along with a smattering of the new. The problem of the out-patient treatment of syphilis was peculiar to this disease. Most of the patients were not incapacitated during the early stages of the disease, nevertheless, many of them would be better in the wards of hospitals for a certain time, and the ambulatory treatment of the disease was only one phase of the problem. Up to the present time the classification of the patients had been left to a ticket clerk at the desk who divided the patients into various classes. This classification of syphilis according to the organ involved was an unwise one. The result of such a classification had been that syphilis was regarded as a lot of different symptoms and not as a disease. As long as this view prevailed the treatment of syphilis would be symptomatic and as soon as the symptoms disappeared the treatment would be discontinued. The patient would disappear from view to return, perhaps, to some different room in the clinic. If this view of syphilis as syphilis and not as one branch of many specialties were accepted the dispensary treatment of the disease would be carried on in a room especially equipped, both in men and apparatus for the treatment of the disease. Just who would be at the head of this room would have to be determined in the individual clinic. As syphilis was a genitourinary disease only in the primary stage in men, and in women, in the majority of cases, was untreated until it reached the secondary stage, it seemed probable that it fell more often into the hands of the dermatologist than to the care of any other one specialist. It might, therefore, be better for the dermatological department to supervise and diagnose the treatment. The fact that the disease involved so many of the special organs made it almost necessary to have the help of the ophthalmologist, the laryngologist, and the otologist. The neurologist and the internist might well be included in this special room. The surgeon frequently had syphilis as a primary cause in many of the conditions falling under his care. With a staff consisting of members of all the specialties, the clinical diagnosis would be well looked after. The development of laboratory diagnosis in the last few years made it imperative that proper laboratory facilities should be at hand for diagnosis. If the disease was ever to be eradicated, the early diagnosis of syphilis would have to be made in the majority of cases. The examination of serum from the initial lesion by the dark field microscope was one of the simplest procedures in clinical microscopy. The necessity and importance of such a diagnosis was little realized by the majority of physicians. How little this important instrument was used was well illustrated by reports from a number of clinics in this city. In eighteen dispensaries where primary syphilis was treated, spirochete examination was used as a routine in only five, in ten occasionally, and in three not at all. In only five was there a dark field microscope. The introduction of salvarsan had made this early diagnosis of much more relative importance because the successful abortive treatment of the disease in the primary stage was now possible. Every dispensary should have attached to it an efficient Wassermann laboratory. The reaction was not only of use as a diagnostic measure, but indicated the condition of a patient at a given time, and was also a useful guide in the control of treatment. The careful study of the relative efficacy of treatment had shown that the best forms of treatment, namely, inunctions of mercury or injections of calomel, in the opinion of such men as Neisser, cured much less than 50 per cent. of their patients. At the present time no dispensary could consider that it had done its duty by the patients who placed themselves under its care without the administration of salvarsan in sufficient quantities. The investigations of the past two years had shown that it was necessary to administer this drug in courses of intravenous injections. Such courses should consist of five or six injections at intervals of from five to seven days. The treatment of secondary syphilis with one or two injections without further treatment could not be too strongly condemned. It had been fairly well established that a course of salvarsan was much more effective if it had been preceded by a course of mercury intramuscularly. The great care necessary for the proper administration of salvarsan rendered a special room almost a requisite. If each department in a dispensary tried to administer the drug there was a great loss of time and efficiency. With the same effort in a given time more than double the number of treatments could be carried out in a special room than in several poorly prepared places. The centralization of treatment would lead to more efficient treatment because the methods would be more uniform and larger groups of patients in relatively the same stage of the disease might be followed. The failures of a certain course would be more evident and the plan could be altered in the light of the facts gathered by careful study. Some uniform plan for the instruction of patients in the nature of their disease should be adopted. They should be educated especially in regard to the necessity of continuing treatment even after a symptomatic cure had been effected. It was poor economy, after having invested fifteen or twenty dollars in the treatment of a patient, to allow him to pass on to a condition where fifty dollars' worth of drugs would not cure him. At the present wholesale price a course of six injections of salvarsan cost fifteen dollars. It would be wise for the medical profession to take some concerted action to reduce this cost. The Government collected thirty or forty per cent. of this cost. Both the Government and the manufacturers should be approached in this matter. With regard to the relative efficiency of salvarsan and neosalvarsan, it had been shown that for the same amount of money about twice the therapeutic effect could be obtained from salvarsan as from neosalvarsan. The centralization of the treatment of syphilis would lead to more efficient social

service work. Similar methods might be employed in this line as were used in other branches of the dispensary. The financial condition of the patient should be investigated and those who were able to pay should be compelled to pay for their treatments, while those unable to pay should receive free treatment. The patients who failed to return could be followed up and encouraged to continue treatment until a cure was effected. In the general organization of all the clinics the division of the city into various districts should be most seriously considered. Patients should not be treated in a dispensary outside their own district. An exception might be made in the case of university clinics where as large a material as possible was desirable for teaching purposes. This districting of the city would soon allow a fair estimate of the amount of syphilis in a given district and suitable provision for physicians and equipment could then be made in each dispensary. After all this work was organized, the question of treatment would be only partially solved unless the wards of all the hospitals were opened to patients in all stages of syphilis. Severe early cases and many cases with nervous and visceral involvement should be under ward treatment for a certain period. The work between the ward and outpatient department should be closely correlated.

**Adequate Dispensary Facilities for the Treatment of Gonorrhea.**—Dr. EDWARD L. KEYES, Jr., said that the practical problem of providing adequate dispensary facilities for the treatment of persons suffering from gonorrhea in large cities presented as its chief economic difficulty the time when such clinics should be held. Women patients might be treated at any time during the day, but the wage earner found it extremely difficult to visit the clinic during working hours and, therefore, the clinic for men to be truly efficient should be held in the evening. A second problem was that although the number of clinics for the treatment of venereal diseases in the city was inadequate, nevertheless, it was felt that multiplication of purely venereal clinics unattached to general dispensaries might repel patients who felt the odium of attending such a clinic. This problem, however, was largely theoretical, for a few years ago, and perhaps now, the largest clinic in town was devoted exclusively to venereal diseases and was held in the evening at the Hudson Street Hospital. The clinic for gonorrhea should be diveded into two entirely distinct parts, one for the male sex and the other for the female sex. Gonorrheal rheumatism and conjunctivitis required hospital care. Inasmuch as gonorrhea formed so large a part of clinical work in gynecology it would obviously be impossible to separate the two subjects and, therefore, the clinic must combine the treatment of all gynecological patients with those afflicted with gonorrhea. Special provision should be made for separate sets of instruments for the treatment of gonorrheal and non-gonorrheal cases. The uncertainty of diagnosis forbade precise segregation, yet the mere fact of placing gonorrheal cases in one room to be treated by one set of instruments, and the non-infectious cases in another room would serve as a constant reminder to the members of the staff of the ever-present danger of infection. A small clinic with one or two assistants presented no difficulty for the supervision of patients as this might be made by the chief physician in attendance. It was usually convenient to divide the physicians into two groups, each visiting on alternate days. Some clinics did efficient work although seeing their patients but twice a week. If a larger attendance of patients than ten or fifteen was expcted or desired, certain special provisions should be made for the sake of efficiency. The gynecological clinic required at least one trained nurse for every two physicians in attendance. The clinic should be composed of at least three rooms, viz., waiting room, treatment room, and operating or cystoscopic room. If possible there should be a separate sterilizing room or alcove, and a laboratory for microscopical and chemical analyses. The treatment room should be divided into a number of curtained alcoves, each containing an examining table, a chair, and an instrument table. There should be at least one alcove for each physician in attendance. The precise instrumental equipment of the clinic depended upon the taste and experience of the physician in charge as well as the generosity of the institution supporting the clinic. The social and hygienic side of the venereal problem must be constantly borne in mind. Certain precautions should be impressed upon each individual patient, and the best way was to distribute leaflets emphasizing the chief precautions to all patients at their first visit. They should be printed in different languages. The following was a good sample. It was compiled by the late Dr. Follen Cabot: "Gonorrhea, or 'clap,' is a local contagious disease which requires treatment until the physician pronounces you cured. To avoid infecting others and to prevent complications, as bubo, stricture, swollen testicles, etc., the following rules should be observed: (1) During the first few weeks walking should be limited. When the discharge is profuse you should keep off your feet as much as possible. (2) Do not use alcohol in any form, as it always prolongs the disease. Drink milk, tea, and from six to eight glasses of water during the day. (3) Avoid all sexual relations until you have been pronounced cured by your physician, as the disease may be given to a woman even after the discharge has apparently ceased. When it is present you should avoid sexual excitement, as erections always aggravate the disease. (4) Always wash the hands after washing the parts. The discharge, if carried to the eyes, will cause blindness. (5) Sleep alone, and be sure that no one uses any of your toilet articles, particularly towels and wash cloths. (6) Never lend your syringe to any one, and as soon as you are well destroy it. (7) Be sure that the bowels move every day. If they are inclined to be constipated take a dose of Rochelle salts before breakfast. (8) Do not use ginger ale, mustard, pepper, horseradish, or stimulating sauces on your food."

**Hospital Accommodations for Acute Venereal Cases.**—Dr. S. S. GOLDWATER said that practically there were no hospital accommodations in the city of New York for patients suffering from venereal diseases. Five years ago investigations showed that there were only about 150 beds for male cases and less than 50 beds for female cases, and he believed that that report was fairly accurate. At that time there were but five hospitals in the city of New York that had limited accommodations for patients who were the victims of venereal diseases. The number had since increased. Substantially, however, there was no place for the care of those suffering from venereal diseases in the city of New York. Why? In the first place it seemed to him that there existed among hospital physicians and hospital directors, no well-thought-out theory of hospital organization as a whole. The questions were rarely asked, "What constitutes a hospital? How is the clinical organization of a hospital best made up? What clinical groups of cases, what clinical departments should be recognized in order to insure the greatest efficiency in the treatment of disease, in order to provide for appropriate cooperative effort in complicated cases?" Nowadays cases required the care of a group of men. If they began with that idea in mind they would soon provide in every general hospital in the city some department for the treatment of syphilis and gonorrhea. In the second place many failed to recognize the economic consequences that would follow the failure to treat these cases. Many of these institutions did not know what they were doing when they turned away patients with venereal diseases in the early stages. How would this action affect the hospital later, bringing upon it the necessity of caring for cases in the later and more expensive stages of the disease? There was too much prejudice and a failure to understand certain social facts. Too much emphasis had been placed upon the danger to the hospital workers themselves in the treatment of those afflicted with venereal diseases; danger of infection in hospitals was comparatively slight and least of all in the hospital wards that were specifically set aside for the treatment of these diseases, the nature of which was known. Dr. Goldwater thought there was a misunderstanding in regard to the supposed efficiency of the dispensary treatment of these cases as now practised. If they realized the results that were being obtained their consciences would forbid them to refer these patients to the dispensaries. He said he was glad to hear Dr. Biggs outline the proposed limitation of function of the hospital to be erected by the Health Department for the treatment of venereal diseases. If the department undertook the treatment of syphilis generally it would necessitate a great drain upon the city. He believed that the tendency to establish special hospitals was a danger to the community. He advised the establishment of special departments in general hospitals rather than the further development of special hospitals. In the general hospital, consultants representing all branches of medicine were present daily. One great danger was that the policy of the Department of Health would be pushed too rapidly. It was fair to say that the hospitals had hitherto neglected this work, but public sentiment had been aroused, and the educational movement so far conducted had caused a change of front on the part of hospitals and the public. There was beginning a tremendous movement in the development of hospital work for venereal diseases in the city of New York and the private hospitals would show what they could and would do in the next year or two in the care of those suf-

fering from venereal diseases. Another point Dr. Goldwater wished to bring up was that notification, if insisted upon by the Board of Health, would interfere with the treatment of patients with venereal diseases in institutions. Dreading publicity, patients would turn to irregular practitioners and quacks. It should be the policy of the Board of Health to do what it could toward encouraging the poorer classes to seek treatment in general hospitals and not have them branded as infamous and thus encourage them to turn to quacks. He hoped that the Board of Health would stand aside and let the Academy of Medicine and the associated clinics study the question and see what could be done in the hospitals and dispensaries in the care of patients with venereal diseases. Hypocrisy played a part in the policies of certain institutions, as illustrated to him recently when he made a visit to a neighboring city. He fell in with some trustees of a leading institution where they had a very extensive hospital plant. The hospital had acquired some neighboring property on which were a number of tumble-down shanties. Dr. Goldwater suggested that they clear them away immediately and not wait until funds became available for any further extension of the hospital plant. One of the trustees laughed and Dr. Goldwater asked why he laughed. The answer was that these shanties, which were houses of prostitution, were such excellent rent-payers that they could not afford to give them up. Yet in the hospital which was willing to accept revenue from this source, no case of syphilis or gonorrhea was treated because moral contamination was feared.

**Relation of Syphilis to Internal Medicine.**—Dr. Warfield T. Longcope read this paper. He said that the great importance of syphilis as an etiological factor in many of the chronic diseases that incapacitated the population in the prime or a little after the prime of life was rapidly becoming evident. Principally by means of the Wassermann reaction the dependence of these chronic diseases upon syphilis were becoming clear. The two situations in which the *Spirochæta pallida* seemed most often to persist and where they caused the most trouble were the cardiovascular system and the nervous system. Of the cardiovascular diseases dependent upon syphilis, syphilitic aortitis stood out most prominently. This manifestation usually produced symptoms some ten or twenty years after the primary infection and formed the basis of three very serious conditions, namely, aneurysm, aortic insufficiency, and angina pectoris. It could now be shown definitely that syphilitic aortitis was the direct cause of from 90 to 95 per cent. of all aneurysms of the aorta, so that for practical purposes aneurysm of the aorta meant syphilis. The same disease was responsible for about 75 per cent. of the cases of aortic insufficiency, and anywhere from 30 to 50 per cent. of the cases of angina pectoris in young adults. To syphilitic aortitis must be ascribed a certain proportion of cases of myocarditis and it had been estimated that, excluding aneurysm and aortic insufficiency, about 24 per cent. of patients suffering from cardiovascular diseases gave a positive Wassermann reaction. With generalized arteriosclerosis in only about 12 per cent. was a Wassermann reaction obtained. Of the general diseases next in importance were the bone and joint manifestations of syphilis. It could now be shown that many of the cases of chronic arthritis, osteitis, and periostitis were directly due to syphilis. A certain proportion of the cases of cirrhosis of the liver, too, were caused by *Spirochæta pallida*. Along with cirrhosis of the liver the fact might be mentioned that positive Wassermann reactions have been obtained in cases of splenic anemia or Banti's disease and in some instances these conditions seemed to be dependent upon congenital syphilis. Dr. Longcope said that recently the importance of syphilis as the basis of certain cases of neurasthenia had been forced upon him. Such conditions as paroxysmal hemoglobinuria were accompanied constantly by a positive Wassermann reaction. There were an appalling number of cases of disease of the eye due to syphilis. According to Leber, excluding suppurative cases, the Wassermann reaction was positive in 26 per cent. of cases of retinitis, 38 per cent. of iritis, and 84 per cent. of keratitis. The question might be asked what this meant to the general hospital and to the general public. It meant that in the Presbyterian Hospital as many as one-quarter of the patients in the medical wards were suffering from these chronic syphilitic affections. This meant that it cost the hospital, at perhaps a low estimate, $25,000 a year to care for these individuals. The conditions in diseases of the nervous system were even worse. Practically all cases of paresis were due to syphilis and the brains of these cases might contain at death enormous numbers of *Spirochæta pallida*. Tabes dorsalis must for all practical purposes be considered a syphilitic disease. From the statistics of the State hospitals it was found that 13.3 per cent. of all cases admitted to the State institutions were cases of general paresis, and the total number of patients treated in the State hospitals in September, 1912, was 32,624. If 13 per cent. of these were paretic, it was evident that at this date there were about 4,000 cases of paresis in these hospitals. The care of these patients cost the State nearly one million dollars a year. In Philadelphia, at the City Hospital alone, the cases of paresis, tabes, and cerebrospinal syphilis admitted to the nervous wards formed 15 per cent. of the admissions. Thus one could see what a tremendous economic problem this matter became to say nothing of the humanitarian aspect, and it might safely be said that the two most important and widespread diseases with which they had to deal were tuberculosis and syphilis One hesitated which to mention first. Cooperation of physicians, hospitals, public health departments, and the public seemed almost the only criterion to reduce the incidence and ravages of this ubiquitous disease.

Dr. William S. Gottheil said that he had been much interested in the remarks made by an official of the Board of Health, by a worker in a scientific institution, and by a superintendent of a large hospital; but that he thought it was about time that the medical practitioner should be heard from, who might have something to say slightly different from the views expressed. He did not propose to take up the consideration of ideals of the future, but would speak of conditions as they actually confronted the profession to-day. A short time ago the Department of Health had undertaken to take under its wing the cases of venereal disease in the city, just as they had already done with tuberculosis, throat diseases, eye affections, and many other classes of sick people. An order was issued to the superintendents of all the hospitals to notify the Board of Health of all cases of venereal disease coming under their care, together with the diseases dependent upon them; and such report was to contain not only the names and addresses of the sufferers, but also the names and addresses of the probable source of contagion. With this was coupled a request to the profession at large to do the same with private patients, omitting, however, the names and addresses. This has led to a serious and energetic protest on the part of several medical bodies, both societies and hospital medical boards, who considered the step ill-advised, mischievous, and of use only to the beaurocracy that apparently sought general control of medical practice by giving them apparent facts on which to base demands for more hospitals. With the remarks of Dr. Goldwater the speaker was thoroughly in accord; the public hospitals and dispensaries had not in the past done their full duty to this class of cases, but they were awakening to the fact, and were rapidly endeavoring to remedy matters. Especially did he appreciate the cogency of Dr. Goldwater's remark that it was an unfortunate thing that a rational movement towards improvement in the venereal situation had been complicated and possibly impeded by the attempt at compulsory notification made by the Board of Health. Not only the profession at large but the general public also would object very seriously to any such measure. It was a fact that as compared with many Europeon cities the number of beds specially devoted to venereal diseases was small; but there were many more than the reader of one of the papers stated. There were 150 in one hospital alone with which the speaker was connected and many of these were empty a large part of the time. It must not be forgotten that more than 90 per cent. of all venereal cases were ambulant ones and not hospital cases at all. If more accommodations were needed the remedy was to enlarge the facilities for handling these cases in the municipal hospitals in the various boroughs. The speaker was very grateful to the gentlemen from the Board of Health and the Rockefeller Institute who had instructed him as to the methods of diagnosis and treatment in venereal diseases; and he felt sure that the various learned societies devoted to these subjects and the many able practitioners that composed them would share his feelings. Personally, however, he pitied the would-be syphilographer who could not in forty-nine cases out of fifty make the diagnosis of initial lesion without the dark-field microscope, or that of constitutional syphilis without the Wassermann test. He and all other practitioners in this branch used both measures of diagnosis freely in doubtful cases; but the laboratory results of both tests were distinctly of secondary value as compared with the clinical signs. Finally, the speaker warned the Board of Health that a regulation of the kind they were attempting to introduce was bound to be a dead letter regulation even if they succeeded.

Dr. Henry W. Berg said that to be the subject of gonorrhea or syphilis was believed to be a disgrace and this

was a very important sociological factor in connection with the order to report these venereal diseases and this was without doubt the reason why these victims objected to such reporting. Every patient objected to being disgraced for life, or even for a day. When one reported a case by number, whether of gonorrhea or syphilis, it really meant a report by name and in subsequent years might become an injustice to the patient. A patient with a chancre or with gonorrhea went to the doctor with horror; the younger the patient the greater the horror. A married man might come with an attack of gonorrhea acquired from outside his home, and he asked them to imagine his horror if his case was reported, especially if he resided in a small village. Suspicion might even fall upon his wife. They had no right to tell the innermost secrets of any man's life and this he believed was the essence of the question then before them. What they should strive to do was to clean up the people who gave gonorrhea and chancre. Dr. Berg said he did not feel that he had any right to report cases of venereal disease until the Supreme Court had passed upon it; after thirty years of activities in the medical profession he said he did not feel safe in taking the risk of a damage suit because he reported a case of gonorrhea or syphilis which might have disgraced some woman. He would not do this because he was more or less selfish. This was not a scientific matter but a sociological matter and he differed with Dr. Biggs regarding the desirability of reporting these cases. As to the request to report cases of gonorrhea or syphilis among the poor that went to the hospitals, he feared that these poor people would not want to be reported. Dr. Berg advised those present not to sign any card, but let the patient sign it. To report a dispensary patient by name and a private patient by number was an invidious distinction. He asked that those present should negative any reporting of syphilis or gonorrhea in the city of New York if any resolution to this effect was brought up before them.

Dr. Hermann M. Biggs said that the Department of Health respected all that had been said by the speakers, but what he had brought before them had been under consideration for three years before it had been determined upon. He did not quite understand why those afflicted with syphilis or gonorrhea should so keenly feel the disgrace, nor how the doctors could reconcile their attitude regarding these reports, when they knew they could go into any hospital and find complete records of those who had syphilis or gonorrhea and diseases dependent upon them. These reports were open to anybody who desired to see them. Nobody was prosecuted for placing the facts in the records. These records were placed on the heads of the beds. The Department of Health records were absolutely board records, and divulging their contents would be considered a misdemeanor. What they demanded of the dispensaries were complete and accurate histories, and they promised and assured them that these records would be kept confidential.

Dr. Homer F. Swift said he wished to correct any impression that he might have made that he was too dogmatic as to how syphilis should and should not be treated. He called attention to the facilities they had during the last few years and he tried to bring out the fact that they had good men working on the subject. He thought that some of the remarks made favored increased facilities in the treatment of this disease. Many of the things brought forth were well established. If he seemed to have been too dogmatic in his statements he said he wished to apologize.

**Resolution Regarding the Treatment of Venereal Diseases.**—The following resolution was read and then referred to the Council of the Academy for action and recommendation:

"Resolved, that the New York Academy of Medicine (1) is opposed to the establishment of a clinic for the treatment of venereal diseases by the Department of Health until it has proved that the existing dispensaries, private and public, cannot be made adequate to the needs of the city. (2) Approves the facilities for the diagnosis of venereal diseases which the Department of Health affords through its laboratories. (3) Is in favor of reporting hospital and dispensary cases of gonorrhea and syphilis to the Department of Health under the regulations promulgated by that department and of the uniform use of such nomenclature as may be approved by the Department of Health. (4) Favors the establishment by the Health Department of hospitals for the care of those in certain stages of venereal infections. (5) Favors action leading to the admission under suitable precautions of acute stages of syphilitic infection in the wards of general hospitals. (6) Favors the establishment of a special department for the treatment of syphilis in every general dispensary desiring to treat these diseases. (7) Recommends the formation of an Association of Gastrourinary and Syphilitic Departments of general dispensaries in this city, possibly in connection with the Associated Out-Patient Clinics of the City of New York, for the purpose of coordinating and standardizing the medical and administrative work in connection with venereal diseases. (8) Favors measures, such as the abolition of duties, which may reduce the cost of salvarsan. (9) Is of the opinion that it would be helpful in attacking the problem of social diseases if newspapers in discussing these diseases used the names syphilis and gonorrhea."

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Adjourned Meeting, Held January 31, 1913.*

The President, Dr. Charles Gilmore Kerley, in the Chair.

**Address of the Retiring President.**—Dr. Charles Gilmore Kerley made a brief address in which he thanked the members for the support they had given him in his work during his term of office.

**Inaugural Address of the President-Elect.**—Dr. Brooks H. Wells, after making a grateful acknowledgment of the honor conferred upon him and expressing his appreciation of the responsibilities of his office, said that neither the honor nor the responsibilities were to be minimized, for this society was the representative of the medical profession of the greatest city of the western world and had traditions to remember and duties to perform which were of vital interest to the profession and to the State. Dr. Wells reviewed the history of the society since the time of its incorporation in 1806 in respect to the regulation of the practice of medicine and surgery in this State. From 338 members in 1806 the society had grown in 1912 to 2,469. There were some 2,000 eligible physicians in the county who did not appreciate the duty, the value and the privilege of membership. The duty of the membership lay largely in the fact that the power of the Society both in uplifting and in protecting the material interests of the profession must be in direct proportion to the number, the personal endeavor, and the loyalty of each one, and in the fact that the State in granting privileges imposed obligations which they should not shirk. The direct value and benefit of membership included, besides the value of a better standing in the profession and in the community, the Medical Directory, the State Journal of Medicine, defence against malpractice suits, indorsement upon removal to other States or counties, membership in the State Society, eligibility to the American Medical Association, and participation in the scientific work of the Society and the social hour after the meetings. Each member should influence and bring into the ranks some one of the two thousand who was now neglecting this civic and professional obligation. One of the reproaches of the medical profession was that in general it was indifferent to the welfare of its fellow practitioners. If this were even partly true it was another reason for membership, for one of the objects of the Society was the betterment of the economics of medicine. No other organization could do so much in New York City to advance professional interests as the County Society. In this respect it differed from private societies whose sole object was the promotion of science and good fellowship. It was for the members of this Society to maintain and to strenuously fight for the honor, the high ideals, and the personal integrity of all the members of the profession and especially for these qualities in the members of the County Society. In so far as they failed in this they lost respect both in their own eyes and in the eyes of the public. One had not done his duty when he had merely joined the Society but he must feel that he was personally responsible for the good name and efficiency of the organization. Thus far he had considered the matters that came within the executive functions of the Society but they should not forget the importance of the scientific work. This was equally essential for the existence of the Society. Here there was much for each of them to do and each should have the confidence to present his own best work, yet he should have something of new interest to say to his audience and should say it briefly. Though it seemed that much had been said on every subject there were still many fields that lay fallow, as, for instance, that of cancer. One of the important matters worthy of the attention of this Society was the acquirement and dissemination of knowledge among the people of the necessity of the early recognition of the

signs leading toward the early diagnosis of cancer of the uterus. The signs of this disease, the means for reaching an earlier diagnosis, and the dangers of delay were known, so that there was no excuse for letting women go until the time for successful intervention had passed. Much could be done if each member of this Society would make it his duty to spread among his women patients knowledge of the early symptoms of cancer and of the possibility of its cure in the very early stages. The known fields of medicine, however apparently well mapped out, had many spots where the patient explorer would yet uncover unexpected values. From the pinnacles of present achievement they looked over the future and through the rifts in the clouds of the unknown caught glimpses of fertile valleys and giant peaks that inspired with the invincible determination to win in their untrodden heights.

**The Practical Value of the Negri Bodies from a Diagnostic Standpoint.**—Dr. S. R. Klein read this paper. He stated that with the exception of the Negri bodies no characteristic anatomical or histological changes were found at necropsy in sections of the brain, meninges, and spinal cord from cases of rabies. With regard to the virus nothing definite was known. Experimentation had shown that the poison was connected principally with the nervous system, especially the spinal cord. It destroyed the nerve cells. The virus of rabies was of two kinds, the "street virus" and fixed virus. The virulence of the "street virus" was variable and when inoculated subdurally into rabbits it produced the symptoms of rabies at a variable period of more than fourteen days as a rule; the fixed virus was modified from the street virus by passage through a long series of rabbits. In this way the virulence was increased for these animals, so that they finally took the disease after a certain fixed period of incubation. This form of virus, after attenuation by desiccation, was used in the Pasteur treatment. Negri found within the nerve cells of various portions of the central nervous system of animals which had died of rabies sharply defined round or oval microorganisms from one to twenty-five, but averaging four micromillimeters in diameter; these he considered to be sporozoa. They consisted of a mass of protoplasm containing inner bodies, segment; and spores, and were of constant occurrence in all stages of hydrophobia. These bodies were found in all animals, whether they had died of the natural or artificially induced infection. They were not demonstrable in normal animals or in such as had died of other infections. In subdural infection they were found most frequently in Ammon's horn; they were not observed, however, in all portions of the nervous system, a fact which led Negri to assume that the parasites probably occurred in another form in these localities. The staining process used by Giemsa stained the cytoplasm of the bodies blue and the central bodies and chromatoid granules blue, red, or azure. Generally the larger bodies were a darker blue than the smaller; the smallest might be very light blue. For diagnostic work the smears should be made from at least three different parts of the gray matter of the central nervous system, from the cortex in the region of the fissure of Rolando or in the convolution around the crucial sulcus, from Ammon's horn, and from the cerebellum. In many animals smears were made from the cerebral cortex around the fissures of Rolando and Sylvius, from the olfactory bulb, Ammon's horn, the cerebellum, the medulla in the region of the roots of the cranial nerves, the spinal cord in the dorsal and lumbar regions, the salivary glands, the suprarenals, and some of the peripheral nerves. The following was a short and well recommended method of staining for diagnostic purposes: Place the smears in methyl alcohol for five minutes and then in equal parts of Giemsa solution and distilled water for ten minutes. In this way the bodies were generally brought out well enough for diagnostic purposes, and sometimes the solution showed the structure distinctly. Negri bodies were found before the beginning of symptoms, usually on the fourth day, when fixed virus was used, and on the seventh day, when the street virus was employed. Negri bodies belonged to the class protozoa because they had a definite morphology which was constantly cyclic, that was certain forms always predominated in certain stages of the disease. Negri bodies also belonged to the microsporidia. They were living organisms and the cause of hydrophobia. When they were found rabies could be safely diagnosed. If not found and the specimen was fit for inoculation into a rabbit the biological test could be applied, and in a few cases it succeeded where the Negri bodies had been missed by the microscope. It was evident that early diagnosis was important. While the Negri bodies were easily found in the brains of animals dead from street virus, they were with difficulty found in fixed virus brains and then only in a very minute form. All observers agreed that rabic virus filtered through a Berkfeld candle retained its virulence. The larger Negri bodies could not pass through this filter, so if, as Negri held, the brain was thickly studded with minute forms of spores which were unstainable or ultramicroscopical, and therefore invisible, the filtrability of the virus was an argument in favor of the parasitic nature of these bodies. The Negri bodies might be described as oval, round, or triangular in shape, according to their position in the cell. They were strongly eosinophilic and consisted of a fundamental homogeneous substance, non-granular and hyaline in appearance, resembling coagulated albumin. Within them were clear shining areas, which at first sight appeared to be vacuoles, but under higher powers showed points of deeper color. They were quite resistant to external agencies. Material might be preserved in glycerin for eighty days without altering the Negri bodies. They were destroyed by a thirty-three per cent. solution of caustic potash. They were especially numerous in cases of rabies of long incubation period. Babes believed them to be encapsulated parasites undergoing involution or degeneration. After referring to the staining methods of different investigators, Dr. Klein described Pasteur's method of immunization, which was as follows: Rabbits were inoculated subdurally with the fixed virus daily. At death the spinal cord was removed with strict aseptic precautions, cut into three pieces and suspended in large bottles having an opening near the bottom as well as at the top and which contained a layer of caustic potash. Both openings in the bottle were plugged with cotton to permit of a free circulation of air. They were kept in a dark room at a constant temperature of 23 C.; thus a full series of cords from fourteen days to one day old was at hand, giving the various attenuations of the virus from the weakest to the strongest. The usual dose was a portion of cord from two to three m.m. in length, which was prepared for injection by filtration and suspension in normal salt solution or bouillon. After many experiments on dogs it was determined to try the virus on man. Dr. Klein then related the history of Joseph Meister, the first patient upon whom the treatment was tried. In Hungary from 1890 to 1895, 5,899 persons were bitten by dogs; of these 4,914 received the Pasteur treatment and the mortality was 1.20 per cent., while among those who were not treated by this method the mortality was 14.94 per cent.

**The Water Trap Stomach.**—Dr. G. Reese-Satterlee and Dr. Leon Theodore LeWald presented this communication. They were of the opinion that the water trap stomach was a distinct condition which sometimes might become very serious. The etiology was somewhat uncertain, but one factor was embryological development. A long gastric omentum would predispose to a sagging along the lesser curvature, while the pyloric end remained fixed by its attachment to the spine and the ligament to the liver. The natural result from indiscretions in diet and exercise too soon after heavy meals and with a loaded colon would be to drag down the more dependent portion of the stomach. As a result the organ took the shape of a drain trap and the lower part contained the partially digested food which caused a number of symptoms called indefinitely indigestion or gastritis. A constant drag of the elongated stomach and ptosed colon affected the visceral nerves and resulted in neurasthenia. Tight lacing was also a probable factor, as nearly all cases occurred in women. Possibly the so-called habitus enteropticus and the narrow costal angle and wide pelvis might have an influence, although this predisposed to a more general visceroptosis, which had not usually been present in the series of cases under consideration. Gastric analyses showed nothing very characteristic, though generally there was a low hydrochloric acid content and no excessive amounts. The markedly residual stomachs showed the remnants of previous meals. The stools usually had particles of undigested food, especially meat fibers. In studying the radiographs, the length of the stomach varied from nine to fifteen inches, averaging 10½ inches, all being abnormally long organs. The distance from the upper part of the curvature of the duodenum to the most dependent portion of the greater curvature, called the pyloric arm, varied from 5¼ to 9½ inches. In other types of stomach, this distance was usually 1½ to 3 inches. The average length of the pyloric arm in the sixteen cases reported was 6½ inches. The distance of the most dependent portion of the greater curvature below the umbilicus, or a line drawn across the upper level of the pelvic bones, varied from 3 to 8 inches. This distance in normal stomachs averaged 1½ inches. These measurements were all taken a few minutes after the administration of a bismuth meal consisting of 90 grams of bismuth subcarbonate suspended in 600 c.c. of fermented milk. The colon in all

these cases was ptosed to a degree corresponding with that of the ptosis of the lower border of the stomach. The appendix as an etiological factor could be excluded in five of the cases on account of a previous appendectomy. Six of the cases had operations and in all of these the positive *x*-ray findings were confirmed, as well as the position of the kidney. Post-operative radiographs demonstrated in every case the improved position of the stomach and colon. None of these patients had had any marked amount of post-operative abdominal pain, except in one or two cases, immediately after operation. Vomiting was present in only three cases and very serious in only one. Epigastric distress and a feeling of drag in this region was present in practically all and also loss of weight and neurasthenia. A history of constipation was present in all except one case in which radiographs demonstrated the colon to be empty in forty-eight hours. Evidences of colitis were found in three cases. The treatment of these cases was essentially medical, but in the operative cases the after medical treatment was apparently unnecessary except in two cases where neurasthenia was profound. The two principal indications were to relieve the drag and to cure or improve the constipation. The mechanical means for the former was abdominal support and position. The best support was the abdominal belt and a properly fitting abdominal corset. In the class of patients with a long narrow chest, narrow costal angle, and a large flaring pelvis, the abdominal belt reenforced by pads was alone advisable, as no corset would fit. It was essential that the belt or corset be put on with the patient in the proper position, which was on the back, with the hips elevated, the corset being laced up from below. While on the feet the support should not be removed. Radiographs in some of these patients a year or two after beginning treatment showed that the stomach had improved so much that they were almost prepared to state that the belt could be removed. Position would help this drag. The foot of the bed should be raised, slowly at first until the point of tolerance was reached, which was not over four or five inches and often less. The patients were instructed to lie down on the right side for at least one-half hour after each meal. Hydrochloric acid was probably the only drug that would be used for any length of time. The study of the individual diet and the selection of proper foodstuffs to correct the constipation was imperative. Instructions to the patient should always be written out in detail. Colon massage and vibration had given the best results in constipation, but must be systematic. The indications for operation were a severe grade of water trap stomach and a residue after five hours, provided that the symptoms had resisted treatment for four or five months, or showed a gradual steady loss in weight and strength, or could be readily demonstrated to have constant discomfort from this condition. It must always be remembered that this form of stomach might be temporary only and would return to normal position after rest and medical treatment. Appendectomy might be performed when in doubt, but should always be regarded as a conservative cure. The first operation was the important one; secondary operations were not so good in these neurasthenic patients.

**Radiographic Evidence of Gastrointestinal Stasis.**—Dr. Adoniram J. Quimby presented this paper and gave a lantern slide demonstration. He stated that he would show only the usual sites at which the bismuth meal was observed to stagnate and the slides would throw some light on one of the causes of this condition. The bismuth meal rarely met with resistance before reaching the lower end of the esophagus, except in diverticulum and pressure from neoplasm or stricture from deglutition of caustics. A few cases of spasm near the upper border of the sternum had, however, been reported. At the cardiac opening of the stomach a more or less permanent contraction was frequently observed, which in its earlier stages was purely spasmodic. As neoplasms also developed in this location whether independently or following the irritation produced in old cases of cardiac spasm, differential diagnosis was occasionally difficult. The next site at which a delay of the bismuth meal was observed was at the pylorus. The same causes were operative in producing stasis at the pylorus as those mentioned in connection with the cardia. Again stasis might occur at the junction of the first portion of the duodenum. Here and at each of the succeeding sites at which the bismuth meal was found retarded ptosis exerted an influence which it did not seem to exert in the upper portion of the digestive tract. Ptosis acted in two ways; the lumen of the gut was actually narrowed and in addition a sharp angle in the intestine was formed which resulted from the tension across the fibers of the suspensory ligament. The next point at which stasis was frequently noted was the duodenojujunal junction at which point another suspensory ligament of some size existed, and which offered considerable resistance to the downward tug of the ptosed organs so that it caused this part of the gut to be tightly drawn at an acute angle, interfering with the passage of its contents. From this point to the terminal ilium no suspensory ligaments of more solid texture than the rest of the mesentery were found and consequently, cases of stasis in the jejunum and the course of the ilium were probably not observed except when the lumen of the gut was decreased by external causes. In the terminal ilium all the causes of stasis previously mentioned were operative, and, in addition, the immediate effect of stasis in the subsequent parts of the bowel. In the ascending and transverse colon shaper angulations were frequently observed which it was impossible to change by placing the patient in any of the surgical positions, and it was his opinion that these angulations followed known hydraulic laws and caused most serious interference with the functions of the intestine at this point. This belief was strengthened by the theory of Holtznecht that the onward movement of the feces through the colon was not continuous but intermittent. The sigmoid was a point of even greater interest than any of those already mentioned. As was well known, it was much longer in proportion in infants than in adult life and it was an important factor in the causation of constipation in infancy and childhood. Stasis in the sigmoid naturally produced the same condition in the remainder of the colon. As this condition progressed there was not only interference with the muscular coats of the bowel, but a passive hyperemia developed which interfered with their nutrition and innervation so that in turn all the supports of the abdominal contents were subjected to undue stress during their development which was also a period of greater activity and indiscretion. After tracing the development of the condition known as splanchnoptosis, Dr. Quimby said that in the development of this condition one of the regions which had of late attracted attention was the terminal ilium. Arbuthnot Lane had mentioned a number of causes directly responsible for the stasis at this point, such as true Lane's kink, adhesions of the appendix to the ilium, stasis in the ascending colon interfering with the iliac contents through the ilio-cecal valve, adventitious adhesions such as Jackson's membrane, etc., post-operative adhesions and obstructions from extraneous pressure as from neoplasms. In advanced cases of ptosis one sometimes found the stomach sharply flexed upon itself and in such a state of atomy that it seemed unable to bring its contents to the pylorus, which remained fixed near its normal position, so that these patients showed gastric retention after many hours if kept in the erect position, but suffered comparatively little inconvenience in the prone or recumbent position. Occasionally he had observed remarkable activity on the part of stomachs which were well down in the pelvis. He had examined a number of patients in whom gastro-enteroptosis had advanced to a considerable degree and in whom redundant sigmoid, colonic angulations, and iliac stasis were present without serious inconvenience, but in a number of them disastrous results followed comparatively slight causes such as mental strain, shock, trauma, etc., which led to the belief that these conditions greatly lowered the vitality and decreased the ability of the individual to withstand undue strain.

# State Medical Licensing Boards.

## STATE MEDICAL EXAMINATION QUESTIONS.

Arkansas State Medical Board.

*May 14 and 15, 1912.*

(*Concluded from p. 368.*)

GYNECOLOGY.

1. Give the most common causes of sterility in the female.
2. Name the dangers of the use of the uterine sound.
3. Differentiate subinvolution, rectocele, pyosalpinx, cervicitis, metritis, vaginismus.
4. Describe the technic of catheterization.
5. How would you determine whether cancer of cervix is operable or not?
6. What may be revealed by digital vaginal examination?
7. Differential diagnosis of appendicitis and right tubo-ovarian disease?
8. Give symptoms of acute pelvic peritonitis.
9. Give diagnosis symptoms of carcinoma of the breast.
10. Mention three pathologic types of endometritis.

SURGERY.

1. What are the causes of ptosis and the remedial measures employed?
2. Give the indication and technic of operation for ligation of common carotid artery.
3. What surgical landmarks of the elbow-joint would aid you by their position in diagnosis between a fracture of the upper end of the radius and a posterior dislocation of the ulna?
4. Describe in detail the operation of lumbar puncture. What are the indications for this operation?
5. Describe amputation at the hip-joint. Give the method of inserting Wyeth's pins.
6. Give etiology, symptoms, and treatment of psoas abscess.
7. Describe the following tumors: keloid, papilloma, and epithelioma.
8. Define coxa vara; give causes and symptoms.
9. Give indications and contraindications for salvarsan (606) in treatment of syphilis. Technic of your method of administration.
10. Why do foreign substances such as bullets, splinters, pieces of glass, etc., cause suppuration when embedded in tissues?

HYGIENE.

1. Describe a thoroughly safe method of disposing of sewage in the absence of water-works.
2. Name the diseases carried by infected water.
3. Define epidemic, endemic, and pandemic diseases.
4. What precautions should every consumptive take to prevent spreading the infection?
5. What are the practical necessities of pure food and drug laws?
6. What are the effects of chronic alcoholism?
7. Give full directions for nursing a case of typhoid fever to prevent its extension.
8. Define disinfectant; germicide.
9. Give full directions for ventilating an ordinary bedroom.
10. What is the most common cause of blindness in young children, and how is it to be prevented?

## ANSWERS.

GYNECOLOGY.

1. The *most common causes of sterility in woman* are: Gonorrhea, absence or errors in development of any part of the genital tract, malformations of genitals, fistulæ, lacerations, obesity, alcoholism, pelvic inflammations, dyspareunia, inflammations of uterus, tubes, or ovaries, elongated cervix.

2. *Dangers of the use of the uterine sound* are: Sepsis, perforation of uterus, hemorrhage, and induction of abortion.

3. In *subinvolution*, there is a history of recent delivery, and the uterus is large and boggy.

In *rectocele* there is a hernia of the rectum into the vagina, covered by the mucous membrane of the posterior vaginal wall.

*Pyosalpinx* is accompanied with pain and tenderness over the affected part, made worse by vaginal examination; fever, and dysmenorrhea.

In *cervicitis*, the neck of the uterus is inflamed and sunken, and there is a glairy, tenacious discharge.

In *metritis*, the uterus is enlarged, tender, and there is a leucorrheal discharge thinner than is found in cervicitis.

*Vaginismus* is characterized by painful and spasmodic contraction of the vaginal orifice which renders coitus or vaginal examination painful or altogether impossible.

4. *Catheterization.* "The instrument should never be introduced by touch alone, but always by sight. The labia minora should be separated, and the vestibule cleansed with absorbent cotton saturated with an antiseptic solution. The instrument, preferably of glass, should be perfectly smooth, with no rough or cutting edges. It should be boiled, kept in an antiseptic solution, and previous to use should be washed with sterile water. It is then lubricated and passed upward and backward by very gentle pressure and without using any force." (Gould and Pyle's *Cyclopedia.*)

5. Cancer of the cervix is operable only when the disease is limited to the cervix; hence any extension is a contraindication to operation. The uterus must be freely movable.

6. A *digital vaginal examination* will show: (1) The condition of the perineum, whether torn or not; (2) the size, shape, dilatability, temperature, discharges (if any) of the vagina; (3) the presence of cystocele, rectocele, prolapsed uterus, or other abnormal conditions of vagina; (4) position, shape, size, consistence of cervix, with presence or absence of erosions, lacerations; (5) condition, shape, size, location, and mobility of uterus; (6) sometimes presence of abnormalities in tubes, and ovaries, and uterus (such as tumors, inflammations, etc.).

7.

| APPENDICITIS. | ADNEXAL INFLAMMATION. |
|---|---|
| 1. No previous local disturbances. | 1. Genitourinary functions previously disturbed. Usually a history of gonorrheal or puerperal infection. |
| 2. Chill usually absent. | 2. Chill may precede fever. |
| 3. Pain in right iliac region, sudden onset, acute, and not radiating to thighs. | 3. Gradual onset, pain dull, continuous, and radiating. |
| 4. Fever of variable degree. | 4. Fever often entirely absent. |
| 5. Muscular rigidity on right side of the abdomen. | 5. No muscular rigidity unless complicated by peritonitis. |
| 6. Inflammatory exudate about appendix three to five days after onset of symptoms. | 6. Inflammatory exudate in the pelvis felt by vaginal examination at the onset of the symptoms. |
| 7. Vaginal examination is rarely painful in appendicitis. | 7. Always painful in tuboovarian disease. |

—(Findley.)

8. ACUTE PELVIC PERITONITIS. *Symptoms:* "The pulse is first rapid, full, bounding; later, small, hard, wiry, or thready; in bad cases, soft and irregular. The temperature rises early, and continues more or less elevated. Often the onset is marked by rigors. Pains develop of a burning, cutting, darting, or boring nature. There is nausea, vomiting, constipation; sometimes diarrhea. When pus collections have formed, the symptoms are those of abscess. Pus may tend to open through vagina, bowel, bladder, or through the abdominal wall. *Physical signs:* The abdomen is early rigid. Afterwards it may be distended. Both legs are drawn up. The belly is tender or painful in its lower part. On bimanual examination, the vagina is hot and sensitive. When there is free fluid in the pelvis, an indistinct boggy fullness may be made out. When consolidation has taken place in it a hard mass like plaster-of-Paris is felt behind, and at the sides of the cervix; sometimes around it. In other cases, masses of serous fluid may be encysted, and are felt in the middle line pushing the uterus forward; sometimes in front of the uterus, when this organ has been retroverted; sometimes on either side behind the broad ligament. After an acute attack has passed off, various conditions are found, *e.g.*, thickenings, adhesions, displacement of uterus or appendages. There is usually considerable tenderness on examination." (Webster's *Diseases of Women.*)

9. The *diagnostic symptoms of carcinoma of the breast* are: A hard, irregular tumor in the breast; at first movable, later fixed and adherent to the breast or pectoral muscle; it is not clearly defined and limited; there is generally retraction of the nipple, and pain (often severe) is generally present; induration is evident, and the breast may be enlarged; the lymphatics in the axilla and above the clavicle may be found enlarged.

10. *Endometritis* may be: Glandular, interstitial, and mixed.

SURGERY.

1. *Ptosis* may be caused by paralysis of the motor oculi nerve, by injury to the levator palpebræ muscle, or by inflammation of the upper eyelid. *Treatment* consists in removing the cause, if possible; in removal of a piece of the skin of the upper lid; in the use of a lid elevator.

2. *Ligation of the common carotid artery is indicated* in: Wounds of common carotid, external carotid, internal carotid, and branches of external and internal carotid; aneurysm; and to limit the growth of inoperable tumors. The line of the common carotid artery is from the sternoclavicular articulation to midway between the angle of the jaw and the mastoid process, the patient's head being turned toward the opposite side. An incision three inches long is made along the anterior border of the sternomastoid muscle, the center of the incision being opposite the cricoid cartilage. In cutting the superficial fascia the external jugular vein must be avoided. The deep fascia is opened, the sternomastoid muscle is retracted outward,

and the omohyoid muscle is retracted downward; the carotid artery is located as it crosses the carotid tubercle, the descendens noni nerve is on the sheath of the artery. The sheath is opened at its inner side, the artery is freed from the sheath, and the needle is passed from without inward.

3. Normally, the tip of the olecranon process, in extension, is in a line with the two condyles; in semiflexion it lies below the line of the condyles. In dislocation of the ulna this relationship is changed; in fracture of the radius this relationship is not changed.

4. *Lumbar puncture* "is the operation for withdrawing cerebrospinal fluid from the subarachnoid space of the cord. It is employed as a means of diminishing cerebral pressure in hydrocephalus, cerebral tumor, uremia, and tuberculous meningitis, but in these cases it has proved of little or only of temporary therapeutic value. It may be of some service in cerebrospinal meningitis. The condition of the patient with a fracture of the base of the skull is sometimes temporarily improved by the operation. Pain is often temporarily relieved. In the performance of a brain operation the brain may bulge so that the dura cannot be sutured. Lumbar puncture makes suturing possible. Puncture is the preliminary step of spinal anesthesia. In some cases the examination of the fluid has been of great diagnostic value. . . . The back should be carefully sterilized and through asepsis must be preserved in every detail. The patient may lie on the right side with the left knee well drawn up, may lie prone with a pillow under the belly, or may sit in a chair with the body bent forward. The site of the intended puncture may be frozen with ethyl chloride, but no general anesthetic is required. A Pravaz syringe is employed. The needle, which should be three inches in length, is guarded by the surgeon's index-finger and the point is inserted one-half inch to the right of the median line and between the third and fourth lumbar vertebræ. It is pointed upward and a little inward under a spinous process. In a child the needle enters the canal at a depth of from two to three centimeters; in an adult, at a depth of from four to six centimeters. The fluid is permitted to fall drop after drop into a sterile test-tube." (DaCosta's *Surgery*.)

5. *Wyeth's pins, and hip amputation.* "The outer pin is inserted an inch and a half below and a little internal to the anterior superior spine of the ilium, and is brought out just back of the great trochanter. The inner pin is entered one inch below the level of the crotch and internal to the saphenous opening, and it emerges an inch and a half in front of the tuberosity of the ischium. A sterile cork is pushed on the end of each pin, to save the surgeon from wounding himself upon the sharp points. After the limb has been emptied of blood by holding it in a vertical position for five minutes and stroking it from the periphery toward the body, the constricting band is fastened about the limb above the pins. In the bloodless method of Wyeth after the passage of the pins and the application of the band of the Esmarch apparatus, the amputation is proceeded with. The hip is brought well over the edge of the table, a circular incision is made down to the deep fascia, six inches below the constricting band, and is joined by a logitudinal skin-cut reaching from the band to the level of the circular incision, and the cuff is reflected to the level of the lesser trochanter. The muscles are cut by a circular sweep at the level of the retracted cuff, the capsule of the hip-joint is opened freely, the cotyloid ligament is cut posteriorly, the thigh is bent upward, forward, and inward to dislocate the head of the bone, and, using the thigh as a handle, the round ligament is incised and the limb removed. After ligating the vessels and introducing drainage-tubes the flaps are sewn together vertically." (Da Costa's *Surgery*.)

6. Psoas abscess. "Chronic collections of tuberculous fluid, which form in the cellular substance of the loins, behind the peritoneum, and descend in the course of the psoas muscle. *Etiology.*—This disease arises generally from cold, strains, or falls, and from general debility, and not infrequently from spinal affections. *Symptoms.*—At the beginning there is little or no pain, no inflammation, nor is there febrile disturbance; but previous to the appearance of any other symptom the patient has an unaccountable feeling of weakness across the loins, accompanied by pains, usually giving no indication of the seat of the disease, and likely to be regarded as rheumatic. The tuberculous fluid is formed slowly and imperceptibly, and occasions, at first, no manifest swelling or fluctuation. When the lower dorsal or upper lumbar vertebræ are diseased, the pus enters the sheath of the psoas, or the substance of the muscle, and is firmly bound down in front by the fascia covering this muscle and the iliacus. The abscess proceeds as far as the tendon of the muscle by Poupart's ligament, where its further progress will probably be arrested. When it has attained considerable magnitude, it passes under Poupart's ligament, between the femoral vein and the symphysis pubis. The diagnosis is difficult when the abscess is unattended by an external tumor. The swelling takes place in various situations and assumes different aspects; it may appear beneath the femoral fascia, or it may descend as far as the knee and form a prominent swelling; sometimes it will make its way downward into the pelvis and occasion a swelling in the neighborhood of the anus, or it may appear in the vicinity of the vertebræ, or, again, it may make its way through the abdominal muscles. *Treatment.*—A psoas abscess should be opened, if possible, before it leaves the abdomen, just about Poupart's ligament, external to the line of the vessels. If it points at the inner side of the thigh, an incision may be made in that situation, in addition to the one above Poupart's ligament. Under antiseptic precautions, the sooner the abscess is opened, the better, for the abscess cavity is then smaller than if the surgeon waits until the fluid has burrowed its way into the thigh. Free drainage should be established from the groin to the lumbar region. Antiseptic dressings must be continued as long as there is discharge. General tonic and alterative treatment are indicated." (Gould and Pyle's *Cyclopedia*.)

7. *Keloid* is a skin tumor resulting from overgrowth of connective tissue; it generally arises from scar tissue.

*Papilloma* is a tumor consisting of hypertrophied papillæ of the skin, with connective tissue and blood-vessels; it has a covering of epithelium.

*Epithelioma* is a malignant tumor composed of epithelial and connective tissue cells; it begins on the surface and invades the underlying tissues.

8. *Coxa vara* is a condition in which the neck of the femur is horizontal, or even directed downwards. It is met with at two ages; in infants of three or four years of age, and due to rickets; in adolescents of thirteen to eighteen years, who have to stand much or carry heavy weights. Slipping down of the epiphysis is said to be a cause in some cases. The neck is bowed forward, and the trochanter is thrown backward, so that the leg is everted.

*Symptoms* begin with some pain in the hip and limping. The trochanter is raised above Nélaton's line, and there is marked rotation outwards of the limb. True shortening is present. The movement of external rotation is increased; flexion, abduction, and internal rotation are diminished, as the trochanter is stopped by the rim of the acetabulum. There is no swelling or tenderness, as in hip disease, or sliding of the head of the bone, as in congenital dislocation. (*Aids to Surgery*.)

9. *Salvarsan is indicated* in: "(*a*) Early cases of syphilis in which contagious manifestations are appearing in rapid succession, in spite of efficient mercurial medication. (*b*) Cases in which, for family or social reasons, it is of special importance to limit the production of infective material or cause the disappearance of symptoms in the shortest possible time. (*c*) Cases in which the symptoms are recalcitrant to the action of mercury, or in which, from idiosyncrasy, that drug cannot be exhibited in sufficient dose. (*d*) Cases of syphilophobia and syphilomania, whether showing symptoms or not; its psychic action in these instances being of greater importance than its therapeutic effect. (*e*) Very early cases of the sequelæ of the luetic infection, before organic changes have occurred."

*Salvarsan is contraindicated* in: "(*a*) Cases that are doing well, *i.e.* in which the disease is pursuing its normal mild course under ordinary medication. (*b*) Cases with serious organic lesions of the eyes, kidneys, heart, or other internal organs. (*c*) Cases with postsyphilitic or parasyphilitic disease of the internal organs, more especially of the nervous system." (*Progressive Medicine*.)

Salvarsan should be administered intravenously. The method is described by Hirsch as follows: "Two graduated glass containers of 250 c.c. capacity are used. Into one is poured 150 to 200 c.c. of sterile salvarsan solution. The other is filled with a like volume of sterile saline solution (made with sterile distilled water and chemically pure sodium chloride). The saline solution is allowed to flow out of the needle so as to expel all air from the tube. The stop-cock is now reversed, allowing the salvarsan solution to flow out of the needle, thereby expelling all air from its tubing. The stop-cock is now reversed to its former position, until the saline solution is running in a slow even stream from the needle. The desired site of puncture is selected on the arm or at the elbow, and the needle is gently pushed or thrust through the skin into the vein. Meanwhile the saline solution is continuously running from it. The needle is held at about an angle of 10 to 15 degrees to the skin surface, depending on the prominence and caliber of the vein. Care must be exercised not to push

the needle through both walls of the vein. This can be avoided by not introducing too long a surface of the needle into the tissues. The patient's arm having been carefully cleansed, a ligature in the form of an ordinary soft rubber catheter or tubing is tied around the middle of the arm, above the selected site of puncture, and the patient is requested to tighten the fist so as to make the superficial veins more prominent. Some prefer to expose the vein in all cases. As soon as the needle has entered the vein, the rubber ligature is released by an assistant, the stop-cock of the needle is reversed, and the salvarsan solution flows through the needle into the vein. Hence there is no danger of any salvarsan solution getting into the subcutaneous tissues. The intravenous injection must be given slowly, not less than ten minutes being spent in the process; and the solution must be quite warm when poured into the container so as to allow for its cooling when flowing into the apparatus; when it enters the vein, the solution should be about the temperature of the blood. An ideal intravenous injection is painless."

10. Microorganisms are introduced with the foreign body; and, at the same time, the trauma produced by the foreign body lowers the resistance of the tissues.

### HYGIENE.

1. "The pail system and the dry earth closet are the principal types of the dry methods of sewage removal. In the pail system the excreta are simply received in boxes or tanks, and these are emptied whenever necessary. In the dry-earth closet a receptacle containing dry earth is placed in the closet and about ½ kilogram of dry earth is thrown over each evacuation. The earth is a natural deodorizer and the mass remains inoffensive for a long time, the fecal matter being finally entirely disintegrated. A separate receptacle is supplied for the collection of the urine. This system is the least objectionable in such localities where a general water supply is not available, or where the climate is too severe to render a water-closet safe and serviceable. In the dry methods of removal the final disposal of the fecal matter is as fertilizer upon cultivated land." (Bergey's *Hygiene.*)

2. *Diseases carried by infected water:* Typhoid, cholera, dysentery, diarrhea, indigestion, goiter, intestinal worms, and lead poisoning.

3. A disease is said to be *endemic*, when it is found in a certain locality more or less constantly; it is said to be *epidemic*, when it affects a large part or the whole of a certain community; and it is called *pandemic* when it is prevalent over a very large portion of the continent at one time.

4. Consumptives should abstain from spitting anywhere except in a proper receptacle; the sputum should be disinfected or burnt; they should sneeze only in their handkerchiefs; they should abstain from kissing; their rooms should be free from carpets and hangings, and should be frequently cleaned and disinfected.

5 Pure food and drug laws should be framed with a view to protect the public, should be fair and broad in their intent and interpretation, should distinguish between fraud on the purchaser's health and fraud on his pocket, and should be impartially enforced. All goods "passed" under such laws should be so designated; goods should be labeled and their contents and weight or volume plainly stated.

6. *Chronic* alcoholism may produce dyspepsia, coated tongue, fetid breath, morning vomiting, vertigo, muscular weakness, bloated face, impaired will-power and memory, and blunted moral sense.

7. To prevent the spread of typhoid fever: Flies should be kept out of the house as far as possible, by means of screens or otherwise; all discharges from the sick person must be disinfected; all utensils, dishes, etc., used by the patient must be thoroughly cleansed and boiled every day; soiled linen must be soaked in a disinfectant solution before being washed; after each attendance on a patient, physicians, nurses, and others should wash their hands in a disinfectant; thorough sterilization of all bedding, etc., must be performed after the disease is over. Further, each household should boil all water that is to be used for drinking or for washing dishes, etc.; milk should be boiled also; and no ice should be put *in* water or other drink or food.

8. A *disinfectant* is an agent which restrains infectious diseases by destroying or removing the microorganisms which cause them. A *germicide* is an agent which destroys bacteria and their germs.

9. The window and door should be opposite, and both should be left open whenever possible. The window should look out on the open, and not a court or air shaft. A board may be placed underneath the lower sash of the window, this will allow the entrance of fresh air at the junction of the sashes without causing any draught.

10. The most common cause of blindness in young children is ophthalmia due to the gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth.

### BULLETIN OF APPROACHING EXAMINATIONS

| STATE | NAME AND ADDRESS OF SECRETARY | PLACE AND DATE OF NEXT EXAMINATION† | |
|---|---|---|---|
| Alabama* | W. H. Sanders, Montgomery | Montgomery | July 8 |
| Arizona* | J. W. Thomas, Phoenix | Phoenix | April 7 |
| Arkansas | F. T. Murphy, Brinkley | Little Rock | May 13 |
| California* | C. B. Pinkham, 929 Butler Building, San Francisco | San Francisco | April 1 |
| Colorado | David A. Strickler, Empire Building, Denver | Denver | April 1 |
| Connecticut* | Chas. A. Tuttle, New Haven | New Haven | Mar. 11 |
| Delaware | J. H. Wilson, Dover | Dover | June 17 |
| Dist. of Col'ba | Geo. C. Ober, Washington | Washington | April 8 |
| Florida* | I. D. Fernandez, Jacksonville | Jacksonville | May 12 |
| Georgia | C. T. Nolan, Marietta | Atlanta | May .. |
| Idaho* | O. J. Allen, Bellevue | Boise | Apr. 1 |
| Illinois | J. A. Egan, Springfield | Chicago | April .. |
| Indiana | W. T. Gott, Crawfordsville | Indianapolis | July 8 |
| Iowa | G. H. Sumner, Des Moines | Des Moines | .. |
| Kansas | H. A. Dykes, Lebanon | Topeka | June 10 |
| Kentucky | J. N. McCormack, Bowling Green | Louisville | .. |
| Louisiana | A. B. Brown, Cusach's Bldg., New Orleans | New Orleans | June 5 |
| Maine | F. W. Searle, Portland | Portland | March 11 |
| Maryland | J. McP. Scott, Hagerstown | Baltimore | June 17 |
| Massachusetts* | E. B. Harvey, State House, Boston | Boston | March 11 |
| Michigan | B. D. Harison, 205 Whitney Building, Detroit | Ann Arbor | June 10 |
| Minnesota | W. S. Fullerton, St. Paul | Minneapolis | April 1 |
| Mississippi | S. H. McLean, Jackson | Jackson | . |
| Missouri | Frank B. Hiller, Jefferson City | St. Louis | .. |
| Montana* | Wm. C. Riddell, Helena | Helena | April 1 |
| Nebraska | C. P. Fall, Beatrice | Lincoln | .. |
| Nevada | S. L. Lee, Carson City | Carson City | May 5 |
| N. Hampshire | Henry C. Morrison, State Library, Concord | Concord | July 8 |
| New Jersey | H. G. Norton, Trenton | Trenton | June 17 |
| New Mexico | W. E. Kaser, East Las Vegas | Santa Fe | April 14 |
| New York | H. H. Horner, Univ. of State of New York, Albany | New York / Albany / Syracuse / Buffalo | May 20 |
| N. Carolina | B. K. Hays, Oxford | Moorehead City | June 3 |
| N. Dakota | G. M. Williamson, Grand Forks | Grand Forks | .. |
| Ohio | Geo. H. Matson, Columbus | Columbus | June .. |
| Oklahoma* | J. W Duke, Guthrie | Oklahoma City | April 8 |
| Oregon | B. E. Miller, Portland | Portland | .. |
| Pennsylvania | N. C. Schaeffer, Harrisburg | Philadelphia / Harrisburgh / Pittsburgh | June .. |
| Rhode Island | G. T. Swarts, Providence | Providence | April 3 |
| S. Carolina | H. E. Boozer, Columbia | Columbia | June 10 |
| S. Dakota | L. G. Hill, Watertown | | .. |
| Tennessee | C. A. Abernathy, Pulaski | Memphis / Nashville / Knoxville | May 1 |
| Texas | W. L. Crosthwaite, Waco | Austin | June .. |
| Utah | R. W. Fisher, Salt Lake City | Salt Lake City | April 7 |
| Vermont | W. Scott Nay, Underhill | Burlington | July 8 |
| Virginia | Herbert Old, Norfolk | Richmond | June 24 |
| Washington* | F. P. Witter, Spokane | Tacoma | July 1 |
| W. Virginia | H. A. Barbee, Point Pleasant | Huntington | April 14 |
| Wisconsin | J. M. Beffel, Milwaukee | Madison | July 8 |
| Wyoming | A. B. Tonkin, Riverton | Cheyenne | March 5 |

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

**Primary Adenomata of Liver.**—H. C. Gordinier and H. R. Sawyer report a case of this condition possessing the following points of interest: (1) it presented the symptom complex of Hanot's hypertrophic biliary cirrhosis; (2) the study of the liver did not bear out the generally accepted view that multiple adenomata are always secondary to and in compensation for liver cirrhosis; (3) it showed the importance of recognizing the fact that symptoms identical with those produced by either the atrophic or the hypertrophic form of cirrhosis may take their origin from multiple adenomata.—*American Journal of the Medical Sciences.*

**Aberrant Thyroid Tumor from the Base of the Tongue.**—W. G. Howarth reports the case of a patient who complained of great difficulty in swallowing with occasional attacks of dyspnea. The tumor involved the base of the tongue in the middle line and was pressing against the lingual surface of the epiglottis. There had never been any symptoms of thyroid insufficiency. The thyroid in the neck was scarcely palpable, but at the time of operation, when a preliminary laryngotomy was performed, both lateral lobes were found to be present, though no trace of the isthmus could be detected. The section showed a fibrous capsule outside a layer of thyroid glandular tissue; the center of the tumor was made up of blood-clot.—*Proceedings of the Royal Society of Medicine.*

# Medical Record

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## Original Articles.

### MALIGNANT DISEASE OF THE TONGUE AND MOUTH.*

By ROBERT ABBE, M.D.,

NEW YORK.

SENIOR SURGEON TO ST. LUKE'S HOSPITAL.

THE subject I have chosen is of interest to the physician as well as the surgeon, to reconsider whether the status of treatment has changed in the last decade; whether new agents or methods of combating the dread disease have been added to our equipment, or whether theories or methods of treatment can better the condition of our patients.

The physician will have to differentiate several varieties of growths and ulcers of the tongue, lips, cheeks, gums, and palate, many of which are wholly innocent, but may later become malignant, and it is of extreme value to him to allay anxiety, or to direct his skill against present danger.

I shall make no attempt to elaborate the subject beyond a personal experience which furnishes ample material for discussion.

The basis of these remarks I have taken entirely from my private office note books which record every personal case in my lifetime. I have culled out of the records of only the past ten years such cases as bear on this subject. These I have subjected to personal study and shall present only my conclusions.

During these ten years, exclusive of hospital service, I have notes and illustrations of 40 cancers of the tongue, 15 leucoplakias, 27 sarcomas of the jaw and epuli, 40 sarcomas of the pharynx and tonsil, and carcinomas of mouth and cheeks, besides many tumors of the lips, palate, and buccal mucosa.

These ten years have seen arise hopes of newer remedies like *x*-ray, radium, and fulguration, to supplant caustics, cautery, and knife.

I have candidly refused to discard the knife whenever experience had shown its value—and believe it will be our sheet anchor indefinitely.

My work has been pursued with some hope but no illusions, and I am sure the ground I have gone over need not be gone over again. Whoever wishes to repeat the strain in this field will be thankful to be saved some doubts by my experiences. Goethe said: "Blest be the man who cures my doubts and gives me none of his."

The appeal of suffering in diseases of the mouth is quite equal to, if it does not exceed, the misery of diseased states in other parts of the body. The discomforts of eating and talking, the desire to conceal disease of the tongue, the suffering from salivation and pain make this field one of the greatest to one who wishes to be a benefactor.

*Paper read before the Practitioners Society, January 3, 1913.

At the same time it is surprising how many mouth conditions are not known of, by patients, until disease has far advanced; so few people look at their tongues or throats in a mirror until pain comes. It is quite common to discover an exostosis in the middle of the roof of the mouth, hard as ivory, which had existed for perhaps twenty years unknown to the patient until a sip of hot soup makes it sore by blistering it. Patients are often surprised by their physician first discovering advanced cancer inside the cheek, or on the tongue which had been growing for many months. It is not surprising then that both physician and patient desire to "take a chance" on its soon going away, and, as Butlin says, thereby "give it a chance to grow," until surgery is difficult.

It is fair to say that the diagnosis of benign from malignant tumors is not always easy at sight. There are frequent warty growths, papillomas of the tongue, or true warts of the lips, tongue, or inside of the cheek which simulate early cancer. Recently I saw a large wart on the roof of the mouth, which being identified by its mulberry-like surface, was permanently cured by one radium application. There will be seen sometimes small hard areas of induration associated with tongue irritation, which disappear with removal of a cause, but they are so rare that we may regard any hard spot in, or under the tongue, with suspicion.

Some fifteen years ago I excised a solid tumor the size of a medium olive, grown into the surface of the tongue, which has never come back. Dr. Ferguson and Dr. Hartley pronounced it angiosarcoma. It was encapsulated and had grown rapidly. This form is rare.

But the early epitheliomas and papillomas are the varieties most frequently seen and call for differentiation. The papillomas are raised, red and firm, with bases buried in the thick derma of the tongue quite like epitheliomas, but lacking in the infiltrating quality which can be felt when the base is pinched between the examining fingers. This quality is usually sufficient to decide the diagnosis. Yet sometimes removal of a small section of a papilloma will show microscopic changes beginning in the base, of true epithelial type. Such tumors usually come to the surgeon after they have been irritated by futile applications of nitrate of silver or caustics.

The question of whether a true wart is liable to alteration into cancer is of importance. It is a species of cant in our profession to repeat this statement generation after generation without challenge. But it is so rare to identify such changes, and the cases of persistent recurrence and removal of true papilloma, as in the vocal cord region, for forty years or more without alteration, throw such a doubt about the peril of cancerous degeneration that we may well regard the true papilloma of the mouth and tongue as benign.

I have seen several such that have recurred for several years without changing to cancer, which have been referred to me as tongue cancers and which have been instantly and permanently cured by one application of radium. This happy outcome does not happen when the growth is epithelioma.

I have illustrated in a colored plaster cast of such a large ulcerating growth of the tongue which I present for inspection, one case in my own experience, which represents an important border line type.

In the center of the middle surface of a man's tongue was a raised ulcer of the size of one's finger nail. It presented the appearance of early cancer, but being in an unusual situation and not seeming to be buried in the tongue tissue I diagnosed papilloma, and sent the case to Dr. Farquhar Curtis for corroboration before treatment. Dr. Curtis based his opinion of its non-malignancy on the absence of an infiltrating base. I cut out a section for Dr. Wood for report. He said: "Thickened epithelium with mitoses, either papilloma or epithelioma."

I applied radium for two hours and rapid cure followed, with no return after four years.

I am not yet convinced that there is much danger of warty growth undergoing malignant degeneration. I have never seen it occur in the warts of the skin, which even after years of chronic thickening and painful inflammation of the base, are immediately and permanently cured by radium, no matter how large they may be.

As illustrating this view, I may cite the case of the late Dr. X, who had for three years a vicious wart over the end joint of his middle examining finger. It had become so tender, cracked, and persistent that he had been advised by able surgeons to have it excised on account of its probably having undergone change to epithelioma. He appealed to me and sat one hour in my office with one radium cell held on the growth. It promptly melted away without scar, and for three years never came back.

I venture to quote this as an up-to-date opinion of eminent surgeons regarding a "possible change" which I have never seen occur. If the growth had been epithelioma it would have left a scar, but as it was only irritated papilloma, a normal skin remained. Such history applies perfectly to papilloma of the tongue. I show you some excellent illustrations, and they are easily identified and readily cured by radium, which is not true of epitheliomas.

I will speak briefly of malignant growths of the gum and lower jaw. These come to the notice of the physician as either red, bleeding, granulation-like growths between the teeth and spreading on the gum, or, as firm, dusky growths of the alveolar gum, growing from the bone itself. The former are mostly epithelioma, but in one case I found the small bleeding growth pathologically was giant cell sarcoma, which recurred, and then suffered the usual fate of cure by radium.

The lesser types of epithelioma, often of great annoyance by bleeding to the tooth brush and painful to touch, are easily cured by radium without sacrificing the teeth, but when advanced in size are only to be treated by excision and radiumizing the base, which results in permanent cure.

I have had twenty-seven cases of giant cell sarcoma and epithelioma of the jaw; one sarcoma with extensive bone destruction, which I have once illustrated before this society and again tonight show the patient well, after eight years.

I have demonstrated (MEDICAL RECORD, August 27, 1904) that radium is a specific cure for pure giant-cell growths, and, unless there is a preponderance of spindle cells or fibrous tissue in the tumor I have no reason to alter this view. If we were to apply radium after excision of these growths there might be some question as to which of the two acts had wrought the cure; but in numerous cases which I have brought under the test of radium without other surgery and obtained permanency of cure, we have illustrated its unique action unaided.

Now let us consider true cancer of the tongue in the grave form in which it is so often presented to us. We may speak of it as the inoperable form. Every surgeon is guilty of operating on such cases. Hopeless as far as radical cure is concerned but sometimes worthy as far as relief from present distress. Also, perchance, worthy from a psychological point of view, as calling forth what the late Dr. Hammond called "the exhilarating sentiment of hope."

I refer to that large class where half the tongue is invaded, where the surface is broken down and opened up as a foul ulcer, and where numerous submaxillary or cervical lymphatics have absorbed the poison. Grant that operative surgery is refused by doctor or patient, have we any help in sight?

Locally, solutions of carbolic, chromic, or other purifying acids help materially in keeping the ulcer clean, but in no other way. Fulguration I have tried with no other than destructive effect, as far as appears in my limited use of it.

The Röntgen ray I have often tried, but the difficulty of its efficient application is usually insuperable. Yet it has undoubted value and retards growth. Radium I have given much consideration to. It is the most easily applied and acts somewhat like Röntgen ray; yet after assiduous and conscientious trial I would disclaim any permanent value in its use. From its undisputed curative effect on the same type of disease on the skin in early stages we had reason to hope for help in this agent.

Of more interest is it to ask, have we been able to prove it of any value whatever?

I have studied a large number of tongue cancers of the "explosive" type (to adopt a word dignified by the usage of Sir James Paget as applied to sebaceous cysts when they become inflamed and degenerate into cancer, the "explosive wens").

When the tongue cancer reaches the stage of a foul excavated furrow along the half tongue, with a heaped up mass of new growth about it, looking like an overcooked sausage which has burst its skin, we have reached a point in the patient's endurance which is about intolerable. Nothing known to surgery has heretofore altered or improved this condition. In many such cases I have eagerly watched the effect of strong radium. A few such have been referred to me by Dr. Bull, Dr. Blake, and Dr. Brewer and others who have watched and corroborated this result, namely, that the mass often begins to shrink in two weeks until the ulcer is reduced to a half or quarter of its size, and the massive tongue shrinks and becomes clean. In the substance of the tongue can usually now be felt one or two hard masses like primitive cancer spots around which a fierce inflammatory or bacterial warfare has waged, which had been checked by radiumization, leaving the original cancer unaffected. Practically it seems to be unaffected, because it soon takes on renewed growth, like the rallying of any battling giant, unconquered in the

end. Even the submaxillary lymphatics usually take part in the shrinkage, only to light up again after six weeks or two months.

So uniform has this action followed that I have been inclined to attribute it to a temporary control of bacterial infection, either by the specific bactericidal power of the agent or by the hyperemia called out by the intense play of electrons in the tissue.

If we could only go a little further in these cases with radium or find some new agent to take up the battle at this point, like reinforcements of fresh troops at a decisive point in battle, we would be nearer victory. But increase in use of radium now becomes too painful, whereas at first it allays pain like an anodyne. We must therefore wait on further experiments and offer only this much for study and hope.

But science is not easily downed. Consider the early stage of cancer, for one cannot draw a sharp line between the epithelioma and cancer.' The tongue is like the skin. Its layers take on the same morbid action. Epithelial thickenings of the squamous cells are true leucoplakia, such as we have seen to-night—continued irritation carries overgrowth into the papillary layers and we have epitheliomata, or, prolonged into the tongue, we have cancer.

It is in the first stage that radium will conquer all cutaneous keratoses. In the second or epithelioma it is equally potent. Will the same benefits occur on the wet surfaces of the mouth? To put conclusions first and demonstration later, I would say "possibly yes."

But no one yet has known the right dosage or method of using this agent, so that excepting in leucoplakia and thin underlying epithelioma one cannot yet show cures, but in leucoplakia it seems to be the only known efficient remedy. Of leucoplakias I have shown you good illustrations. I have studied my notes of about fifteen such cases.

Some years ago I showed to Mr. Butlin some colored casts which excited his greatest hope. He said, as every surgeon knows, that he had never found anything to affect them. Even shaving them off, caustics or acids or actual cautery were only temporary measures and produced worse scars. He said he would welcome as a benefaction the relief by radium. I may say that, properly applied, this agent can cure many of them and heal the associated epithelial hardening and ulcers that are usually present. It requires patience, but the end justifies the time. I speak of time because I have found that one or two well thought out applications, with a delay of at least two or three months, give by far the best results. On the other hand, the use of weak specimens, applied week after week, produce a cumulative and hurtful effect and prevent the observer from knowing what he may have accomplished.

The growths of cancer inside the cheek are extremely difficult to affect unless they be in the leucoplakia stage. Usually they grow midway in the cheek where the mucous membrane is of the thin epithelial type with little underlying dermal structure, and have a fumugating aspect often based on ture. Often they are based on the buccinator muscles into which they penetrate. It is utterly useless to expect radium to follow into such a base.

I show you illustrations of several such cases which incidentally demonstrate the causes of their growth. With one exception they have been exactly located where the victim had held his tobacco quid for years. The exception was a woman whose rough tooth had irritated the cheek. You have seen the patient to-night. The disease had involved also the gum and jaw. Dr. Bull sent her to me as inoperable in that stage and wished me to try radium. For one month the disease melted away to one-third, as if it had been a wart. I then excised the cheek and jaw because the disease in the bone would not yield. The result has been a perfect condition of health for five years.

How much the preliminary play of radium upon the tissues had to do with its permanent absence one cannot say, but it seems more often than not that there is some value in this association.

I would like to say a word about the causation of malignant disease of the mouth. Sarcoma, of the round or spindle cell type, is apparently congenital in origin, though long latent, and may best be cut out. Even so grave a case as I have shown you to-night of tonsil, pharyngeal, and cervical tissues has remained in perfect health for five years with no recurrence after excision.

But carcinoma is always the result of irritation, either by a tooth, a dental plate, tartar, a pipe stem, or tobacco.

The charge against nicotine is the most serious in the calendar. It is extremely rare to question a patient with advanced cancer of the mouth and not find that he has been a severe smoker or has chewed tobacco. If the question is answered evasively, or if he admits only gentle use of tobacco, his wife will usually come to your rescue and say that he either puts in a little chewing tobacco when he rises and takes a little out when he goes to bed, or that he smokes pipes or cigars habitually. This close relation with nicotine was emphasized by Butlin and has been widely believed in. I find complete corroboration in my own experience and have come to regard excessive and continuous use of nicotine as a great risk to susceptible tissues. It is usually after twenty or thirty years that the beginning of an epithelioma shows and insidiously advances. Most often it starts either at the contact points of the pipe, or streams of hot smoke on the tongue, or in the gutters where the nicotine lies in the mouth or where the quid rests between cheek and gum.

"Smokers' tongue" is a legitimate name for this ill-starred malady. One of the most threatening epitheliomas of the gum which I was fortunate enough to cure by radium, was in a young lady who for years had been an inveterate smoker of cigarettes. The cast I show you.

I have no desire to antagonize the social custom of smoking in moderation, but it is our duty to declare the menace of tobacco as a cause of most cancers of the mouth. When the first spot of leucoplakia comes it is wiser to stop the use of tobacco at once and forever.

When the inside of the cheek is extensively involved by cancer it is still possible to excise part of the cheek and expect to cure, as in the case shown to-night, but it is necessary to excise half the lower jaw in order to give free play in eating and to obtain enough sound tissue to close the defect. The cosmetic effect of this seemingly mutilating operation is remarkably good and the danger is almost nothing.

The object of this paper will have been accomplished if I have shown that:

Thorough surgery is still the supreme reliance in eradication of malignant disease of the mouth and early resort to it, is the patient's chief hope of cure.

Radium has many interesting conquests in this field, but in advanced cases of cancer its good effect is transient; in giant-cell sarcoma it is a specific cure.

The vicious causative effect of tobacco in the mouth is demonstrated.

Leucoplakia has no curative remedy unless it be radium.

13 West Fiftieth Street.

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# OCCUPATION NEUROSES;*

## THEIR TRUE NATURE AND TREATMENT.

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The term neurosis concerning occupational disabilities is a misnomer; for disorders of occupation to which this name has been given are in reality psychodynamic inhibitions or disorders in the habitual series of coordinated associations gained by education in some art. A want of harmony in the controlling of the mechanism is the fault. Hence the disharmony is always psychological. This is easily proved by the fact that the neuromuscular apparatus which fails to perform a particular occupational act can quite well accomplish any other act, and this by means of the same muscles, nerves, and brain areas. Hence there fall to the ground the interpretations of Hartenberg that hypotonia is the efficient cause of the professional dyskinesias attributed to neurosis. Nor can we except Kouindjy's explanation of an ataxia, which he believes because of the favorable effects of reeducation. Neuritis is often diagnosed but only by those ignorant of clinical neurology. Hypotonia or ataxia, when present, is a mere secondary effect of a primitive dyskinesia induced by a disharmony which has originated ideationally, although the mechanism through which it occurs is largely emotional.

The following considerations are explanatory: The induction of emotions by ideas is most clearly shown in a more acute form than occurs during the steady pursuit of an occupation. We find it best illustrated in the psychogenetic effects of accidents and the maintenance of these by the patient's own painful ruminations thereupon through what amounts to chronic fear and its effects upon the internal secretions.

The Emotion Excited by an Injury as a Perturber of the Apparatus of Internal Secretion.—An accident short of lesion may create in a susceptible person so great a fear as to cause a sudden increase of secretion by the thyroid gland. The recent researches of Crile have shown that this occurs almost constantly in patients with hyperthyroidism when they are frightened by the prospects of an operation. It occurs also in these subjects as a result of anxiety or unusual excitement. Crile believes that the thyroid gland is an organ by means of which there is rapidly available a store of an activating substance for the use of the neuromuscular apparatus when there is special need of its greatest power. Such an occasion is presented by the need for escape from danger. As the preservation of the species in locomotory animals may depend upon capacity to respond suddenly with the maximum of vigor against impending danger, there has developed through the long course of phylogeny this special organ of storing and rapidly setting free when required such a substance as the thyroid juice. But it would be a mistake to confine the need for the greater activation of the gland to physical escape from danger in the crude sense. In the higher animals life is no longer regulated by experiences purely phylogenetic, by the instincts. It is in the main controlled by ontogenetic incidents which we call experience and which modify the reactions in fashions incalculably complex. The determinators of these modifications we call association of ideas. Now, quite apart from the fear of bodily harm, there is a vast series of possible events which man seeks to avoid and which he apprehends as dangers from which to escape. It is reasonable to believe that psychological situations of this kind are capable of reflexly demanding the hyperactivation afforded by the thyroid juice. That is, fear from any source may create a temporary hyperthyroidism. But that the thyroid secretion is not the only one modified by emotion has recently been shown by a brilliant research of Cannon. He has shown that the emotion of fear in animals is capable of stimulating the flow of adrenal secretion. He demonstrated that in frightened animals the blood from the adrenal vein is so rich in adrenal substance as to be capable of inhibiting peristalsis in an isolated strip of intestinal muscle. This is due to the presence of the adrenal substance in appreciable amount, since it requires contact of the latter with the intestinal strip in a one millionth solution at least to inhibit peristalsis. We knew that the emotion of fear could inhibit gastric secretion; and Pawlow has shown that certain emotions of anticipatory joy can induce a flow of this secretion.

While it lasts the fear state presents marked physical symptoms. It does so through the intervention of the automatic nervous system, which cannot be controlled directly by volition except in rare cases and those only after much practice. One such case I saw in Philadelphia recently with Dr. J. Madison Taylor. The man in question, an athlete, had devoted much attention to control of his reactions. He is able to provoke at will the pilomotor reflex which produces the goose-skin appearance. He claims too that he can modify the rate of his pulse, but he did not succeed in demonstrating this clearly to me. He is able also to bring tears to his eyes by purely psychological means. Careful analysis shows that none of these reactions occur from pure willing. To produce them he has to assume a peculiar emotional state, which he describes as one of mystery. His introspection of this is not clear enough for one to say that it is not a feeling of horror. He thinks it is not, because it is rather pleasant, but the pleasure may be that of accomplishing something for which he strives. The analysis need not further detain us; for I quote the case only to draw attention to the impossibility of affecting the automatic nervous system by direct volition and to show the need of the intermediary of emotion for provoking autonomic reaction. The above case may be compared with the simpler one described by Babinski, and which I observed in Paris in 1907. This timorous young girl without practice in control was so apprehensive of the pin scratch used to elicit

*Read before the Section of Industrial Diseases, International Congress of Hygiene and Demography, Washington, September 24, 1912.

the plantar reflex that she involuntarily drew up foot and leg at the approach of the pin, and then occurred pilomotor contraction upon the skin over the upper and outer part of the thigh overlying the muscles which contract in the defense reaction when one strokes the sole (reflex of tensor fasciæ latæ). The patient could not control this response in any way; and its strict localization is unlike that of the preceding case, in which the goose skin was general when it came at all. Of course, these cases are somewhat peculiar but horripilation is a very common reaction to alarm.

Other common consequences are alteration of pulse rate and pressure: the frequecy may become more or less than normal and the pressure may be raised or lowered. Perhaps these differences depend upon the neurological type, or they may be functions of the varying responsiveness of the ductless glands in various individuals or at different times. Upon the digestion, the effects of alarm are well-known to be poor appetite and constipation with all their accompaniments. Upon the respiration, fear acts by a complete arrest followed by exaltation, or mere shallowing may ensue. It is a consequence of the inhibition of muscular activity known as fear-paralysis. This may be regarded as a phylogenetic mechanism for stabilizing an individual preparatory to efficient action. The effect of terror upon the flow of urine and control of the bladder needs only mention. Even the ancients knew, too, how fear arrested the sexual functions.

But the autonomic modifications of secretions soon cease as the fear shock of the accident fades; and in a few days at most the animal experimented upon or the human being insulted resumes stable equilibrium.

Psychogenetic Factors in Modifying Ideas, Feelings and Acts.—But the benign eventuality is often interfered with in human beings by the property they possess of reviving in memory the ideas which clothe situations with horror, apprehension, anxiety. Especially prone to this damaging sequence are persons whose imagination has been made rampant by the cultivation of the credulous fears of childhood: their fear reaction to that which they do not understand is a dominant one, and they are easily beset by an idea linked with fear. The commonest of the fears which result from accident or injury is that of bodily harm. It is very hard for a person of this type, when ignorant of his own structure and functions, to shake off the foreboding created by an impressive catastrophe; and it must not be forgotten that what others regard as trifling the victim may look up as catastrophic, judged by its possible effect on him. Prepossession by the idea of one's own disability is an inevitable consequence. This leads to abstraction from and inattention to the affairs of ordinary life, which, if not trifling by comparison in the patient's mind at least, cannot claim the attention properly needed. Hence ensues the well-known diminution of the capacity to think, work or take part in social life. This incapacity, when the patient becomes aware of it, leads him to still further accentuate the result of his injury and thus to augment his alarm about his health. Thus is constituted the vicious circle of hypochondria. Even a nosophobia may ensue, such as the fear of lost manhood, insanity, paralysis. Alarm at this impending disaster must, of course, be distinguished from the primary alarm due to the accident itself.

The next step in the drama is the reaction against the actual absence of physical signs of injury and the reassurances of medical men. This takes the form of an unconscious search by the patient in ratification of his belief that he is indeed damaged. Hence arises the familiar exaggerations and falsifications of symptoms. These are made in perfect good faith and honest belief, but they lead to the simulation of disease pictures previously in mind or acquired in the course of the disorder. It is only after the patient begins to be convinced in his heart that he is mistaken that there ensues the deliberate self-deception of the desperate effort to preserve the respect of himself and his friends which he feels he would lose by admitting the absence of physical disorder after all.

By this mechanism may spring what Brissaud called sinistrosis. Even a favorable settlement of a law suit may not remove this attitude. Only skilful psychotherapy will do so; and in severe cases considerable time must be allowed to wear down the sinister habit of mind.*

This mechanism was clearly illustrated in the case of sinistrosis which I fully reported to the International Congress of Industrial Accidents at Rome, 1909.† The rapidity of the success of the treatment in this and other cases is due to the thoroughness of the analysis which leads to the comprehension as above described. This leads to the description of rational psychomotor discipline, by which the patient is enabled to reeducate himself toward getting rid of dyskinesis which is in reality a dysboulia. In the occupational psychoses, for so they are, the mechanism is entirely similar, as is well seen in the case which follows:

Case I.—F. W., aged thirty, a telegraph operator, complained of cramping of the wrist and hand while using the Morse sender, typewriter, or the pen. Cramp sometimes occurs upon lifting a cup to drink, but only if he thinks of it. It occurs also upon brushing his teeth; but only those on the right side. It does not occur upon lifting up articles, unless he uses the fingers alone, when cramp may occur; but he can wind his watch, button his coat and collar and perform other ordinary acts without cramping. The movements consist of a flexing of the wrist when using the Morse key; an extension of the ulnar fingers when using the typewriter; a rigidity of the wrist when brushing his teeth; a giving way and radial rotation of the wrist on lifting a cup to his mouth; a rigidity of the whole arm when attempting to write. He is completely incapacitated from his usual work, but is able to address envelopes in pencil in the rigid fashion mentioned. The personal and family history were unimportant except that he had a nervous sister and was disappointed that he could not follow his father's profession of medicine, and had to work from boyhood. He neither drank nor smoked.

*The mechanism has been discussed at greater length illustrated by cases in: "The Psychic Effects of Accidents," *Monthly Cyclopedia*, November and December, 1912; *see also*, "The Import of Recent Work on Hysteria," *J. A. M. A.*, December 21, 1912; "Ten Cases of Hysteria Successfully Treated Without Minute Psychoanalyses," *Washington Medical Annals*, January, 1912; *Post Graduate*, June, 1912. Psychological mechanisms are described in the causation of similarly induced disorders in children, where their status is much simpler in Genesis of Hysterical Obsession, Medical Record, March, 1910; "Juvenile Psychasthenia," *American Journal of the Medical Sciences*, December, 1912. *See also* author's writings in the *Journal of Abnormal Psychology*, especially June, 1910.

†See Medical Record, April, 1909.

Although ambitious, he does not think that telegraphing was his forte, for though he had tried hard enough, others with less education did better. He had not realized this, however, until he was too old to easily find something else which paid as well. Perhaps he had found learning harder than most people, because he tried to learn at night while working as a clerk in the daytime. Even although ten years ago, after falling from a bicycle, dislocating his shoulder, he had worked in pain for five weeks before reduction was made, no disability had followed (not, however, at the key, but writing). He had not learned the Morse key in the usual way of the lads who pick it up as office boys and evolve into operators; for he began intentionally to learn when he entered an office at fourteen, and after four years could send forty to forty-five words per minute steadily with few mistakes. The cramp occured suddenly six years ago with "a kind of loss of use of the wrist, which would go up in the air while he was using the keys." At the same time the hand would flex. At the period when this ocurred he had been sending in the daytime for a stock broker from 9.30 A.M to 4 P.M.; whereas formerly he had never used the key for more than three or four hours, and that in the evenings. The stockbroker's work had to be done quickly and he felt it a strain; but he liked it in spite of its arduousness, for it did not seem to interfere with his health, although he had to eat lunch in the few minutes he could snatch at his desk. His only worry before the cramp occurred was the fear of not being able to do his work and of losing his position. Just before his disability began he had found that he was not making his letters correctly, and could not go fast enough for the work. He had to give up his position in about ten weeks after the occurrence of the cramp. Physical examination was otherwise negative except for an exaggeration of the deep reflexes.

This summary analysis must be compared with and interpreted in the light of those I have published in *The Journal of Neurology and Psychiatry, Leipsic,* 1912, No. 19. There, three cases of writer's cramp of different complexity are fully presented, and the method of management which led to their recovery is described and the principles thereof are set forth. They illustrate occupational neurosis as follows:

Case II.—A paymaster was obliged to sign over 200 checks a day. After an attack of "grippe," his signature had become a little uncertain, and one day it was refused by the bank. Dread of losing his position further augmented his difficulty; but he consulted me early, and one interview placed him in the way of cure after a few weeks' absence from work. His hardly legible scrawl at that time contrasts sharply with the bold and clear signature two and a half years later. The steps in the treatment were: (1) Discovery of the cause; (2) removal of the besetment, and (3) correction of the awkward position of the hands and the excessive rigidity of the muscles of the arm. This last was accomplished by gymnastics designed to give free movements, and by the frequent practice of free writing in a smooth, large, round hand, a little at a time.

Case III.—A woman had always disliked correspondence, and in consequence wrote very rapidly. During a time of domestic stress and anxiety on account of sickenss she was particularly impatient of the Christmas letters she had to write; and the cramp ensued. When I saw her two and a half years later, however, there was no marked fear-affect nor insistent desire to recover. But in about three months she gradually became able to write a normal hand without difficulty, as a result of graduated exercises made possible by freeing her mind from the besetment which produced the cramp when she attempted to write.

Case IV.—Singers' cramp and pen paralysis in a psychasthenic young woman. At the age of nineteen she received, after a concert, an anonymous letter which created shame when she sang in public thereafter. Her anxiety to be a successful singer, in conflict with this shame, produced a pharyngeal cramp, in consequence of which she had to give up singing for some years. Fear of laryngeal tuberculosis also played a part in this. Some years later a period of stress and poor health, combined with hyperconscientious efforts to do full credit to a difficult clerical post, led to writer's cramp. She was sent to me two years later after various unsuccessful medical and orthopedic attempts had been made to cure her. She was in despair at being unable to write, as she had to make her living, and although she had persevered she could not face an audience in solo, so that her earnings as a singer were insignificant. After six months of most arduous treatment she became able to write perfectly with both left and right hands, and the singing cramp was greatly improved. She has already taken a clerical position and a choir position once more. In this case the chief difficulty was to overcome the patient's false belief in a physical disease, first in the hand, then in the shoulder, later in the constitutional state due to a hypothetical tape-worm, and finally belief in a cerebral defect of neurasthenic type not psychological in mechanism. Eventual success in removing these beliefs led to the fruitful practice of gymnastic and caligraphic exercises, which before that had only aggravated her disability. The patient has since relapsed, having become careless regarding psychomotor discipline.

These cases clearly show the prepossession of the patients by the interpretation. This notion breeds anxiety regarding capacity to perform the task required, whether the act be writing or singing or what not. The nervous erethism of the anxious state is concentrated upon the apparatus required for performing the desired act of occupation. In this way there is induced the state known to golfers as "pressing," and seen familiarly in the stammering movements of those who are apprehensive under unusual mental stress in the performance of an act. Physiologically there occurs an involuntary innervation, lacking in proper coordination, mainly of the muscles about to perform the desired act. Instead of being in a state of tonic relaxation, the normal physiological one, they are already beginning to contract before the voluntary inception of the professional act. Both agonists and antagonists may contract irrespectively of one another. The condition is quasivolitional, as it is contingent upon the mental processes preliminary to the occupational act. Its incoherence is due to emotion, and the emotion, fear, is due to the idea that because of a physical disorder the act cannot be performed. This idea has arisen in various ways, as shown by the cases.

Cramp Neurosis is a Tic.—When occupational neurosis is dyskinetic in type, as in the cases cited, the cause of the disability is in reality the preemption of the muscles required in the act by a

tonic tic. It is ideational in origin, and conforms in every way to the well-known definition of Janet into which I need not enter here, as I discuss it in the memoir cited and in the *Journal of Abnormal Psychology,* September, 1912. But when there is no question of dyskinesis in an occupational psychosis the mechanism is essentially the same. For tic is merely a motor obsession contingent upon the idea of certain situations within or without the body. Pure besetment without motor expression is essentially the same in a psychological sense, as so clearly shown by Janet, and neither of these manifestations is ever unaccompanied by phobia or angst. So much so that some have regarded anxiety as the genetic factor of obessions. The clinical evidence that this is not so is abundant. That it is the notion of the situation in the patient's mind which is the determinant of the emotional reaction of his body is shown by a series of analyses of children made by the writer before the American Psychopathological Association, May, 1912, as well as in a theoretical discussion with casuistical illustration (*Journal of Abnormal Psychology,* July, 1910).

Therapeutic Errors Contingent Upon the Term Neurosis.—It is this state of obsession, expressing itself in the fear of one's occupation, which has received the name of neurosis so unfortunately; for the name leads to the idea of therapeutic intervention toward the lower neurones, such as their stimulation by strychnine and other drugs believed to be tonic in effect; such as by giving douches to arouse the nervous system; by attempts to improve nutrition through massage, exercise, more nourishing food: by the imposition of rest on the supposition that there is exhaustion of the nervous system; by prescription of change of scene, under the idea that the patient's balance will be thereby restored. These measures, excellent enough when indicated, are quite beside the mark in the affection we are considering.

The essential preliminary to treatment is the getting rid of the genetic idea. But before this is done the patient must be thoroughly convinced of the fact that it is this idea that produces the disability and that his previous belief that the disability is of physical origin whether of muscle, nerve or brain, is utterly erroneous. In other words he must clearly comprehend the psychodynamic genesis of his condition. The second step is for him to reacquire control of the psychomotor mechanism required in his occupational acts. This can only be attained by practice. In proportion to the length of time the perverted kinesis has obtained, these efforts to rectify it are difficult and prolonged. Thus, the naval paymaster who had been incapacitated only a few weeks was restored in less than a month, after one interview. The woman who had practically ceased writing for two and a half years required four treatments and about four months of practice before she could again write freely. The young woman with the multiple professional cramps required six months of the most arduous discipline and frequent consultations before she could again write with the right hand and sing without cramp of the throat. In the cases of numerous telegraphers I have studied, no treatment at all was undertaken, because, in part, of the long standing of their condition; but mainly because the tiring work of a telegrapher does not leave enough energy for the arduous discipline required for reeducating the mechanism of the professional act so complex, delicate and exacting as the use of the Morse key.

Theoretically it is clear, and practically my cases show that there is only one direct therapeutic means for them. That may be summed up as psychotherapy. Of course the effort demanded in a psychotherapeutic education requires for its best fruit a well-nourished nervous system, and the patient's hygiene must, therefore, be rectified when defective; but that is only a help and not a cure. The same consideration applies to prophylaxis. It is, of course, desirable that workers should be well nourished and that fatigue should be minimized; but this in itself will not prevent occupational neurosis if the ideational seeds are not prevented from germinating in the minds of the workers.

1705 N Street.

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## THE MUNICIPAL CLINIC OF SAN FRANCISCO.

By JULIUS ROSENSTIRN, M.D.,

SAN FRANCISCO, CAL.

CHIEF SURGEON, MT. ZION HOSPITAL, CHAIRMAN ADVISORY COMMISSION, MUNICIPAL CLINIC.

In the latter part of 1902 a report on the matter of a restricted area for houses of prostitution was brought up before the police commissioners of the city and county of San Francisco. Through the years following nothing more than a discussion came of this report, which embodied the various methods employed in different cities of the world for the reglementation of prostitutes.

After the fire of 1906, and upon the proposal of its committee on health, pure food and tenement legislation, the Civic League of San Francisco, an organization consisting of some eighty-seven improvement clubs from all parts of the city, took up the matter of the general reglementation of prostitution and the desirability of enforced medical examinations. The work was referred to the joint committees (on education and public morals, Dr. G. Frink, chairman), and to the committee on public health, pure food and tenement legislation (Dr. Julius Rosenstirn, chairman).

A new report, based on a voluminous correspondence with the authorities of the various cities of this country and Europe, regarding their methods of reglementation of prostitution and their conclusions, was worked out by Dr. Frink, and it presented the recommendation that measures be at once taken for the proper medical examination and segregation of all unfortunate women engaged in this mode of life.

For several years fruitless efforts were made by representatives of the Civic League to have the authorities of San Francisco put these measures into effect.

In 1910 at last, upon the urging of and together with the Civic League, whose representative I had the honor to be, the Board of Health arranged a series of joint meetings of their own members, the State Board of Health, and a representative committee of clergymen of all denominations, for the consideration of the actual taking up of this work.

Finally, at a special meeting of the Department of Public Health of the city and county of San Francisco, held February 9, 1911, regulations were enacted of which the following is the preamble:

"In an effort to prevent the promiscuous dissemination of infection through the medium of venereal diseases, which class of diseases is included under the heading of communicable diseases, to minimize as far as it may be possible the dan-

gers arising from these loathsome maladies, and to that end to exercise an intelligent and systematic medical supervision over that class of individuals who through the nature of their habits render possible the spread of this class of diseases the Board of Health hereby enacts the following regulations with reference thereto—"

Briefly, these regulations then prescribed a certain circumscribed area in which houses of prostitution could be tolerated, the establishment of a clinic properly equipped with a suitable staff, medical and clerical, for the examination of women engaged in the practice of prostitution, specifying the period of time that may elapse between each examination and defining the duties of the police as ex-officio sanitary officers.

An Advisory Committee, of which I had the honor to be named chairman, was appointed to take full charge of the administration of the clinic and its finances, under the supervision of the Board of Health, its president being one of the members of the committee.

In compliance with these regulations, premises were secured at 682 Commercial Street, and opened March 21, 1911. About October of that year, through an order of the Superior Court, the McCarthy appointees on the Board of Health were removed from their positions, and the former appointees of Mayor Taylor, of the previous administration, reinstated. The reconstructed Board of Health did not care to continue its association with the Municipal Clinic, and the institution has since been continued independently under the sole control of the advisory committee, with the sanction of the mayor, the board of supervisors, and the police commission.

At the present time the Municipal Clinic is operated as follows: Under orders issued by the Police Department all prostitutes are obliged to register at the Municipal Clinic, and submit to a medical examination at stated intervals of five days.

Originally a segregated district was established, in which district houses of prostitution might be tolerated upon compliance with police regulations. This provision, however, is not strictly adhered to, the police commissioners allowing some houses outside the restricted district (strict segregation not having proved practicable, at least at present). The keepers of houses of prostitution are forbidden to harbor any inmate who does not possess a certificate from the Municipal Clinic showing that she had been found free from disease at her last examination. For the first offense of any infraction of this regulation the keeper of the house is called before the captain of the district and warned that a repetition will mean the closing of her house, a measure that has not proved necessary to date.*

Two police officers, specially conversant with and fitted for this character of work, are permanently detailed to the clinic and make daily visits to the various houses, checking up the inmates and seeing that the regulations are complied with.

Clandestine prostitutes who are arrested and brought before the police courts are sent by the police judges to the Municipal Clinic for examination pending the disposal of their cases, and on condition of having their sentence suspended are induced to present themselves for subsequent regular examinations.

*December 18 and 19 the first enforcement of this order was carried out, including two houses belonging to a single owner who had violated this rule.

Low dance halls and similar resorts with female attractions are regularly looked over now, and we expect within a short time to enroll the women contingent of these places on a special list of our clinic and oblige them to carry regular books.

The clinic is operated by a citizens' committee, known as the advisory committee, consisting of Dr. Julius Rosenstirn, chairman; Dr. Martin Regensburger, president State Board of Health; Mr. Ford and Mr. Morrison, two business men; Mr. Roncovieri, superintendent of public schools, Father Wymen, a member of the Paulist Order, and Mr. W. H. Metson, Park Commissioner.

The staff of the clinic consists of a superintendent and two female clerks, a chief clinician, an assistant clinician, a female physician for the

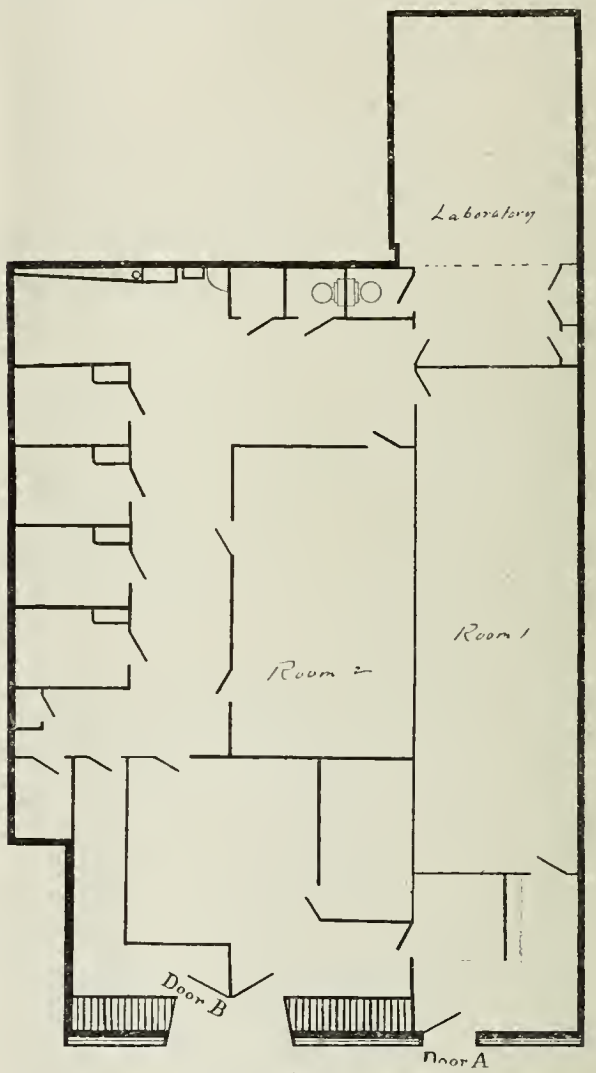



Fig. 1.—Floor plan of the clinic.

morning treatment hours, a bacteriologist (who is also a graduate physician), a trained nurse, a matron, and a janitor.

Every safeguard has been adopted against the possible practice of collusion in the examinations.

The attached sketch (Fig. 1) of the floor plan of the clinic will help explain the method used in examining patients. All women enter at door *A*, where they are registered on Form I (Fig. 2), and instructed to bring two photographs on their next visit. One of these photographs is then attached, as marked. The examination card (Fig. 3) is given to her, bearing her number. The coupon attached is torn off, and sent by carrying basket

to the matron. The patient enters waiting room No. 1 and awaits her turn for examination. The matron calls the patients by their numbers, consequently the examining physician does not know the name of the patient nor the house she comes from —he knows her only by a number. She is placed in one of the examining booths and the clinical examination is made. If clinical symptoms of lues are found, a Wassermann is added to the examination. For gonorrhea, smears are taken from any suspicious part, as urethra, Skeen's glands, vagina, Bartholinian glands, and cervix, are deposited in the correspondingly marked divisions of the slide-carrier, and sent to the laboratory for examination whilst the patient goes into waiting room No. 2 to await her report. After the laboratory examination has been concluded, the report is sent by carrier-basket to the clerk in the record office, and if satisfactory, the patient is furnished with a small pocket case (Fig. 2) which contains a duplicate of her record, and a card showing the date of her examination and that the same was satisfactory. This card is signed by the clerk whose signature is the one recognized by the police. The record is firmly fixed in the book by means of an eyelet, and cannot be

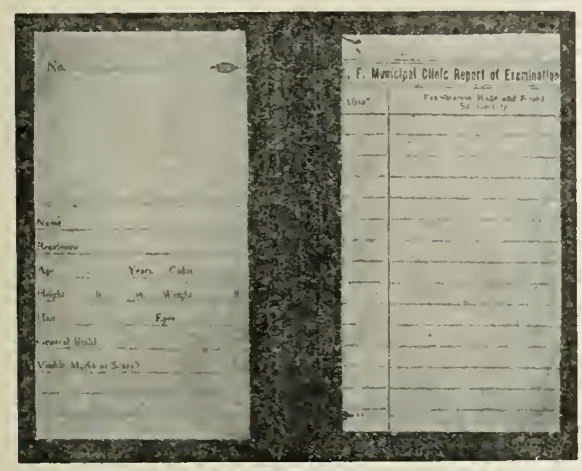



Fig. 2.—Patient's certificate.

removed without destroying the case. The patient then leaves by the exit door (door B).

In the office, the "*Master Card*" (Fig. 3), with one photo attached, is filed numerically, controlled by index cards, white for whites, and blue for other races. There is also a record kept of the inmates by houses, and the names are filed both by the first and surnames. A control card is made out (Fig. 5) which is filed under the four cardinal points of height, weight, color of eyes, and color of hair, thus providing a further identification in case of change of name. After her first registration, a woman receives on subsequent examinations, one of the cards (Fig. 4) marked when to report again. Upon her next visit, she surrenders her book at the cashier's desk, and it is returned to her after the same procedure as upon her first examination, if found satisfactory.

In case she is found diseased, a blue treatment card is issued to the patient, the stub being retained by the nurse.

The female physician is in attendance every morning between the hours of nine and eleven, for the treatment of the regular cases.

In case a woman refuses to submit to treatment, and continues to ply her trade, she is arrested, charged with vagrancy, ordered to the hospital for treatment, and detained there until cured.

The examinations are made in the afternoon from one to five.

Each person registered is supposed to report every five days. In case of illness or menstrual trouble, she must notify the clinic by telephone of the cause of her failure to keep her appointment.

A fee of fifty (50) cents is charged for each examination. No other charge is made and no gratuity of any kind can be accepted by any attaché of the clinic. (Large notice cards notifying the women of this rule are posted throughout the clinic, and on the door of each booth.)

All treatment furnished by the clinic are free to the patient. In cases that require hospital care, or where financial difficulties of any kind make it desirable, or in obstreperous cases, hospital attention is provided and paid for by the clinic. She is only charged for her regular examination.

The clinic is entirely supported by means of this fee. The funds are under the control of the advisory committee and are audited by a regular public accountant every month. A surplus fund is accumulating and is being saved with a view of establishing later an interim home for rescued girls of this class.

After an infected girl has been declared cured by her physician, she must report on three successive days to the clinic, when a smear is taken each time, and if advisable a tentative nitrate of silver injection added, and examined. For syphilis, a Wassermann is made, together with a thorough examination. Should the examination prove negative, she is furnished a card (Fig. 6) for free examination which must be made by the chief clinician, and if everything is all right her book is returned to her.

The laboratory of this institution is fully equipped and Wassermann tests are made in all suspicious cases and in every new registration.

This card (Fig. 7), samples of which I take pleasure in passing around, is enclosed in every book, and particular attention is paid in helping the women to understand it.

Inside the door of every private room of the houses of prostitution this card is posted:

ASK FOR THE
MUNICIPAL CLINIC BOOKS
AND SEE THAT THE LAST EXAMINATION
HAS TAKEN PLACE WITHIN FIVE
DAYS, PRECEDING TO-DAY.

. . . The public should realize, however, that notwithstanding the great improvement of conditions through these regular examinations, no guarantee of absolute safety can be assured.

MUNICIPAL CLINIC,
682 Commercial Street.

In every booth and all waiting rooms cards reading as follows are shown:

THE FEE PAID FOR EXAMINATION IS THE ONLY FEE THAT WILL BE ACCEPTED BY THIS INSTITUTION. ANY CASES COMING FOR TREATMENT RECEIVE ATTENTION ABSOLUTELY FREE OF CHARGE.

NO GRATUITY OF ANY KIND CAN BE ACCEPTED BY ANY NURSE, PHYSICIAN OR ATTENDANT UNDER ANY CIRCUMSTANCES WHATSOEVER.

ANY VIOLATION OF THIS RULE WILL BE PUNISHED BY THE DISCHARGE OF THE EMPLOYEE ACCEPTING THE GRATUITY, AND THE PENALIZING OF THE PERSON GIVING THE GRATUITY BY WITHHOLDING HER CERTIFICATE.

In the waiting room No. 2, where the women

await their reports, the following notices are displayed:

PATIENTS SENT TO THE CITY AND COUNTY HOSPITAL FOR TREATMENT ARE PAID FOR BY THE CLINIC, TREATED IN A SPECIAL WARD, AND ARE NOT SUBJECT TO STUDENT EXPERIMENTATION.

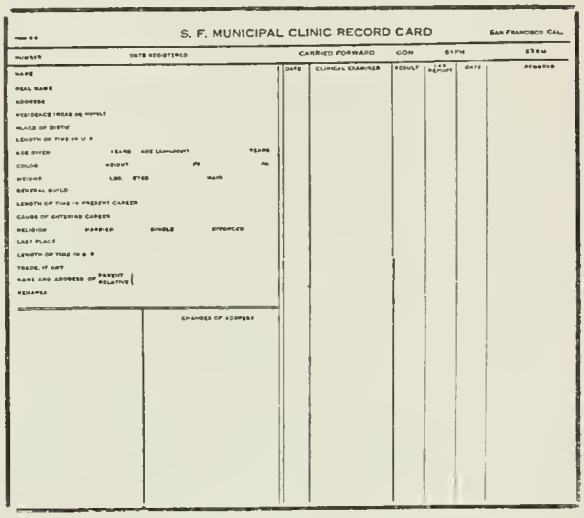

S. F. MUNICIPAL CLINIC RECORD CARD

Fig. 3.—Form I, the master card.

and above a properly locked box, of which the Chairman of the Advisory Committee only has the key:

DEPOSIT COMPLAINTS HERE. THIS BOX WILL BE OPENED BY THE ADVISORY COMMITTEE ONLY. ANY COMPLAINTS ATTENDED TO PROMPTLY.

This now is in brief outline a sketch of the history and method of our 18 months' old work of a sane and humane sanitary reglementation. What is the attitude toward it now of our people, laity and professional, and what are the arguments brought forward against regulation?

Talcot Williams declared, "The laity of America would never either register prostitution or insist on compulsory examination, neither would it segregate the prostitutes." Is it really the American laity who opposes so strenuously, so unalterably, a sanitary protective measure? The laity who, upon the dangers of contagious diseases made known by the medical profession, submit, in cases of measles, scarlet fever, diphtheria, smallpox, etc., willingly to quarantine isolation, or forcible removal to a contagious disease hospital? The people approve even a life-long isolation or incarceration for leprosy, a disease known to be so very difficult to transmit by contagion that this fact now established through some isolated cases has long been doubted.

Would they object so strenuously if they knew the dangers, the terrible ravages due to venereal diseases; the fact that 80 per cent. of deaths from inflammatory diseases peculiar to women, 75 per cent. of all gynecological operations, and more than 60 per cent. of all gynecological work is due to infection? That up to a few years ago, before the Credé prophylactic eye-treatment was generalized in Germany, and up to now where it has not been adopted, 80 per cent. of disastrous inflammation of the eyes (ophthalmia) and 20 to 25 per cent. of all blindness has been caused by gonorrheal infection chiefly due to the passing of the newborn babe through the diseased maternal genitals? Is it not enough that about 80 per cent. of syphilis-infected children die in their mothers' wombs, and the 20 per cent. living carry with them the life-long marks and defects of mind and body as their heirloom, transmissible again to their offspring? Or would they also consider as a negligible quantity the effect of acquired syphilis, its destructive work on the vital organs, its causation of paralysis, locomotor ataxia, insanity, with the unceasing suspense of the Damocles's sword during the victim's lifetime? Perhaps the American laity might also regard the enormously great annual number of victims to infection with venereal diseases, but a trifling matter.

The Prussian Government in the year 1910 felt curious enough to send inquiry sheets regarding the number of such cases treated during the preceding year to each and every physician within its dominion. A conservative estimate based on the answers received gave the astounding result of 500,000 cases for the Kingdom in a year. Even if we allow for our country conditions ever so favorable as compared with Prussia in this particular respect, and simply grant for America's unhampered dissemination of venereal diseases no greater numerical infection than Prussia shows with its strict regulation, we would have in our own country the amazing sum of 1,500,000 venereally infected cases annually. Do you believe that if this were generally known the public at large would not eagerly adopt any and all means that promise even a slight degree of betterment?

But instead of publishing these appalling facts broadcast, the public press and periodicals shun the merest mention, still more the discussion of the sex problem and its dangers, the greatest perhaps, at the present time, which threaten the health and strength of our nation. In place of such shocking reading matter, many of their columns reek with the chaste advertisements of thinly veiled solicitations of prostitution from so-called masseuses and the freely offered help of abortionists to hasten retarded or irregular menstruation.

This prudery of the press, stimulated through the fear of excommunication by the purists, the moralists, and the pharisees, extends even to scientific publications. In a recently published work of sixteen enormous volumes an American encyclopedia in the style of the Encyclopedia Britannica, one looks in vain for such words as "prostitution," "prostitute," "nymphomania," etc., even the word "sex" has been carefully omitted.

Private endeavor has come to the rescue, and all honor to the courageous men who first founded the American Society of Social and Moral Prophylaxis of New York, the Society which took the initiative

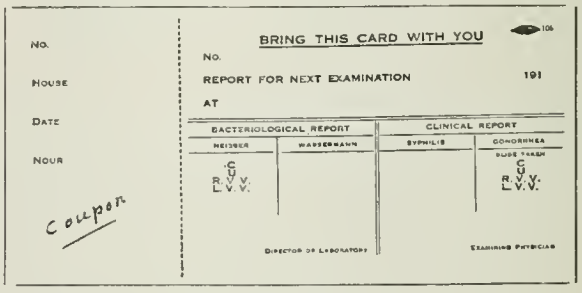

BRING THIS CARD WITH YOU

Fig. 4.—Examination card.

in popularizing the knowledge of normal and pathological conditions arising from sexual intercourse. Similar associations were formed in other cities and finally a national Association, the American Federation of Sex Hygiene, was formed for the education of the public in the physiology and hygiene of sex.

In falling heir to this task, the Federation did not limit its work to the spreading of the new gospel of Sex Hygiene, but passed resolutions which, by virtue of the Society's adoption, were raised to and heralded as dogmas and held unassailable.

Following the examples of the International Con-

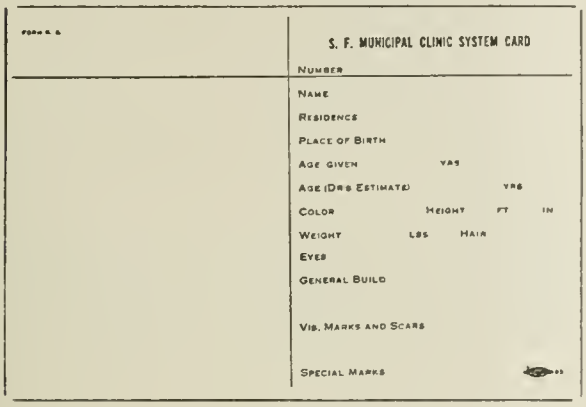

S. F. MUNICIPAL CLINIC SYSTEM CARD
NUMBER
NAME
RESIDENCE
PLACE OF BIRTH
AGE GIVEN YRS
AGE (DR'S ESTIMATE) YRS
COLOR HEIGHT FT IN
WEIGHT LBS HAIR
EYES
GENERAL BUILD
VIS. MARKS AND SCARS
SPECIAL MARKS

FIG. 5.—The control card.

gress in Brussels, and the German one for the Prevention of Venereal Diseases, the Federation for Sex Hygiene pronounced as the first dogma, that sexual intercourse is unnecessary to health, or in other words, that absolute sexual continence is not injurious. It is unnecessary to call your attention to the fact that the foremost neurologists to-day contest the truth of this pronunciamento very sharply, so this infallible dogma, like its relatives of the ecclesiastical councils, is subject to correction.

Another dogma, pronounced later but with equal assurance, is that all attempts at reglementation must be abandoned; they are useless, nay, even injurious to any endeavor to prevent the spread of venereal diseases. Its full and permanent adoption throughout would abolish a sanitary regulation of prostitution, this main source of infection of venereal diseases. Even if such a high-minded association declares itself for a dogma of that sort should that throttle alike regulatory progress and prevent the discussion of this momentous question forever? I do not think so, and will try to review briefly the points of opposition to reglementation.

It is asserted that hitherto, inspection has been imperfect in the registered houses of prostitution, and that it does not reach secret prostitution at all. Let us grant that for argument's sake. But see what this imperfect inspection accomplishes.

MORBIDITY REPORT

| 1911 | Ind. | Exams. | Tot. Dis. | New Reg. | Per Cent. Dis. Cases on New Reg. | Dis. Cases Found on First Exam. of New Reg. | Diseased Cases per 1000 |
|---|---|---|---|---|---|---|---|
| March..... | 647 | 1487 | 95 | 647 | 8 | 53 | 146.8 |
| April..... | 905 | 1929 | 76 | 369 | 6 | 22 | 83.9 |
| May..... | 819 | 3452 | 14 | 105 | 3 | 4 | 17 |
| June..... | 747 | 2397 | 42 | 77 | 5 | 4 | 56 |
| July..... | 740 | 2525 | 76 | 84 | 7 | 6 | 102.7 |
| August..... | 744 | 3084 | 38 | 91 | 7 | 7 | 51 |
| September.. | 776 | 2564 | 39 | 89 | 2 | 2 | 50 |
| October..... | 724 | 2963 | 42 | 104 | 5 | 6 | 58 |
| November.. | 693 | 3231 | 42 | 93 | 10 | 10 | 60.6 |
| December... | 831 | 3353 | 37 | 109 | 9 | 10 | 44.5 |
| 1912 | | | | | | | |
| January.... | 924 | 3242 | 43 | 110 | 5 | 6 | 46.5 |
| February... | 780 | 2885 | 23 | 77 | 6 | 5 | 29.5 |
| March..... | 789 | 2962 | 38 | 62 | 11 | 8 | 48 |
| April..... | 866 | 3437 | 48 | 68 | 20 | 19 | 55.4 |
| May..... | 790 | 3214 | 44 | 80 | 10 | 9 | 68.3 |
| June..... | 650 | 2786 | 29 | 49 | 10 | 5 | 44.6 |
| July..... | 740 | 2925 | 40 | 49 | 20 | 10 | 54 |
| September.. | 710 | 2697 | 13 | 50 | 11 | 22 | 18.3 |
| October..... | 710 | 3149 | 37 | 84 | 20 | 23.8 | 52.1 |
| November.. | 831 | 3349 | 23 | 42 | 10 | 23.8 | 27.6 |
| December... | 735 | 3105 | 39 | 66 | 34 | 51.5 | 53 |

I show you here a tabulated report of our activity during the 18 months of our clinic's existence. You see the reduction of morbidity from 146.8 per 1,000 to a fairly steady rate of about 50 per 1,000. The one month of May requires an explanation. During the month of June, the American Medical Association convened in Los Angeles, and the President of our last Board of Health, read a paper there before that Association, treating of the work of the then 3-months-old clinic, for which the figures of these first three months were used. In his endeavor to present a most favorable impression, his influence as president of the Board of Health, and the then managing spirit of the clinic, was perhaps unconsciously exercised to keep the percentage of diseased cases as low as—well, as you see it here—whilst when normal conditions were reestablished, the percentage reassumed its normal proportions:

The houses containing by far the largest contingent of prostitutes everywhere are the cheap houses; with us the "One Dollar Houses." The daily expenses of an inmate of such a house are at least $10 per day; $3.50 to the keeper of the house, $2.50 for food, rent for her private sleeping place from one dollar and a half up; the rest, for the clothes, washing, and incidentals, not counting the contribution for the protection and to the support of the cadet. In order to keep even she has to accommodate 12 to 15 visitors a day, a number ordinarily considerably exceeded. Let us say that only fifty per cent. of about one thousand active registered prostitutes occupy these cheap houses. Our figures show a reduction to nearly one-third of the original morbidity during the short period of our existence. Deduct from that a sufficient allowance for possible sources of error; we still have fifty per cent. and to spare. Among those five hundred, seventy-five diseased women would have been plying this trade except for the action of our clinic. Regulation eliminated at least thirty-seven. Thirty-seven times ten makes three hundred and seventy men a day, or one hundred and thirty-five thousand and fifty cases a year who escape the risk of infection, not including all those who were equally fortunate in the high priced houses by reason of the control we exercise.

Is that not a number large enough to stimulate our efforts to overcome any obstacle and all prejudices in order to help the parties concerned? As to secret prostitution, I have outlined to you what we are doing to have that element submit to regular ex-

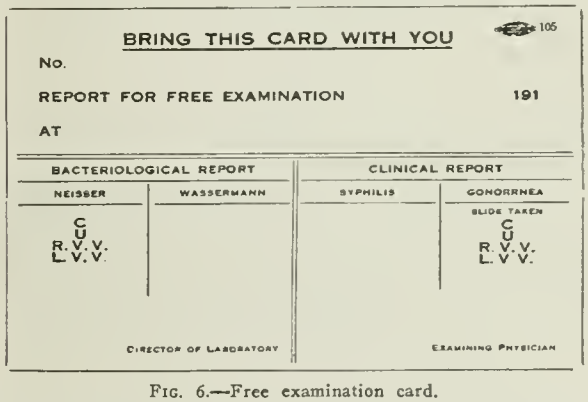

BRING THIS CARD WITH YOU 105
No.
REPORT FOR FREE EXAMINATION 191
AT
BACTERIOLOGICAL REPORT
NEISSER WASSERMANN
C U R.V.V. L.V.V.
DIRECTOR OF LABORATORY
CLINICAL REPORT
SYPHILIS GONORRHEA
SLIDE TAKEN
C U R.V.V. L.V.V.
EXAMINING PHYSICIAN

FIG. 6.—Free examination card.

aminations, and we feel certain of getting in time, a very large proportion. If they once realize, as we have demonstrated to the satisfaction of their registered companions in misery, that no graft is practised or permitted, and that this Institution acts in a friendly sense and manner for their benefit by reg-

ular sanitary inspection, that contingent will flock voluntarily to the clinic. Their confidence has to be gained by gradual and difficult education, and no unwarranted harassing practised or permitted.

"Oh!" cry out the Abolitionists, Purists, and Moralists, "You are condoning a crime." Are we, really? Have the views upon sexual relations not undergone any change from the medieval ecclesiastical condemnation of many centuries ago?*

While from an ethical standpoint, prostitution constitutes one of the most revolting degredations of the human frame and mind, the passing of money in an otherwise inoffensive action should not stamp it legally as a crime. Who knows better than you, my dear co-workers, that the grinding machinery of our social structure is responsible for the continuous supply in this nefarious trade? A lenient protective treatment of those unfortunates, who are compelled, or think they are compelled, to sell their bodies, corresponds to the charitably understanding spirit of our scientific age, in contrast with the harshly unbending one of fanatic orthodoxy.

The regulation we aim at gives also a protection against extortion. An obedience to the sanitary measures and to the laws of ordinary circumspection, gives freedom from authoritative harassment. As protection against this nightmare of their existence is no longer essential, the cadet loses a large share of his importance and influence, and a less odious relation between the prostitute and her friend may be hoped for.

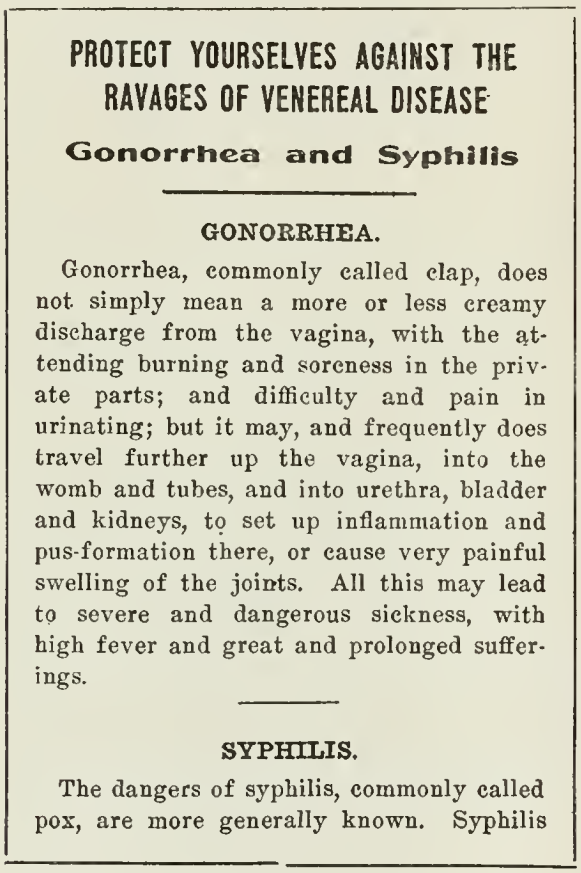
*In spite of the unjustifiable survival of antiquated dead-letter laws, public opinion in the present age does not condemn sexual intercourse among single persons unqualifiedly as a crime or vice. Regardless of the Criminal Code, society recognizes the elementary passion of sexual desire as a natural endowment of the normal red-blooded male individual and its reasonable satisfaction a more or less personal matter.

It has been argued that sufficiently frequent examinations of prostitutes charge the community enforcing them with an exceedingly heavy expense, inordinately so, relative to the good it accomplishes. Whilst we do not recognize that any reasonable amount of money spent for improving the health of a community is wasted, we have demonstrated beyond a reasonable doubt that this work can be done effectively for a comparatively small amount, and further, that the total expense can and should be borne by the main beneficiaries who pay it willingly for control against infection, and insurance for a paid-for-right to absolutely free private medical treatment.

Our success with the treatment of gonorrhea has been very gratifying. Before January, 1912, financial difficulties made it necessary to entrust our graduate nurse with carrying out the ambulatory treatment of the infected patients of the clinic under the supervision of the head clinician. Since the first of the year we have employed an excellently fitted female physician for this department of our work, and the percentage of the total number of detained infected cases applying for treatment of the clinic has gratifyingly increased:

| Month | Number of Diseased Cases | Number Treated in Clinic | Per Cent. |
|---|---|---|---|
| 1912 | | | |
| January | 43 | 25 | 56.1 |
| February | 23 | 13 | 56.5 |
| March | 38 | 26 | 68.4 |
| April | 48 | 30 | 62.5 |
| May | 54 | 29 | 53.7 |
| June | 29 | 25 | 86.2 |
| July | 40 | 33 | 82.5 |

Of these 181 cases treated by Dr. Campbell, at the clinic, 129 have been discharged and cured; 42 cases left without completing their course of treatment



PROTECT YOURSELVES AGAINST THE RAVAGES OF VENEREAL DISEASE

Gonorrhea and Syphilis

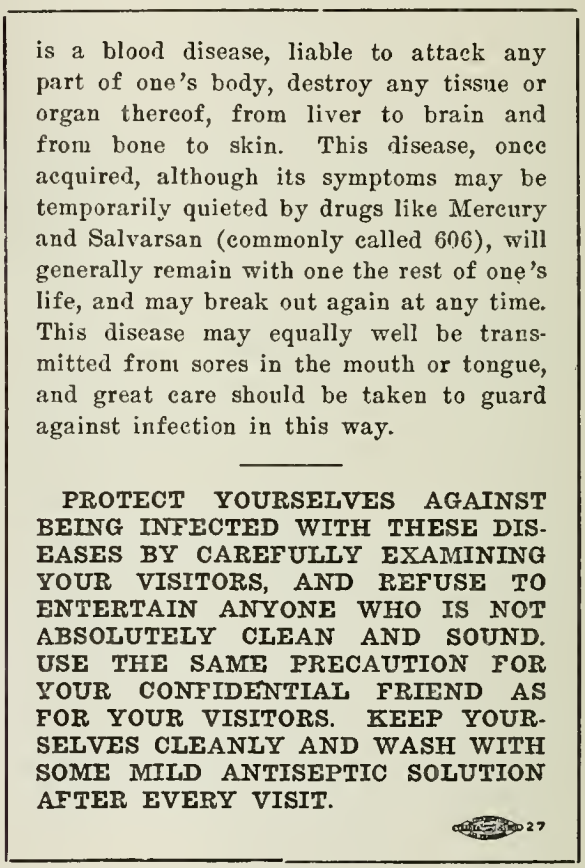
GONORRHEA.

Gonorrhea, commonly called clap, does not simply mean a more or less creamy discharge from the vagina, with the attending burning and soreness in the private parts; and difficulty and pain in urinating; but it may, and frequently does travel further up the vagina, into the womb and tubes, and into urethra, bladder and kidneys, to set up inflammation and pus-formation there, or cause very painful swelling of the joints. All this may lead to severe and dangerous sickness, with high fever and great and prolonged sufferings.

SYPHILIS.

The dangers of syphilis, commonly called pox, are more generally known. Syphilis

Page 1.



is a blood disease, liable to attack any part of one's body, destroy any tissue or organ thereof, from liver to brain and from bone to skin. This disease, once acquired, although its symptoms may be temporarily quieted by drugs like Mercury and Salvarsan (commonly called 606), will generally remain with one the rest of one's life, and may break out again at any time. This disease may equally well be transmitted from sores in the mouth or tongue, and great care should be taken to guard against infection in this way.

PROTECT YOURSELVES AGAINST BEING INFECTED WITH THESE DISEASES BY CAREFULLY EXAMINING YOUR VISITORS, AND REFUSE TO ENTERTAIN ANYONE WHO IS NOT ABSOLUTELY CLEAN AND SOUND. USE THE SAME PRECAUTION FOR YOUR CONFIDENTIAL FRIEND AS FOR YOUR VISITORS. KEEP YOURSELVES CLEANLY AND WASH WITH SOME MILD ANTISEPTIC SOLUTION AFTER EVERY VISIT.

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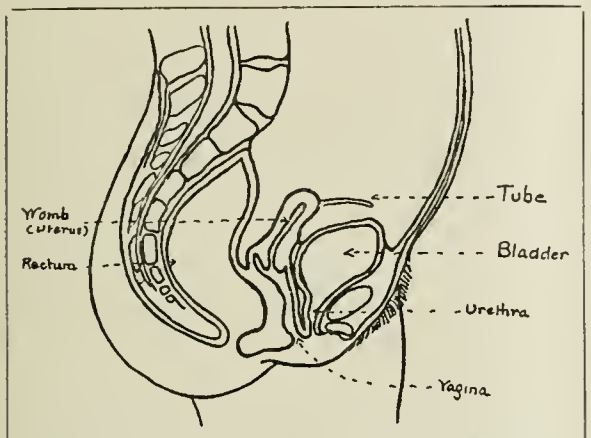
Page 2.

and disappeared. Of the 129 cases mentioned above, dismissed as cured, only six have had recurrences, 3 of whom had refused to have the Bartholinian glands slit open for treatment.

In addition to the above cases, six cases of syphilis were treated under our auspices at the hospital, and after injections of salvarsan, and the disappearances of clinical evidences of disease under this and subsequent treatment had their books returned to them subject to observation and control.

The gonorrhea cases have to undergo three successive examinations, followed where advisable, by a tentative nitrate of silver injection. Only if all three and the nitrate of silver injection show the absence of acute or chronic inflammatory clinical symptoms and of the Neisser's organisms, the patient has her book returned to her, and is thereby entitled to take up her trade again. We therefore cannot agree with those who claim gonorrhea incurable and give this reason for an alleged inefficiency of sanitary regulation. Our results have proven




Look at and study this lengthwise halfcut (Longitudinal section), through female pelvis with its organs, and try to understand it.

**ASK THE DOCTOR AT THE CLINIC HOW TO MAKE PROPER EXAMINATION OF YOUR VISITORS, AND ABOUT ANYTHING ELSE YOU DO NOT UNDERSTAND; HE WILL GLADLY EXPLAIN.**

**DO NOT FORGET THAT THE MUNICIPAL CLINIC IS YOUR FRIEND AND FOR YOUR OWN PROTECTION.**

Page 3.

FIG. 7.—Card enclosed in each patient's certificate. (The first 2 pages are shown on p. 472.)

the fallacy of this. A cure from syphilis can never be absolutely claimed, but in practically all cases a rational treatment insures at least a temporary innocuousness to others, which should be watched by regular examinations.

Let us look over the statistics made by honest, painstaking and impartial investigators regarding the effect of regulation upon public health. Statistics of such a nature must fulfil peculiar conditions to be of any value. During the term of observation the material must be practically unvarying as to age, physical strength, and conditions of life and living. The medical control must be constant and accurate, and similar standards must prevail where comparisons shall be deemed valid. The armies of the various nations are the only large bodies of men that fulfil to a nearly ideal degree all these claims, and with army reports we shall occupy ourselves chiefly.

In 1871 the British Royal Commission and in 1879 a select committee were appointed to investigate the effect of the Contagious Diseases Prevention Act. This was, as you all know, an act providing for the compulsory medical examination of prostitutes, and by detention in the hospital of those found diseased in garrison towns. The direct evidence collected by these two official bodies was strongly in its favor, alike with the diminution of disease among the troops in the protected towns, the absence of complaints, and the good effects on public order to which even clergymen and other residents testified. The majority of the committee reported accordingly after a three years' inquiry. Agitation against the act by purists and moralists became very violent, however, and in 1883 the House of Commons with the usual understanding of legislative bodies for medical affairs, passed resolutions condemning compulsory examination by a vote of 182 to 110.

In order to let you see the character of some of the evidence gathered by these committees of skilled observers I will show you their comparative table demonstrating the decline in cases of venereal diseases in towns protected by the Diseases Act and in unprotected towns. Primary sores, secondary syphilis, and gonorrhea are considered separately:

INFLUENCE OF BRITISH DISEASES ACT ON ARMY HEALTH

| Period | PERCENTAGE OF DECLINE FOR: | | | | | |
|---|---|---|---|---|---|---|
| | PRIMARY SORES | | SECOND. SYPHILIS | | GONORRHEA | |
| | Not Subject | Subject | Not Subject | Subject | Not Subject | Subject |
| 1861–72..... | 9 | 40 | 5 | 34 | 3 | 8 |
| 1860–73..... | 26 | 60 | 10 | 49 | 18 | 24 |

That even a not very humanely conducted control by police administration is effective, in spite of the often expressed doubts, is shown by the gradually lessened number of attempted escapes from control and the number recovered by the police in Paris as reported before the Brussels Congress.

Only the first and last years are given here:

REPORT OF 1900 INTERNATIONAL CONGRESS OF BRUSSELS

| Year | Registered | Disappeared | Rest. to Control |
|---|---|---|---|
| 1888..... | 4591 | 1779 | 1491 |
| 1889..... | 4591 | 2125 | 1309 |
| 1896..... | 5900 | 1190 | 615 |
| 1898..... | 6018 | 344 | 498 |

Parent-Duchâtelet, Behrend, Hugel, and many other American and European authors and nearly all other writers prior to 1850 never doubted that the immense sanitary advantages from that kind of regulation were easily demonstrable.

The eminent Russian physician Stürmer is authority for the statement that in Russian cities when control is released, venereal diseases increase and the reverse when control is taken up again. In the City of Dorpat, known as an example for the severe character of its local venereal diseases, the commander of the garrison reported in 1898 that after three years of effective regulation not one out of 1,000 men stationed there had contracted syphilis during the year.

Statistics from Norway, especially from Christiania, indicate the same relations between control and prevention of diseases. The Italian army statistics show undoubted increase of the spread of venereal infections after the abolition of regulation. You may judge for yourselves a comparative statistical table of the morbidity from venereal diseases in

some of the various European armies during the twenty years from 1876 to 1895 inclusive. The arrangement of the countries begins with the one where regulation is strictest and passes gradually to the one where it has been abolished.

ADMISSION TO HOSPITAL FOR VENEREAL DISEASES PER 1000 IN EUROPEAN ARMIES

| Year | German | French | Austrian | British (Home) | British (India) |
|---|---|---|---|---|---|
| 1876..... | 28.8 | 57.0 | 65.8 | 146.5 | 203.5 |
| 1877..... | 30.0 | 57.8 | 66.9 | 153.2 | 224.4 |
| 1878..... | 36.0 | 59.7 | 75.4 | 175.5 | 291.6 |
| 1879..... | 38.5 | 63.7 | 81.4 | 179.5 | 253.3 |
| 1880..... | 34.9 | 65.8 | 75.7 | 245.9 | 249.0 |
| 1881..... | 39.2 | 60.6 | 79.0 | 245.5 | 259.6 |
| 1882..... | 41.0 | 62.0 | 73.7 | 246.0 | 265.5 |
| 1883..... | 38.2 | 58.9 | 73.3 | 260.0 | 271.3 |
| 1884..... | 34.5 | 52.1 | 73.5 | 270.7 | 293.5 |
| 1885..... | 32.6 | 50.7 | 69.0 | 275.4 | 342.6 |
| 1886..... | 29.7 | 49.6 | 65.8 | 267.1 | 385.8 |
| 1887..... | 28.6 | 51.6 | 64.4 | 252.9 | 361.4 |
| 1888..... | 26.3 | 46.7 | 65.4 | 224.5 | 372.2 |
| 1889..... | 26.7 | 45.8 | 65.3 | 212.1 | 481.5 |
| 1890..... | 26.7 | 43.8 | 65.4 | 212.4 | 503.6 |
| 1891..... | 27.2 | 43.7 | 63.7 | 197.4 | 400.7 |
| 1892..... | 27.9 | 44.0 | 61.6 | 201.2 | 409.9 |
| 1893..... | .... | 42.8 | 64.5 | 194.6 | 406.0 |
| 1894..... | .... | 40.8 | 64.8 | 182.4 | 511.4 |
| 1895..... | .... | .... | .... | 173.8 | 522.3 |

I have been informed that until lately our own army and navy showed the same conditions as the English.

In the light of these investigations into the usefulness of sanitary control we feel that regardless of the outcries of so-called purists and moralists further efforts with regulation are certainly justified.

The attitude of the American public is not as forbidding as these people would make us believe. Cities like Chicago, Cincinnati, and Sacramento, whose representatives have inspected our work, made requests for samples of our forms and for information regarding our methods, with a view of introducing both.

We wrote to every city of over 25,000 inhabitants in the United States, asking for and receiving from 83 information as to the presence or absence of regulation in their municipalities, their means for the prevention of the spread of venereal diseases and as to the effect of either.

Thirty of these cities tolerate prostitution under all degrees of regulation from the merest apology to well organized systems—claiming generally satisfactory results. Fifty-three replies claim to prohibit prostitution absolutely—26 of them, mostly New England towns like Fall River, Worcester, Lowell, New Bedford, claim satisfactory results and total absence of prostitutes. All Massachusetts cities of this category assert with strange unanimity that their young men, if sexually inclined go to Boston to gratify their desires, whilst Boston in the report sent us, states its absolute prohibtion of prostitution. Nothing more convincing of the necessity of sanitary regulation could be given than the answers to these questions in their totality offer, and I sincerely regret that the lack of time does not allow me to read you this interesting documentary evidence.

The voices of those who come into close contact with these elements of our society of those who see their daily life and know intimately their associates, their practices, and their various ramifications extending into all parts of our social structure, speak loud enough for the benefits, for the desirability of regulation, but they are timid as yet, and are drowned by the vociferous outbursts of the purists.

Even such a highly intelligent and conscientious official as Police Commissioner O'Meara of Boston writes in his most interesting "Record of the Enforcement of the Law Against Sexual Immorality (Since December 1, 1909 to 1911)": "If a future Police Commissioner were intending to pursue the same course with respect to the business of vice that has been followed for four years, I should advise him that he might expect loyal support from the police when once he had convinced them that he was in earnest, little encouragement from courts, bitter hostility from persons whose profits were curtailed, indifference from the public, and from a few enthusiasts in the name of social purity, whose admirable purposes are not sustained by straight and intelligent thinking, he would be sure to receive some measure of abusive criticism."

A certain sort of sanitary regulation we must have. We need it for the protection of the coming generation, for the protection of our youth, of our Nation's manhood and womanhood, and especially for the protection of the unfortunate women, victims of social imperfections and cruel misfits, to correct which it may take centuries to come and we can not —dare not wait.

But just as much as we advocate regulation we want it a different kind from what it has been in the past, a new regulation unadulterated with persecution. No regulation, we believe, will ever gain the sanction of right-minded people or gain its end, unless it is first and principally based upon an absolutely helpful and fair dealing with the prostitutes themselves.

The second Brussels Conference passed as Resolution No. 2, "That prostitutes suffering from venereal maladies ought to be considered not as criminals, but as patients."

We go farther than that. We consider all the city's prostitutes as patients of our clinic to whom we extend the helping hand of the medical friend and advisor and last, but not least, of the educator. We educate them to the knowledge of the perils of their trade and the benefits derived from a controlling institution like the Municipal Clinic.

We gain their confidence by absolutely fair and dignified treatment, coupled with the convincing assurance that no graft of any kind is sheltered or condoned.

We raise their self-esteem by making them feel that the trifling examination fee charged (or remitted if financially distressed) for a temporary clean bill of health in a perilous trade, gives them a rightful claim to free medical treatment; should the misfortune of infection befall them. This free treatment entitles them to a paid-for hospital care if necessary or desirable, and exempts them from an objectionable and sometimes humiliating demonstration before student classes. And let me add right here, although we enforce no lock-hospital methods, but have our patients distributed in regular order of admissions throughout the wards, we register only one escape among all the hospital-confined cases.

We educate these women by impressing upon their generally undeveloped minds, the ever-present danger of infection with its disastrous consequences, and through the verbal instruction of our medical staff teach them as well as possible to examine their visitors and recognize the symptoms of venereal disease if present.

I have shown you the cards we place on the inside of each and all inmates' doors to their private rooms, for the notice and benefit of the patrons of these resorts. They call upon the visitor to inspect

the girl's book and convince himself of an official examination having been made within the preceding five days. These cards help us toward the regularity of our control, but at the same time, avoid the raising of a feeling of false security in the public mind by announcing that in spite of all these precautionary measures, no guarantee of safety can be assured.

The large and growing percentage of infected women that apply for treatment in our clinic, relieves us from the reproach that our system or regulation drives these unfortunates into other parts of the State or country where, unhindered by regulation, they might continue their trade.

We are free from all kinds of political influence. We were severed accidentally from the McCarthy Board of Health, which created our advisory committee. A judicial decision unseating several of the board's members, among them its president, an ex-officio member of our committee, who lost his membership through this decision. When our committee in March, 1912, approached Mayor Rolph's newly appointed Board of Health with the request to take over the Municipal Clinic with its fully paid-for equipment and its cash surplus in the bank in order to relieve the committee from its labors, we were refused. Not being willing to abandon a task which the men who were in it had recognized as most important and beneficial to the community at large, the committee continued its work alone, independent of the Board of Health, but with the gratifying protection and active support of the police authorities, executive and judicial. They have, after faithfully watching our endeavors learned to trust us, and I may say, simply stating a fact, that we enjoy at the present time the confidence alike of the legal authorities and the poor unfortunates whom we consider our wards.

The greater part of this encouraging result could only be gained by the tactful and efficient services of our entire staff, their assisting nurses, the police officers, the office force, and by the enthusiastic devotion of the clinic's superintendent. This spirit made it possible that although rescue work is not included in our programme, and no missionary work attempted, still in the short time of our existence 121 women were led into the decent paths of society, and cared for during the intermediate period until appropriate work could be provided for them. Forty of them have returned to their former life, the others have, to the best of our knowledge, not relapsed up to date.

In addition six neophytes were saved from entering a life of shame and five girls under the age of consent (18 years) were turned over to the care of the Juvenile Court.

Through the activity of our institution, our officers arrested twelve white slavers who were prosecuted—some in the Federal and some in the State courts—with the justifying result that in these most difficult cases, eight were convicted, only two acquitted, and two are still awaiting trial.

Appreciating the opportunities that our Institution furnishes for the discovery of this class of criminal cases, the municipal and especially the federal authorities continually ask our help and assist us in our efforts.

You easily see that our work does not oppose or hamper rescue work or educational efforts of the Society for Sex Hygiene type. On the contrary it materially helps every kind of work for the betterment or, if you will, the abolition of these sad conditions, and we are most willing and glad to assist in every possible way.

Fortunately for the work, our independence from politics permits us to fill positions for merit only, and it is perhaps this favorable administrative condition that caused the incumbent president of the Board of Health, a lawyer of high standing and reputation, to express to the author of this paper, as his opinion, "that the present independent state of the Municipal Clinic should be preserved so that persistent and sometimes irresistible political demands for appointments might be ignored."

If I may formulate certain requirements for the success of modern institutes for the sanitary regulation of prostitution, the following would be fundamental:

1. Prostitution, if regularly and officially supervised, although morally and socially abhorred, should not be punishable criminally, its regulation should be left to municipalities or counties.

2. The display of a spirit of helpful dignified sympathy by the institutional officers and employees for the unfortunates who come under their administration.

3. A persistent effort to educate the clients of the institution to the perils of their trade, to the methods of their avoidance, and to an appreciation of the Institute's beneficial services for their protection.

4. The inculcation of self-dependence by charging a small examination fee, sufficient to maintain the expenses of the institution and thereby insuring free and private medical, ambulatory, and unlock hospital treatment. This could be so arranged as to have the landladies assume part or all of the charges.

5. A police detail attached to the institution for surveillance and rounding up of delinquents by specially fitted officers.

6. Control of examination to be helped by cards similar to ours affixed in the private rooms of houses of prostitution calling for inspection of certificates of examination by the visitors, but disabusing their minds as to a possible feeling of safety.

I firmly believe if institutions for the sanitary regulation of prostitution were established and carried on along these lines throughout our country, the number of infections with venereal diseases would be very materially lessened, the injuries as well as the opprobrium resulting from the existence of prostitution greatly diminished, and a class of human beings benefited for whose debasement and degradation our vaunted civilization must be proclaimed chiefly responsible.

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## TUBERCULOSIS IN EARLY LIFE.*

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During my brief connection with this society I have listened with much interest to papers and discussions upon the subject of tuberculosis. They have, however, so universally dealt with the tuberculosis of adults, and more particularly phthisis, that I am stimulated to present briefly a few remarks upon the disease in early life.

We observe, perhaps, no malady so strikingly influenced in its pathology and dependent symptomatology by age as is this one. Not only is the disease more prevalent in early life, and it is very much more prevalent than is generally believed, but it is attended with a much higher mortality. With the greater opportunity for infection, the morbidity is readily explained, the mortality is undoubtedly dependent upon the more insidious onset and the widespread character of the lesions.

While a small percentage of cases in the young have been definitely proven to be of bovine type, pointing to an infected milk as the source of their disease,[1] a more careful examination will, in the vast majority of cases, trace infection directly to another case or contaminated home. The pernicious habit of taking children to visit relatives ill with tuberculosis, and the unfortunate instances where children are dependent upon tuberculous parents for such care as they receive, are too numerous in our experience. Among the negroes, whose greater predisposition, for whatever reason, is an established fact, the vicious practice of putting out the young with nurses while the mother is at work for the day is common. These women care for the children of a number of families for whatever money consideration, necessarily small, they can receive, and it may be safely assumed that, did their physical fitness permit, they would themselves be at work for wage. In too many instances their physical unsoundness is tuberculosis in some communicable form. These children, many of them at the crawling age, are under such circumstances subjected, first to improper or insufficient food (especially is this true of nurslings deprived of breast milk), and secondly, to direct contagion from the tuberculous patient, from infected food, and finally from the infected house.

*Read before the Society for the Prevention of Tuberculosis, Washington, D. C., March 5, 1912.

That the offspring of tuberculous parents may be born with the infection cannot be denied. Indeed, according to good authority,[2] a more careful examination of such offspring reveals tubercle in a larger proportion than was formerly supposed. Nevertheless, such tuberculosis is relatively uncommon, and by that I mean the presence of lesions post mortem, under three months of age, and it is my firm conviction that the infant would be comparatively safe could it be given a proper environment. Eminent authorities scout the idea of intrauterine infection, and point to contact with the mother or nurse as the source of danger.[3] The rôle of environment is nowhere more strikingly shown than in the statistics of two foundling asylums, the one in Prague, the other in St. Petersburg. In the former, under the direction of Epstein, it has been the custom to remove the babies of the tuberculous from the sphere of contagion immediately after birth; in the latter, under Froebelius, no effort at separation is made. The differences in the results obtained present an irrefutable argument.

It might not be amiss at this point to say just a word about so-called scrofula. It is by no means unanimously conceded that conditions, such as this designation is generally recognized to cover, cannot exist in the absence of definite infection with the tubercle bacilli. By such authorities as draw a distinction scrofula is explained to be a condition resulting from an intrauterine intoxication, but without definite bacillary invasion. Such subjects are presumed to present structures such as diseased lymphatic tissues, etc., that make them susceptible in a greater degree to infection.

I believe all are agreed that, once infected, the mortality is very high. In fact, I should say that recovery after the manifestation of clear clinical evidence is exceptional. Nor does this mortality seem to be much influenced by the measures that have given such gratifying results in the treatment of the disease in adults. Kelynack has fittingly designated tuberculosis as "the great scourge of child life."

It is not within the scope of this paper to attempt to draw conclusions from the extensive and conflicting literature on the portal of entry of infection. Dr. Guthrie characterizes such an effort a fallacious proceeding. It seems much more reasonable to grant that any portion of the respiratory or gastro-intestinal tract may serve as a point of entry. If the involvement of the lymph glands at or near to this portal of entry may be accepted as evidence, we must concede the mucous membranes of the upper respiratory and digestive tracts to be most often penetrated. The consideration of this question is here of importance only as it helps us determine the source of infection and thereon base a proper prophylaxis. Infection present in milk, and I refer to bovine type of infection, might readily infect the mediastinal glands by effecting an entrance in the lymphoid tissue of the upper air passages or through the mucous membranes of the upper digestive tract. On the other hand, infection from a human source might be ingested and find the point of lowest resistance in the intestinal tract. Of much more importance, to my mind, is the work recently done by Park and Krumweide, showing the relative frequency of human and bovine tuberculosis in humans.[1] Their work gives the bovine organism as the cause of the disease in from 6 2/3 to 10 per cent. of cases occurring under three years

of age. Taking all things into consideration, it would seem, therefore, that the danger from the milk of infected cattle subordinates itself to the menace from environment.

In the tuberculous manifestations of early life the lymphoid structures bear the brunt of the attack. This predilection for the glandular structures is due to the greater activity of these tissues, the relatively greater size of the lymph channels, and the keen energy of the lymph streams, resulting from the more active metabolism of infancy. The bronchial or mediastinal lymph nodes are involved in an overwhelming majority of instances.* Owing to the tendency to latency, many cases of this nature escape recognition. Of one thing I am convinced, and that is that, could the problems of a greater number of the socalled atrophic infants be solved, the general conception of the morbidity and mortality in tuberculosis would need considerable revision. The newborn, like the laboratory animal, is most susceptible to tuberculous toxemia, and undoubtedly many serious progressive disorders of nutrition are the result of bronchial gland involvement.

The picture drawn by Soltmann[3] is one with which we are all familiar. "The innutrition, the sudden arrest of development, and the subsequent decline of body weight, with rejection of food and apathy; the disappearance of the fatty tissue, the sallow, wrinkled gray skin which has lost its natural turgescence and is covered with flaky desquamation and frequently with intertrigo, furunculosis, and multiple abscesses; the thin, hard strands of muscle standing out like folds, the legs adducted at the knee, edema of the angle and the dorsum of the foot; the unmotived dyspeptic symptoms; the mummylike, shrunken little face, the bones of the skull which overlap in the form of terraces; and the hollowed fontanelles, the sunken eyes, the wide-drawn mouth surrounded by radiating lines—such is the picture of these poor little unfortunates, who, without cough and without expectoration, but with a small, frequent pulse and atypical changes in the temperature, which is often subnormal, are certain candidates for death." Such a train of symptoms is not often diagnosed tuberculosis. Only when the general dissemination results, with its terminal meningitis, or pulmonary involvement, or peritonitis, is the etiology perfectly clear.

Not only do we have tuberculosis of the bronchial glands in infancy, but we find it dominating childhood up to the age of puberty. Most often there is early caseation and dissemination, but not infrequently a quiescence from encapsulation that only awaits the glandular activity of some infection, as whooping cough, measles, or influenza, for its quickening. Thus, I believe, may we explain the frequency with which the clinical symptoms of tuberculosis follow upon the above mentioned diseases. The recognition of diseased mediastinal glands is attended with considerable difficulty, the younger the patient the greater the difficulty. With the very young it must be very largely conjecture, based upon constitutional symptoms and the presence of a positive tuberculin reaction. As the child grows larger the evidence becomes more dependable and we are able to make out the presence of enlarged lymph nodes by physical examination. Impairment of the note in the first and second interspaces close to the sternum, more especially on the right side, or in the interscapular region from the third to the fifth ribs, is strongly suggestive of mediastinal tuberculosis. Pollak[4] in a recent paper states that there are two signs that surpass all others in diagnostic importance. First, the characteristic cough; secondly, the expiratory "panting" or murmur. According to this authority, the extremely high pitch of this cough is pathognomonic. He further adds that all other symptoms of bronchial gland tuberculosis are unreliable. The diagnostic importance of the cough is emphasized by Still, who describes it as clanging and paroxysmal, partaking somewhat of the brassy quality of the cough produced in the adult by aortic aneurysm, and easily mistaken for whooping cough.[5]

To revert to tuberculin as an adjunct to diagnosis. Pollak, whom I have previously quoted, attaches the greatest importance to a positive or negative cutaneous reaction in children. My own experience with tuberculin as a diagnostic agent has been limited to the Wolf-Eisner method as modified by Calmette and now generally abandoned, and the cutaneous or von Pirquet method. So few of my own cases have been controlled post mortem or by a subsequent development of unmistakable lesion that I cannot draw any conclusions from them. The employment of the tuberculin subcutaneously for purposes of diagnosis in children is not a common practice among pediatrists.

When the tuberculous processes in early life for one reason or another become disseminated, we have our attention all too frequently drawn to and concentrated upon the disorder of an organ or system in which the disease has made special inroads, often forgetful of the fact that diffuse tuberculosis exists. Consider, for instance, tuberculous lesions in the lungs of children. We are not here dealing with localized disease such as is most often seen in the adult, but probably with the terminal stage of a general disease. In numbers of autopsies at the Children's Hospital on children dying with tuberculosis, I do not recall a single case in which diffuse lesions were not present. The reports from a series of autopsies on adults present a very different picture. The frequency with which localized tubercle is found in the adult is shown in the last report of Dr. Kinyon for the Tuberculosis Hospital in this city.

Time does not permit me to discuss the many manifestations of tuberculous dissemination. I have dealt particularly with the disease as affecting the bronchial lymph nodes, first because it is the result of the invasion in the vast majority of cases, and secondly because it is the form most likely to escape our notice, at least in the very young. The impression that I wish to leave is this: that any tuberculous lesion in early life, be it superficial adenitis, osteomyelitis, or what not, is a cause for the gravest alarm, since it is, in almost all instances, merely the local expression of a serious infection. The modern trend of surgery in the treatment of tubercle in bones and joints, the conservatism, and the treatment of the patient rather than the lesion, are merely a recognition of the character of the disease.

I have previously made reference to the frightful mortality of tuberculosis of early life, and I have very little to say upon treatment. In the light of our present knowledge, tuberculin as a therapeutic agent has failed to produce the results so eagerly anticipated. About a year and a half ago Dr.

*Freeman found nodes involved in 126 out of 158 cases; Holt in 108 out of 119, and Northrup in every one of 125 cases.

Nichols very kindly treated a series of fifteen cases of cervical tuberculous adenitis for me in my clinic at the Children's Hospital. We were not able to observe that the course or character of the disease was altered in any respect. Most authorities, with the possible exception of Maragliano and Spengler, are agreed that its use in childhood is not unattended with danger. In the absence of a specific and in a condition in which we are so largely dependent upon the recuperative powers of the patient for whatever measure of success is to be attained, we must turn to prophylaxis for our results. Very little may be expected after infection is received.

The problem of prophylaxis offers numerous and serious difficulties in the solution of which sentiment must first of all be educated and directed into its proper channels. One point may well be emphasized not only for the laity, but the profession as well, and that is a sober regard for the seriousness of whooping cough, measles, and influenza in their relation to tuberculosis. While I am heartily in favor of blocking off every possible avenue of danger in the campaign against this disease, and I have in mind more especially the great amount of work that has been done in protecting the public from the dangers of infected cattle, I cannot help thinking that in proportion to its importance too little attention has been given to the providing of suitable environment for the young, who otherwise are doomed to the malady.

The most effective fight against tuberculosis is to be waged where it is most prevalent and where the highest mortality is observed, namely, in early life, and it is in this period that experience teaches us that we must look to a more efficient prophylaxis for any considerable decrease in the terrible mortality.

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The Rockingham.

## USE OF THE FETAL MEMBRANES IN SKIN GRAFTING.

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NEW YORK.

I wish to show by this method that the material or organs that are generally thrown away after we have delivered the child can be utilized to the best advantage in skin grafting.

Before going into detail, I wish to give the histology of the material which I use for this purpose.

Histology of the Amnion.—This is a thin membrane of fetal origin, consisting of an epithelial coat, and a thin layer of mesenchymal connective tissue. Its epithelium, whose surface is directed toward the fetus, consists of cuboidal or flattened epithelial cells which are derived from the ectoderm; they are firmly united with one another by means of intercellular bridges. The connective tissue forms a thin transparent layer of embryonic tissue in which are many cells. From the inner surface of this layer delicate processes pass to the surface of the chorion, to which membrane the amnion is loosely attached.

Histology of the Chorion.—This tissue includes a membranous portion which is in relation with the amnion, and a villous portion which forms the forest of the placental villi already described as lying between the fetal membranes, on the one hand, and the material decidua on the other. That portion of the chorion which enters in the formation of the placenta is known as the chorion frondosum, in contradistinction to the remaining portion of the chorionic membrane, which is loosely attached to the decidua vera and is called the chorion leve.

The membranous portion of the chorion may be said to consist of two layers—an inner or fetal layer of embryonic connective tissue, which is continuous with the similar tissue of the amnion, and serves for the transmission of fetal blood vessels on their way from the umbilical cord to the placental villi, and an outer layer which consists of intermingled groups of large cells, collectively forming the trophoblast together with masses of canalized fibrin.

I have mentioned the chorion in this place not as an indication for grafting this membrane, but only to show that this layer serves as a sublayer for the transmission of the blood-vessels from the umbilical cord and how the amnion is intimately connected with the chorion, thus receiving its nutriment from these blood-vessels present in the chorion by exudation or transudation. The membrane would not serve as a means for grafting because of its fibrous nature.

I wish also to present the histology of the umbilical cord which I use for grafting. The umbilical cord transmits the two umbilical arteries, which are spirally wound about the umbilical vein. These vessels are embedded in a non-vascular, gelatinous connective tissue, known as the jelly of Wharton, which is rich in cells and ground substances. The fibers, as in all embryonic tissue, are poorly developed and form only a loose network of very delicate fibrils. The connective-tissue cells and fibers are frequently arranged in membranous bands which extend lengthwise of the cord and in transsections present a peculiar concentric arrangement; the delicate membranes alternating with broad tissue spaces, and often inclosing the blood-vessels or forming incomplete concentric lamellæ about the circumference of the cord. The surface of the cord is clothed with an ectodermal layer of flattened epithelium which occasionally forms several layers of cells.

The umbilical vessels, the veins as well as the arteries, are peculiar in that they possess unusually thick muscular walls. Their smooth muscle fibers are disposed both longitudinally and circularly. In transsection the endothelial lining of the vessels is seen to be thrown into prominent folds by the contraction of the thick muscular walls.

Remnants of the allantois and occasionally of the yolk-sac as well are found in the fetal end of the umbilical cord even at full term. These appear in the form of indistinct epithelial tubes or columns, whose cells often show evidences of degenerative changes.

The outermost of the fetal membranes is the chorion; this is covered with vascular villi, which dip into the decidua capsularis and basalis. Inside the chorion is the amnion, a closed sac, which surrounds the embryo and is attached to its ventral wall at the umbilicus. The amnion also forms a sheath for the umbilical cord by which the embryo

is attached to the inner surface of the chorion; it is filled with fluid, the amniotic fluid, in which the fetus floats. The umbilical cord contains not only the blood-vessels which pass between a specialized portion of the chorion, which forms the fetal part of the placenta and the embryo, but also the remains of the yolk-sac and the duct by which it is connected with the intestine of the embryo.

The Development of the Fetal Membranes.

Amnion.—As the embryo is differentiated the surface of the ovum beyond its margins, formed by the somatopleure, is gradually raised as a circular fold, which is looked upon as consisting of head, tail, and lateral portions. The various parts of the fold rise quickly and converge over the embryo, which at the same time passes toward the interior of the ovum. Finally the folds meet and fuse together at a point which is called the amnion navel. As soon as the folds fuse the inner parts separate from the outer and form a closed sac. The inner wall of the sac is formed by the epiblast, the outer by the mesoblast, and both are continuous with the same layers of the embryo. But soon the space between the two, the amniotic cavity, becomes filled with fluid, and this increases in amount until at the end of pregnancy it is present in very considerable quantity. The allantois is an outgrowth from the ventral portion of the posterior part or the primitive alimentary canal, and it consists of a hollow process of the hypoblast covered with mesoblast. In the human embryo it appears at a very early period, before the amnion folds have separated from the chorion, and it conveys the allantoic arteries from the embryo to the chorion, and the allantoic vein from the chorion to the embryo. At first the allantois is very short, but as the amnion distends and the embryo passes further and further into the interior of the enlarging ovum it is elongated into a cord which, together with the remains of the yolk-sac, is surrounded and ensheathed by the amnion; this cord is called the umbilical cord.

In the human subject that portion of the allantois which lies in the umbilical cord consists entirely of mesoblast vascular in character, for the hollow pouch of hypoblast ends near the umbilicus.

In man the umbilical cord consists of: (1) An outer covering of amnion. (2) A core of modified mesoblast derived from the mesoblast of the allantois and the wall of the yolk-sac. (3) Remains of the hypoblastic portion of the yolk-sac. (4) The allantoic arteries and veins.

In the early stages immediately after the separation of the amnion from the chorion the embryo and the amnion are attached to the chorion by the allantois, and they are situated in a space which is part of the original cœlomic space between the somatic and the splanchnic mesoblast. This space is continuous with the cœlum in the embryo at the umbilical orifice. In the later period it is entirely obliterated, for the amnion is distended until its outer surface fuses with the inner surface of the chorion; and at the same time the umbilical cord is differentiated as the distending amnion surrounds and presses together the allantoic stalk and the remains of the yolk-sac.

Since these organs of which I have already given the histology are a direct derivation of the skin of the embryo, they ought to have also all the functions of the skin in full development. Hence because of their derivation from the skin these organs serve as: (1) A protection; (2) heat regulation; (3) respiration; (4) absorption; (5) secretion and excretion. Hitherto these organs have been considered useless after they have performed their primary functions. It is my purpose to show that this is not so, but that they may be further utilized by us.

These organs are a portion of a living organism, and since these organs would go on living if kept intact for an indefinite time, they should also continue to live if properly placed on a surface where blood-serum is constantly transuding or exuding over the ulcer or wound.

There are seven principal methods of skin grafting, namely: (1) Thiersch's method; (2) Reverdine's method; (3) Wolf's method; (4) pedicle flap intact; (5) pedicle flap not intact; (6) cuticle scrapings used while fresh; (7) old scrapings preserved in a bottle with normal saline solution and used when needed.

I do not desire to give the details of the seven methods which I have enumerated, for they can be obtained from a text-book. I desire to state in reference to these methods that they all have their advantages, but one great disadvantage—that of taking the grafts from the patient himself or from the volunteer if occasion should occur that a large amount is needed. All this can be avoided by the use of the amnion and the umbilical cord.

Before cutting the grafts, carefully look over the membranes for any abnormality or diseased portion. Observe whether there are any diseased parts or ulcerations, and question the patient from whom these organs are obtained as to her previous history. If such caution is observed there will be no chance of infecting the patient. After the organs have been found free from disease or abnormality they are placed in a bottle containing normal salt solution. Before placing the organs in the bottle containing the salt solution they should be immersed in warm water to wash away any of the vaginal excretion which they have taken up during its passage through the vagina. By keeping them immersed in normal saline solution and changing the solution a few times before the use of the organs they will keep alive for over seventy-two hours.

When the patient is ready for grafting the organs are dipped several times in a new solution of normal saline and then they are cut up into pieces in any shape and size desired.

The cord should be cut open and the blood-vessels scraped out. This is done so that the membrane which is to be used shall be free from any hindrance to its early union. The surface of the cord and amnion which is to be placed on the ulcer should be the continuation of the inner surface of the cord. The jelly of Wharton in the cord is of an alkaline reaction, and because of this fact it is easily absorbed and ultimately the membrane covering the cord is left on the surface of the wound.

The surface of the parts to be grafted must next be inspected. If there are undermined edges the edges should be cut away until healthy skin is reached. Then the surface is carefully cleaned and disinfected. If there are any exuberant granulations they should be leveled off to the skin. Then the surface is thoroughly asepticized. All bleeding must have ceased, whether the wound is recent or granulating. If oozing of blood persists the wound surface must be covered by a protective layer of rubber tissue, of silver foil, guttapercha tissue, oiled silk, or such like material, over which sterile gauze is applied and the skin grafting put off till next day. When on the next day the bleed-

ing has ceased the grafting should take place.

The area to be grafted should be cleaned thoroughly first with peroxide of hydrogen which is washed off with a bichloride solution of 1:1,000 or 1:10,000. After the use of the above the parts are next washed with decinormal salt solution. After thoroughly cleansing the area the grafts are placed over the wound carefully and smoothly.

When the whole wound is covered with grafts place over them oiled silk fenestrated so as to facilitate drainage. The next dressing should be ordinary sterile gauze and soaked in decinormal salt solution or Carrel's solution.

Over this gauze soaked with decinormal salt solution a damper or rubber tissue should be placed, so that the moisture may not evaporate. Over the damper more sterile gauze is placed and ordinarily dressed. The first dressing of sterile gauze should be daily changed and soaked in normal salt solution. In order that the grafts be not moved during the daily changing of the dressings, I place collodion around the fenestrated oiled silk. No antiseptic lotion should be used, only the saline solution. The same kind of dressings should be applied until the healing process is complete. Very large surfaces can be made to heal in a short time by this process.

I have tried this method on several of my patients and can confidently state that I have gained great success with it. I wish to suggest this method so that it can be tried by the surgeons when occasion should happen.

This idea came to me while I was on a maternity case. I said to myself that I was throwing away the refuse of nature, a tissue which could easily be utilized. After some time of experimentation with it I can claim that it is especially adapted for those cases in which the areas to be grafted are so large that enough grafts cannot be obtained from the patient himself. I wish to add in this preliminary paper a few cases which I have treated.

Case I.—Mr. R., aged thirty-seven, came to see me about an old ulcer, the result of a burn, which had been treated in private and in hospital without satisfactory result. He did not wish to have the skin from another portion of his body taken and grafted. He feared the pain which usually accompanies the operation and he feared that there would be a scar remaining after having his skin shaved off. The patient came to me on June 15, 1912. He had a burn extending over the greater part of his chest and a portion of his right arm. The next day I had obtained the necessities and ordered him to bed to prepare himself for the operation. After preparing the organs to be grafted and the burn of the patient very carefully, as if it was a major operation, I began to graft the cord and amnion. The grafts almost completely covered his burns, and I forbade him to rise without my orders. He remained in bed for two weeks and a half, at the end of which time I took off the dressings and oil silk. To my surprise, I could not find any remains of the grafts. There was only the circumference of the burn to be grafted, and this remained because I had not enough of the material at the time of the operation. To-day the patient is completely cured and the place where the burn was cannot be recognized.

Case II.—O., æt. eight, suffering with heart disease since birth. The child was scalded by hot water on the left cheek, entire arm, and a portion of the chest. She went to the hospital, where she remained until the acute symptoms had subsided. I treated the child at her home and to-day she has no scar on her person to remind her of having been scalded. While remaining in bed I took care of her heart and her condition has greatly improved. The cure was obtained in three weeks.

Case III.—On August 30 a man, fifty-seven years old, came to see me for treatment of varicose ulcer. Although it has taken longer than I had promised the patient for a complete cure, still my results were excellent. He returned to me for a similar condition on his left leg and another on his right leg. This patient I have yet under my care.

Case IV.—A young girl of about eighteen years old who while coasting last winter struck her leg against a curbstone. The consequence was a traumatic ulcer. She was successfully treated by fetal membranous grafts and recovered in a short time.

Case V.—A laborer who had received a blow with a crowbar over his left leg. The resulting ulcer was treated successfully with fetal membrane grafts.

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## Medicolegal Notes.

**Revocation of License—Complaint.**—The Oregon State Board of Medical Examiners has, by statute, authority to revoke a license to practice medicine and surgery for unprofessional or dishonorable conduct, subject to the right of appeal. The statute declares that the term "unprofessional or dishonorable conduct" means, among other things, the procuring, or aiding or abetting in procuring, a criminal abortion. It provides that before revoking the license a complaint under oath must be filed charging the acts of unprofessional or dishonorable conduct and facts complained of, in ordinary and concise language. A complaint against a physician accused him of unprofessional and dishonorable conduct, consisting of wrongfully and unlawfully procuring and aiding and abetting in procuring a criminal abortion upon a pregnant woman specified by means unknown. It was held that the complaint was defective in stating a mere legal conclusion that the defendant was concerned in procuring a criminal abortion, but not stating facts sufficient to authorize the court to make the same deduction that the action of the defendant was criminal.—Board of Medical Examiners v. Eisen, Oregon Supreme Court, 123 Pac. 52.

**Dissection on Coroner's Notice—Physician's Rights.**—Action was brought against a physician for alleged illegal dissection of the plaintiff's son, who had died in a hospital from injuries received in the street in a manner unknown. It appeared that the defendant had been requested by the coroner to make an autopsy, which he did. The New York statute provides that, on the death of any person in the city of New York, from criminal violence, by casualty, or suddenly when in apparent health, or when unattended by a physician, or in prison, or in any suspicious or unusual manner, the coroner shall subpoena one of the coroner's physicians, who shall view the body externally or make an autopsy, as the case may require. It was held that a formal subpoena was not indispensable to the protection of the coroner's physician. The fact that the coroner actlually directed the dissection of the body, and a microscopical examination of the deceased's spleen, was a complete defense to the action.—Hassard v. Lehane, New York Appellate Division, 135 N. Y. Supp. 711.

**License to Practise.**—The Washington statute provides that, in the case of a refusal of a license by the board of medical examiners, the board shall file a brief and concise statement of the grounds and reasons for such refusal in the office of its secretary, to remain, with the board's decision in writing, of record in said office. It appeared that the decision refusing the application of an applicant to practice osteopathy had been lost from the files or misplaced. It was held, in proceedings to compel the board to act upon the application anew, that the loss did not entitle the applicant to require the board to act upon his application as if in the first instance. Nor did the failure of the board to notify him that a license had been refused him entitle him to a rehearing on his application.—State v. Witter, Washington Supreme Court, 123 Pac. 471.

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## RECENT STUDIES ON ORTHOSTATIC ALBUMINURIA.

ONE of the most interesting and at the same time puzzling conditions found chiefly during the adolescent period is that designated variously as functional, cyclical, paroxysmal, or orthostatic albuminuria. The multiple nomenclature is ample evidence of the obscurity that veils the real cause of this phenomenon. Attempts have been made to explain the latter on the basis of supposed organic changes in the kidneys akin to those of chronic nephritis, of vasomotor derangements in these organs, or of traumatic influences. Whatever the causation, the discovery of even a slight and intermittent albuminuria in an otherwise healthy though somewhat neurasthenic adolescent, is frequently the cause of considerable concern to the parent and physician, and of an unjust discrimination on the part of public physical examining boards and of life insurance companies.

A careful study of certain clinical and experimental aspects of this question has recently been made by V. Gomolitsky, who reports his results in the *Zeitschrift für klinische Medizin*, Vol. 77, Nos. 1 and 2. His investigation was prompted by the observations made by Schreiber and Shebrowsky, namely, that palpation of the kidneys in subjects in which these organs are movable causes a slight and transient albuminuria. The experiments of Gomolitsky were carried out in the Medical Institute for Women in St. Petersburg. In thirty-five cases of nephroptosis he applied various mechanical insults to the kidney, such as palpation, compression, vibratory stimulation through the abdominal wall, shaking of the entire body, making the patient walk rapidly up and down the room with or without an abdominal binder, and subjecting the region of the kidney to the action of cold and of the galvanic and faradic currents. In twenty-seven of the thirty-five cases repeated palpation of the kidneys did not give rise to albuminuria, nor were any of the other mechanical stimuli more effective in evoking this condition. The existence of a "palpatory albuminuria" may therefore be questioned in the light of these observations.

The explanations of the cause of orthostatic albuminuria have been numerous. Heubner attributed this condition to a general bodily weakness and anemia, while Senator and others perceived in it an expression or sequence of distinct nephritic processes. Von Noorden regards it as the result of changes in the blood—as a "diabetes albuminosus." Hauser believes that the albuminuria is the result of the action of toxic metabolic products upon kidneys already damaged by some infectious process. Teissier and Martin have alluded to the frequent coincidence of orthostatic albuminuria and tuberculosis. Turettini, Marie, and Teissier have noted a neuropathic element, a close analogy with migraine being pointed out by Marie. Von Leube believes that the basic cause of orthostatic albuminuria is cardiac insufficiency associated with anemia and a tendency to venous congestion. Edel, Pribram, and others seek to explain orthostatic albuminuria on the basis of vasomotor disturbances. The theory which has won most acceptance has been that advanced by Jehle, namely, that a spinal lordosis in the lumbar region is the efficient cause of orthostatic albuminuria.

The important observation has been made by Gomolitsky that in cases of scarlet fever orthostatic albuminuria is a common occurrence. The same is true of a number of other infectious diseases, notably typhoid fever, relapsing fever, lobar pneumonia, and chronic pulmonary tuberculosis. Orthostatic albuminuria bears no relationship to the degree of blood pressure or to the pulse rate. It has been shown that traumatism plays no rôle as a causative factor. The real cause is perceived in a functional incapacity of the kidneys, of hereditary origin, or sequent to any cause debilitating the entire organism, such as infection and the intensive growth of the body during the period of adolescence. A toxic agent affecting the kidneys is regarded as constituting the predisposing cause, while the exciting cause is held to be a functional impairment of these organs following the assumption of the erect posture.

A number of other important problems in connection with this subject await solution. The significance of venous stasis in the kidneys, and its relationship to lumbar lordosis, and the influence of this distortion upon the kidneys, upon their position and upon their nerves and blood vessels, are not the least of these problems.

## INSANITY AND THE NEUROPATHIC INHERITANCE.

WHAT is the relation of insanity to the so-called neuropathic inheritance? In a paper read before the Royal Society of London, on January 28, 1913 (*Lancet*, February 8, 1913), Dr. F. W. Mott attempts to supply an answer to this question. He points out that there are individuals born of sound mental and physical stocks that no acquired conditions, disease, drink, poisons, either engendered within the body or taken from without, head injuries, emotional shock, distress, and even profound misery and destitution combined, could render insane. There are others, and these are in most cases derived from a neuropathic stock, whose mental equilibrium might be disturbed by any of these conditions, or even without any apparent cause,

except the physiological conditions appertaining to the functions of the sexual glands at puberty, during adolescence, the puerperium, lactation, and the climacteric in women. Mott says every case of insanity should be regarded as a biological problem, and study resolves itself into the acquirement of a knowledge of what the individual was born with—nature, and what happened after birth—nurture. The former of these could be ascertained by a study of the ancestral stocks. Just as bodily features are transmitted from one generation to another, so is temperament. As for degeneration, Morel has drawn attention to the fact that nervous, irritable weakness and neurasthenic predisposition might be the first evidence of degeneration of a stock. The signs of degeneracy might be manifested as self-centered narrow-mindedness in religious beliefs, fanaticism, mysticism, spiritism, and unwholesome contempt of traditional custom, social usages, and morality, a vain spirit of spurious art and culture, a fake self-loving vanity in the pursuit of sentimental altruism, the intelligence being well preserved.

Mott, while considering that such qualities might be combined with latent or active genius, concludes that the brilliant intellectual qualities of a degenerate are generally associated with a lack either of moral sense or of sound judgment and higher control. Notwithstanding this view, however, Mott declares that the world's history has been made by men who were either epileptics, insane, or born of neuropathic stock. For instance, Alexander the Great, Julius Cæsar, Napoleon, Peter the Great, Frederick the Great, Pitt, Mahomet, the Apostle Paul, Martin Luther, Emanuel Swedenborg, and others. Among English poets, Cowper, Wordsworth, Byron, Gray, Burns, Chatterton, and Thompson were either insane or possessed the neuropathic temperament. Mott, therefore, seems to be of the opinion that genius is to madness near akin, and that insanity and neuropathy are in many instaces closely allied. Degeneracy on a large scale is a curse, but genius, if not a blessing to the possessor thereof, is a boon to the race at large. Without the neuropathic taint it is possible that there might be no geniuses, but with degeneracy rampant a nation must decay. Consequently, it would be madness to encourage or permit degeneracy because by so doing geniuses might be bred, for it must be borne in mind that while few degenerates are endowed with the divine spark, many of them are mentally, physically, and morally a bane to the race. Better it will be to uproot degeneracy as far as is possible, even if some brilliant brains are lost to the world thereby. In any avent, city environment should be improved by all the means in our power, as it is in the crowded cities that the worst type of degenerate is evolved. And after all, environment is a powerful factor in the manufacture of this product of civilization.

## "FAIRNESS TO A FOREIGN SCIENTIST."

Under this title *The Sun* of this city, a journal usually as well informed as it is fair minded in matters medical, uses the Friedmann episode as a text for some hard sayings regarding the profession in general and medical societies and journals in particular. In the first place the writer says that the press of the country has not been fair to Friedmann, "being misled by the violent opposition of a large majority of our medical journals and the action of some of our medical societies." We have read all that the leading medical journals of this country have had to say regarding Friedmann and his alleged remedy for tuberculosis, and while we have noted a tone of healthy scepticism in most of their editorial comments, we have never seen any evidence of "violent opposition" to him or his cultures. The Medical Society of the County of New York insisted that a trial of the remedy should be made in the proper way in the hospitals, and not (at so much per) in a private office, and the Medical Record and its contemporaries have maintained that such was the correct mode of procedure. But, as we remarked last week, the fact that Dr. Friedmann had tried at first to come in on the money basis, charging patients a fee for the privilege of being experimented upon, should not be allowed to prejudice the profession against his remedy which might on fair trial prove to be of therapeutic as well as commercial value.

The writer in *The Sun* is seemingly offering a defense of Friedmann's secrecy regarding the nature of his vaccine, but he does the man a bad turn when he casts slurs on the medical profession. "To the average reader," he says, "medical ethics appear to aim at the protection of medical men rather than the welfare of the public." He adds: "This is a fallacious idea," yet proceeds immediately to argue that such is the fact, for he says: "The beneficent influence of the 'Hippocratic oath' happily still sways the medical mind; and to this fact must be attributed the seeming indifference of the true physician to the interests of the patient when a question of ethics is involved." The opposition to Friedmann in Berlin, he adds, was due to the fact that he would not reveal the secret of his alleged remedy, and arose not so much from apprehension of harm to the sick as from fear that the good name of German science would be smirched by the exploiter of the remedy.

We commented last week on the troubles that had come to Dr. Friedmann, seemingly through bad advice. The poor man is now in danger of being prejudiced still more in the minds of his colleagues through the arguments of his supporters—if their only defense of him is to be an attack on the medical profession of this country.

## Army Surgery in the Balkan Campaign.

Very recently Professor Küttner of Breslau delivered a most interesting address on modern military surgery at the Postgraduate Medical School in which he utilized results from all recent warfare by land and sea. At a recent meeting of the Royal Imperial Medical Society of Vienna, Professor Exner gave an address on the military surgery of the current Balkan-Turkish war (*Münchener medizinische Wochenschrift,* February 4). The author has been in charge of the reserve hospital at Sofia, whither the wounded were conveyed in six-day marches in ox carts. They reached their destination exhausted and poorly nursed. There was an unusually large proportion of infected bone fractures, of which the milder types healed, as a

rule, promptly under immobilization. In all the author was called upon to supervise the treatment of 1,200 soldiers. Of twelve cases of tetanus but two survived. The victims might have been saved by superior transportation. There was not as much difference in the morbidity of infantry and artillery wounds as one usually expects, which is explained by the supposition that the latter were not as dangerous as usual. The worth of the conservative treatment of these wounds was borne out over and over. This holds good chiefly for infected wounds in which prompt opening and drainage were practised. There were but few cases of bullet extraction. There were over 80 cases of shot wounds of the lungs, which were not infected and but few were disturbed. Injury to both lungs gave a bad prognosis. In general the surgical resources of the Balkan allies were much below the European standard.

### Misinterpretation of Symptoms.

If a child of 13, undoubtedly syphilitic at birth, should present dystrophic alterations in the skin and teeth, few physicians would be circumspect enough to think of any other etiology for these anomalies. The dry, harsh skin and Hutchinson's teeth were indeed once regarded as pathognomonic of inherited syphilis, and have readily been explained by arrested growth due to injured germ plasm. But suppose it is learned that the child comes of a family which has been afflicted for several generations with this very same dystrophy? This experience occurred to Christ as related by him to the Wiesbaden Medical Society last December (*Berliner klinische Wochenschrift,* February 10). The dystrophy was therefore much more deeply seated than if syphilis had been the cause. Even the ozena which had been present for years was better explained as a feature of the dystrophy than as syphilitic. The child had given a negative Wassermann for at least two years. The discussion which followed showed the growing belief that antenatal deformities depend on an antecedent insufficiency of the glands of internal secretion. The connecting link between the former and the actual anomalies is seen in the sympathetic system. A peculiarity of the author's case had been mentioned —a certain sparing of the trifacial area in which the anlage for hair was recognizable. This very area is better innervated by the sympathetic than any other. Herxheimer, who examined various sections of integument, found no sign of sweat or sebaceous glands or hair follicles or arrectores pilorum. All the other tissues of the integument were underdeveloped.

### Nature of Epistaxis in Childhood and Youth.

This phenomenon, occurring as it does in a large proportion of growing individuals, from the outset of the "second infancy" of the French—which coincides roughly with the period of school years—has usually been regarded as developmental in character, a common disorder of daily life, like headache or constipation, which becomes pathological only when it cannot be arrested by ordinary means. Naturally there are other components, either exciting causes of traumatic nature or vague predisposing elements, such as mouth breathing and its various causes. Syphilis is to be thought of in severe repeated cases, likewise, of course, hemorrhagic diathesis. At a recent meeting of the local medical society at Chemnitz (*Münchener medizinische Wochenschrift,* February 3, 1913) Nobis took up the subject of nosebleed in youth as one more or less neglected or sidetracked in one respect, to wit, prognosis. Nosebleed in a child or adolescent is a habit which often persists for a decade or more. If the loss of blood is insignificant nothing need happen. But if the nosebleed is of frequent occurrence, so that the loss of blood is considerable, the resistance of the subject to disease is notably decreased. Not a few cases of tuberculosis may be traced to this source. Attention is called to the fact that nosebleed subjects eat most heartily in the evening so that during the night they tend to sleep and digest poorly. They awake with coated tongue and repugnance to food of any kind. The author advises a toilet of the nose, a pushing of good food early in the day with a light meal at night. The suspicion of a syphilitic taint often justifies the use of iodides, which involves abstinence from fruit and sweets.

## News of the Week.

**The Education and Training of Cripples.**—A sectional meeting on crippled children was held in connection with the Conference on Industrial Education for Children in the Assembly Hall of the Metropolitan Building, New York City, on March 8, 1913. This was the first occasion of the consideration of the special needs of cripples by any general conference. Mr. Douglas C. McMurtrie presided at the meeting and spoke of the historical development of care for the deformed and the experience in connection with trade training both in the United States and abroad. Mr. Charles H. Burr, superintendent of the city hospital and country branch of the New York Orthopedic Hospital told of the lessening necessity for industrial education in the work of his institution, this being due to the early ages at which they were getting their patients. With young children the chief need is for primary instruction. Dr. Charles H. Jaeger discussed the industrial training provided for adult cripples at the Trade School of the Hospital of Hope. Miss Florence Sullivan, in reference to the experience at the trade school for crippled boys and girls maintained by the Brearley League, spoke of the difficulty of getting as pupils boys and girls who were willing to give up enough time to take advantage of a full course. Miss Evelyn Goldsmith told of the need for industrial training for the graduates of the special classes for cripples in the public schools. Among those taking part in the discussion were Miss Catherine A. Bliss and Miss Edith Bond of the Association for the Aid of Crippled Children, Miss Reed of the social service departmnet of the New York Orthopedic Hospital, and Miss Janet Daniels, secretary of the Federation of Associations for Cripples. A resolution was adopted that the section be continued annually.

**The Friedmann Culture.**—After a long series of promises and withdrawals, three patients were actually treated by Dr. Friedmann with his tuberculosis "cure" on March 6 at the Peoples' Hospital, New York, on March 8 a number of other patients received the treatment privately, and the following day more were treated at Mt. Sinai Hospital. The hotel at which Dr. Friedmann has been staying, the offices at which, according to announcements, he would be prepared to give treatment to all-comers, and the hospital where he gave the first

treatment to carefully selected patients only, have been besieged by hundreds of wretched individuals, eager for help and ready to grasp at any hope. The matter has now been taken up by the Public Health Service, in whose hands the testing of the efficacy of the vaccine may safely be left, though no definite report can be made for some months. Surgeon General Blue has appointed Surgeon John F. Anderson and Passed Assistant Surgeon Arthur M. Stimson, to confer with Dr. Friedmann, be instructed as to his procedures, obtain samples of his culture, if possible, and conduct experiments in the Hygienic Laboratory. They will also keep under observation the patients treated by Dr. Friedmann. If the latter, therefore, lives up to his promises, some authentic report as to the value of his treatment may be expected. He has been lecturing and trying his remedy this week in Canada, where he appears to have made a favorable impression.

**City Death Rate.**—The death rate in New York City remains higher than the record established last year. For the week ending March 1, the rate was 16.50 per thousand, as compared with 15.50 for the same week of last year, while the total number of deaths was 1,699 as compared with 1,546. To the greater prevalence of influenza is ascribed the increase; and as compared with last year there were 105 more deaths from pneumonia, 40 more from Bright's disease, and 37 more from organic heart disease. The mortality of children under one year of age was slightly decreased.

**Dr. O. V. Huffman,** Secretary of the New York State Board of Medical Examiners, has been elected Secretary-Treasurer of the Federation of State Medical Boards, a national organization which will undertake the task of securing uniform legislation in regard to medical education and medical practice throughout the States.

**Dr. Fordyce Appointed.**—The Trustees of Columbia University, at their meeting on March 3, on the recommendation of the Medical Faculty, appointed Dr. John Addison Fordyce as professor of dermatology in the College of Physicians and Surgeons, succeeding Prof. George T. Jackson, resigned.

**Crocker Research Fund.**—Provision for the housing of the workers under the George Crocker Special Research Fund is to be made by Columbia University shortly in the erection of a small laboratory on East Field of the University. The new building, which it is hoped will be ready for occupancy in the late summer, is to measure 40 by 100 feet, and to consist of three floors and basement. Heretofore, workers under the Crocker Fund have been scattered through the various departments of the College of Physicians and Surgons and the need of a special laboratory for them has been greatly felt. The Fund, which amounts to about a million and a half of dollars, has been placed under the direction of Dr. Francis Carter Wood.

**Contagion in Schools.**—Supt. Maxwell of the New York City public schools, has recently issued a circular calling attention to the fact that a principal may bar from school a pupil suffering from contagious disease without waiting to secure a certificate from a physician of the Department of Health.

**Dispensary Statistics.**—The report on dispensary abuses made to the New York County Medical Society by its committee has called forth many denials and some interesting statistics. Secretary Hebberd contends that the alleged abuses are not under the control of the State Department of Charities and that the enforcement of the law is not in its hands, and, moreover, that the conditions have been exaggerated. Mr. Hebberd also contends that there has been much improvement within the last few years. In 1898, there were in New York City 123 dispensaries, which treated 1,052,177 patients, who received 2,189,655 treatments, representing 14.86 per cent. of the population; while in 1912, there were 99 licensed dispensaries, which treated 843,724 patients, who received 2,691,497 treatments, representing 8.81 per cent. of the population. The present law governing dispensaries was enacted in 1899.

**Dr. S. Weir Mitchell** of Philadelphia was the guest of the Milwaukee Medical Society at its meeting on February 27.

**Gifts to Charities.**—The Montefiore Home and the School for Crippled Children, New York, receive $1,000 each by the will of the late Mr. Alexander Sinsheimer of this city. Lebanon Hospital, Beth Israel Hospital, New York, and the Jewish Hospital in Worms, Germany, share in the residuary estate, the value of which is not stated.

**Jacobi Fellowship.**—As previously announced, the Woman's Medical Association of New York offers the Mary Putnam Jacobi Fellowship of $800, available for post-graduate study. It is open to any woman graduate of medicine. Applications for the year, beginning October 1, 1913, must be in the hands of the Committee by April 1, and the award will be announced by June 1, 1913. Further information may be obtained from the Chairman of the Fellowship Committee, Dr. Emily Lewi, 35 Mt. Morris Park West, New York.

**Experimental Surgery.**—A new laboratory for the use of workers in experimental surgery, has recently been opened at the Flower Hospital and Medical College, New York, under the direction of Dr. A. L. Soresi, professor of experimental surgery. Special courses will be offered to graduates in medicine.

**Rabies Epidemic.**—Reports of an epidemic of hydrophobia in Palestine have been received and it is stated that Mr. Nathan Straus of New York will shortly establish a laboratory there for the treatment of the disease by the Pasteur method.

**Smallpox in Hartford.**—Five cases of this disease in the Hartford Hospital, Hartford, Conn., have made it necessary to quarantine the institution.

**Nurses Graduate.**—Eighteen women received diplomas last week at the annual commencement exercises of the Lebanon Hospital Training School for Nurses, New York.

**Tennessee State Medical Association.**—The annual meeting of this association will be held in Nashville on April 8, 9, and 10.

**A Symposium on Tuberculosis of the Urogenital Tract.**—The next meeting of the Section on Genitourinary Surgery, of which Dr. Walter Brooks Brouner is Chairman and Dr. Joseph Francis McCarthy, Secretary, will be held March 19, at 8:30 P. M., at the New York Academy of Medicine. In addition to the reading of papers there will be a pathological exhibit of specimens of tuberculosis of the urogenital tract. The papers of the evening will be as follows: "Debatable Factors in the Surgical Discipline of Renal, Ureteral, and Vesical Tuberculosis," by Dr. Martin W. Ware. "Tuberculosis of the Epididymis; Its Effect upon Testicle and Prostate," by Dr. J. Dellinger Barney of Boston. "Urinary Findings in One Hundred

Cases of Tuberculosis of the Urogenital Tract," by Dr. Frederic E. Sondern.

**The Notification of Venereal Diseases.**—The Harlem Medical Association has passed a series of resolutions condemning the action of the Board of Health regarding the notification of venereal diseases. It says "the proposed 'administrative supervision' of venereal diseases by the Board of Health is inopportune, useless, dangerous, and opposed to the best interests of the public and the medical profession; that the enforced notification of the name and address of any patient suffering from venereal disease, as well as the presumed source of infection, is a direct violation of the professional secrecy which should ever exist between patient and physician; . . . . that no matter how secret or confidential a public city department may intend to keep such knowledge . . . . there will ever exist the greatest danger that knowledge of such diseases might be secured and carried directly within the family circle, where it would strike a blow at the very foundation of our social fabric by separating husband and wife, as well as degrading their social and commercial usefulness in the community." The association therefore protests against the enactment or enforcement of any order relative to the reporting of cases of venereal diseases to the Board of Health, and begs the Mayor and the president of the Board of Health to take the steps necessary to prevent its being carried into effect.

**Medical Society Elections.**—Lying-In Hospital Alumni.—The officers of the Alumni Association of the Lying-In Hospital, New York, for 1913, are as follows: *President,* Dr. H. B. Blackwell; *Vice-President,* Dr. M. L. Bradley; *Editor,* Dr. D. J. Hamburg; *Secretary-Treasurer,* Dr. C. Frederic Jellinghaus.

Cherokee County (S. C.) Medical Society.—At the organization of this society at Gaffney on February 25 the following officers were elected: *President,* Dr. J. T. Darwin; *Vice-President,* Dr. Mason W. Smith; *Secretary,* Dr. Victor Roberts, Blacksburg.

Reading (Pa.) Medical Society.—The following officers were elected at the annual meeting on February 28: *President,* Dr. Walter Bertolet; *Vice-President,* Dr. J. Wagner; *Secretary,* Dr. Claude Bankes; *Treasurer,* Dr. Clara S. Keiser.

Laurens County (S. C.) Medical Society.—At the annual meeting held in Laurens on February 24 officers were elected as follows: *President,* Dr. J. H. Teague, Laurens; *Vice-Presidents,* Dr. Isadore Schayer, Laurens, and Dr. J. Lee Young, Clinton; *Secretary-Treasurer,* Dr. T. F. Klugh, Cross Hill; *Reporter,* Dr. J. L. Fennel, Waterloo.

Simpson County (Miss.) Medical Society.—Officers were elected at the annual meeting at Mendenhall on February 21 as follows: *President,* Dr. Chandler, Braxton; *Vice-President,* Dr. E. Kennedy, Magee; *Treasurer,* Dr. A. Norman, Braxton.

**Obituary Notes.**—Dr. John Davies Trezise of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1901, a member of the New York State and Kings County Medical Societies and the Greater New York Medical Society, and for many years connected with the Department of Health in Brooklyn, died at his home from pneumonia on March 4, aged 51 years.

Dr. George Fischer of Paterson, N. J., a graduate of the University of Wurzburg, Bavaria, in 1889, and a member of the American Medical Association and the New Jersey State and Passaic County Medical Societies, died at his home on February 22, aged 47 years.

Dr. Edith Barton of Scranton, Pa., a graduate of the Women's Medical College of Pennsylvania, Philadelphia, in 1902, and a member of the Pennsylvania State and Lackawanna County Medical Societies, died at her home on February 20.

Dr. George White McClure of Springfield, Mo., a graduate of the Rush Medical College, Chicago, in 1900, and a member of the American Medical Association and the Missouri State and Greene County Medical Societies, died at his home from tuberculosis, after a long illness, on February 17, aged 35 years.

Dr. George Albert Clark of Portland, Me., a graduate of the Medical School of Maine, Portland, in 1870, and a member of the Maine State and Cumberland County Medical Societies, died at his home after a long illness, on February 18, aged 66 years.

Dr. J. B. Shawgo of Quincy, Ill., a graduate of the Bennett Medical College, Chicago, in 1877, and a member of the Illinois State and Adams County Medical Societies, died in a hospital at Jacksonville, on February 19, aged 69 years.

Dr. John Anthony Hobson of Flushing, Ohio, a graduate of the Miami Medical College Cincinnati, in 1872, the founder and physician in charge of the Flushing Hospital, and a member of the American Medical Association and the Ohio State and Belmont County Medical Societies, died suddenly on February 21, aged 63 years.

Dr. Rush H. Dew of Salem, W. Va., died at his home on February 21, aged 70 years.

Dr. Edward Pardee Bucke of London, Ont., a graduate of the Western University, Medical Department, London, in 1899, died at his home from pneumonia, after a short illness, on February 15, aged 37 years.

Dr. Hamilton Graham of Kennett Square, Penn., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1892, died at his home on February 22, aged 43 years.

Dr. William I. Reese of Adamson, Okla., a graduate of the College of Physicians and Surgeons, Baltimore, in 1893, died and his home suddenly on February 14.

Dr. Herbert W. Ferry of Poland, O., a graduate of the University of Illinois, College of Medicine, in 1904, a member of the Ohio State and Mahoning County Medical Societies, and a veteran of the Spanish American War, died at his home from pneumonia, on February 14, aged 36 years.

Dr. Robert Alfred Moore of Durham, N. C., a graduate of the University of Maryland, School of Medicine, Baltimore, in 1891, and a member of the North Carolina State and Durham County Medical Society, died at his home after a long illness, on February 18, aged 43 years.

Dr. N. Graham Shaw of Maysville, N. C., a graduate of the North Carolina Medical College, Charlotte, died at his home on February 13, aged 52 years.

Dr. Alfred James Brown of Higbee, Mo., a graduate of the Bellevue Hospital Medical College, New York in 1877, died suddenly at his home on February 18, aged 56 years.

Dr. Michael H. Foy of Yonkers, N. Y., a graduate of the New York University Medical College in 1898, a member of the Jenkins Medical

Society, and attending physician to St. Joseph's Hospital, died in the hospital on March 5, following an operation for appendicitis, aged 39 years.

Dr. John Warren Willis of Waltham, Mass., a graduate of Harvard Medical School, Boston, in 1861, and a member of the Massachusetts State and Middlesex County Medical Societies, died recently at his home, aged 81 years.

Dr. Charles B. Holmes of Rahway, N. J., a graduate of the New York Homeopathic Medical College and Hospital in 1874, four times mayor of Rahway, and an active member of the Board of Trade, died recently at his home, aged 64 years.

Dr. Frederick C. Johnson of Wilkesbarre, Pa., owner of the Wilkesbarre Record and formerly one of the editors of the Chicago Tribune, who was graduated from the Medical Department of the University of Pennsylvania in 1882, but relinquished his profession to take up journalism, died at his home on March 4, aged 54 years.

Dr. Thomas Knowlton Marcy of Poquonock, Conn., a graduate of the College of Physicians and Surgeons, New York, in 1860, died at his home on March 2, aged 78 years.

Dr. John W. Dal of Chicago, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1878, and a member of the American Medical Association and the Illinois State and Cook County Medical Societies, died on February 13, after a long illness, at West Olive, Mich, aged 58 years.

Dr. Jesse T. Dunn of Louisville, Ky., a graduate of the University of Louisville, Medical Department, in 1890, a member of the American Medical Association and of the Kentucky State and Jefferson County Medical Societies, and formerly a member of the faculty of the Medical Department of Kentucky University, died in the Jewish Hospital, Louisville, from pneumonia, after a short illness, on March 1, aged 45 years.

Dr. James Edwin Clemens of New Orleans, La., a graduate of the University of Louisville, Medical Department, in 1881, died at his home on February 27, after a short illness.

Dr. Lewis E. Norris of Hampden Highlands, Me., a graduate of the Thompsonian College, Barbourville, Ga., in 1861, and a veteran of the Civil War, died at a hospital in Bangor, from pneumonia, on March 2, aged 76 years.

Dr. John M. Wakefield of Warren, Me., a graduate of the Dartmouth Medical School, Hanover, in 1875, and a member of the American Medical Association and of the Maine State and Knox County Medical Societies, died at his home suddenly on February 27, aged 61 years.

Dr. Merritt Allen Long of Lowell, Mass., a graduate of Tufts College Medical School, Boston, in 1905, and a member of the Massachusetts State and Middlesex County Medical Societies, died at the Lowell General Hospital from septic pneumonia on March 4, aged 35 years.

Dr. Lyman R. Woodson of Rushville, Mo., a graduate of the Ensworth Medical College, St. Joseph, in 1898, died at his home on February 27, just after being appointed to the position of physician in State Hospital No. 2, St. Joseph, at the age of 36 years

Dr. Edward E. Kitchen of St. George, Ontario, a graduate of the Toronto School of Medicine in 1865, and formerly chairman of the Provincial Board of Health, died at his home after a long illness on February 19, aged 66 years.

# Correspondence.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

HUNTER'S DAY—SCOLIOSIS—CONSTRUCTION OF MODERN HOSPITALS—CHOICE OF DOCTOR REFUSED UNDER INSURANCE ACT—NOTES—OBITUARY.

London, February 21, 1913.

Hunter's day (the 14th inst.) was celebrated in the accustomed manner at the Royal College of Surgeons. Sir Rickman J. Godlee, president, delivered the oration in the afternoon, and also took the chair at the dinner in the evening. In his oration he drew an interesting picture of Hunter among his friends, many of them celebrities of the period, also of his house, of which he showed a ground plan, and referred to its remarkable contents. Passing to his museum, he reminded the audience that Hunter was not only a man of phenomenal industry, but one endowed with the mania for collecting, who thought of money only as a means of crowding his house with works of art and his museum with specimens illustrating not only his novel views of physiology, but others interesting from their rarity or beauty. Sir Rickman then noticed some of the changes in the museum since it was bequeathed by the founder. Clift, who wrote descriptions, made drawings and dissections, etc., had been engaged without fee, and worked for about a year and a half when Hunter died. He was then retained at 7 shillings a week to catalogue and dust. When at last the government gave £15,000 for the collection, and subsequently a further £12,000, and the college gave £21,000 for the first building for it, Clift was made the first conservator, retiring on a pension in 1842, and was followed by Richard Owen, whose great work was the publication of the illustrated catalogue of the comparative anatomy series. Next came Queckett, who was essentially a microscopist, and made a microscope for himself out of a roasting jack, a parasol, and a few bits of iron. He left to the museum a valuable microscopic collection, and was succeeded by Flower, who, starting as a surgeon, became a pure anatomist, and greatly enriched the osteological collection. Then came Stewart, with excellent work on mimicry, symbiosis, and protective coloring. Now, under Dr. Keith, the aim of the college is to adhere closely to Hunter's principles, to regard his words "body, blood, and motion," as their motto to illustrate the processes of life. The president then pointed out that since its erection, in 1800, the museum had been more than trebled, and was certain to be still further enlarged. It now contains 64,766 mounted specimens. He illustrated its arrangement to show its harmony with Hunter's original conception, and then referred to the losses sustained by the college in the deaths of Mr. Dent, Sir Henry Bullin, and Lord Lister. As to the future, he asked if the country ought not to have an anatomical and pathological institute, forming part of a living university, of which the college would be the medical faculty, offering opportunities and the vast material of the museum for original research, and expounding in its lectures the advances made.

At the Polyclinic, in Cherries Street, on January 27, Mr. Muirhead Little of the Orthopedic Hospital, lectured on "Some Recent Advances in the Treatment of Scoliosis."

After a brief description of what scoliosis is, of its varieties, and causes, and of the difficulties which have on too many instances rendered treatment practically ineffective, the lecturer said that no doubt by long and continuous treatment, and by devoting most if not all the time of the patient thereto, marked and beneficial results had been achieved by various surgeons.

Such treatment, however, was beyond the reach of the greater number of cases attending at hospitals, and even beyond the reach of some classes of private patients.

The method introduced by Dr. E. G. Abbott of Portland, Maine, was almost startling in its simplicity. Mr. Little described this method and the apparatus which Dr. Abbott used in the application of plaster jackets.

The great innovation in the treatment lay in flexing the spine as much as possible, instead of attempting to correct the rotation or extension, as had been the practice of all surgeons hitherto. Although so far he had not yet succeeded in correcting such severe cases as those figured in Dr. Abbott's paper in the New York *Medical Journal* of April 27, 1912, this was probably due to lack of experience in the details of the method. At least, he was able to say that after a short experience in a few cases he had been able to effect much greater improvement, amounting in some cases to cure, than he had achieved by any other proceeding. In the lecturer's opinion very great credit was due to Dr. Abbott for his innovation, and he was to be heartily congratulated on his powers of observation and on the perspicacity which had led him to his conclusions, and the industry with which he had worked out the method.

On Tuesday evening, at the Royal Institute of British Architects, two papers were read on "Modern Hospitals," in both of which the difference between English, American, and continental plans were considered. Mr. A. Saxon Snell read the first, and said that whereas in England we concentrated on sanitary fittings, local cleanliness, and exclusion of soil-tainted air, on the continent better provision was made for space. The pavilion type adopted as a result of the Crimean War was again emphasized in the American and Franco-German wars. Two notable attempts in planning ward blocks had recently been made, (1) to substitute circular wards for pavilions; (2) to group all wards together. Mr. Snell attacked the niggardly areas provided for sites as in two of the latest and most magnificent (Royal Infirmary of Manchester, and King's College, London). He held that in and around cities, hospitals might be placed in the center of public parks, but mountains of prejudice would have to be overcome and all kinds of solemn nonsense would cry out. To secure a sufficiency of light and air, he said, the only method was to have one-story buildings, widely spaced on the site, and designed with few shadow-casting and air-obstructing projections. It would be well, too, for them to be raised above the ground on arches. The increased area required would only be about 30 per cent.

The second paper was by Mr. Milburn, who contrasted American and European construction by reference to some of the best-known examples. It was, he thought, for the medical rather than the architect profession to say whether the typical German general hospital was superior to the English. Foreign opinion held that the English, with all its excellent points, was inclined to be stereotyped in arrangement and planning of the ward unit, but the out-patient departments, and fever hospitals, were regarded as superior, and in the best examples the internal design, also. The Germans opposed more than 1,500 beds in one hospital. Mr. Milburn also said he did not consider the height of American and English hospitals objectionable. There was a tendency which he approved to decrease the large ward. The ideal, though practically impossible, was a separate ward and nurse for every acute case. He suggested building special pavilions for private patients, and strongly approved the American and continental practice of providing grounds and gardens. He hoped general hospitals would obtain suburban and larger sites.

Mr. E. T. Hall moved a vote of thanks to the two authors of the papers, and said the number of stories was governed by the site. A town hospital, surrounded by streets, might be as good as a country one. The essential was fresh air. With small wards nursing cost increased. He favored large wards, with small annexes for special purposes. Larger spaces per bed were less important where the open air system was adopted.

Dr. P. Boobbyer, seconding the vote, which enthusiastically carried, said that from introducing the system of free ventilation without artificial heating he had gone on to treating patients in open-air verandas, even pneumonia and scarlet fever with a temperature of 105°, without so far any untoward result. Artificial ventilation should be avoided as far as possible.

The insurance commissioners have issued a long memorandum to the committees, telling them that the right of patients to choose their own doctor, so often asserted by Mr. Lloyd George in his speeches, and provided for in the act, only applies to exceptional cases, and that they are to carefully consider each application. They say the majority of cases so far are for attendance by doctors not on the panel, and many can be met by those gentlemen coming on. Classes are not to be admitted as a whole, nor too many to choose the same doctor, as that would assist those setting up alternative services. The commissioners assert that the act does not mean what everyone understood it to mean. Heretofore it has been held that the only interpreters of the law are the judges. If commissioners appointed by the promoters of an act are to be allowed to assume the powers and authority of the judges the way is clear for any tyranny. The socialist papers are chuckling over the defeat of the doctors, and do not seem to see that similar trickery might be played upon themselves.

Sir W. Ramsay, presiding at the Institute of Sanitary Engineers on Monday, protested against the waste of time in discussing abstruse political problems which affected very few people, to the neglect of questions of sanitation, which affected everyone. He would have sensational legislation let alone, and time and energy devoted to sewage, water supply, housing, and other things conducing to the health and happiness of the people rather than to excitement which did absolutely no good.

Sir Ronald Ross, F.R.S., K.C.B., at the request of the Colonial Secretary, will visit Cyprus to investigate the causes of the prevalence of malarial fever on the island, and advise as to the means of combating the disease.

Army medical officers are to encourage soldiers by lectures, demonstrations, or as they think best,

to be inoculated against enteric—especially as they attain the age of liability for foreign service.

The death of another doctor "by misadventure" is the verdict of a coroner's jury. He had taken an overdose of morphia, being a sufferer from insomnia.

Sir Thomas Chavasse, senior surgeon to Birmingham General Hospital, died on Tuesday, in his 59th year, from heart failure. He had sustained a fracture of the femur from a fall in the hunting field shortly before Christmas, and had not regained his normal health. He graduated at Edinburgh, in 1878, and took the Fellowship of the Edinburgh College of Lawyers the same year. In 1899 the London College elected him a Fellow *honoris causa*. He was an esteemed authority on cancer, and contributed on various surgical subjects to the medical societies and journals.

## OUR BERLIN LETTER.

(From Our Regular Correspondent.)

DEATH OF CARL LÖBKER—PROTAGONIST OF THE RIGHTS OF GERMAN PHYSICIANS UNDER THE NATIONAL INSURANCE SCHEME—SCIENTIFIC AND PUBLIC ACTIVITIES—FRIEDMANN'S TREATMENT OF TUBERCULOSIS.

BERLIN, December 31, 1912.

A SHORT time ago there passed away one of the best known and beloved of German physicians. Last October Carl Löbker died after a prolonged illness. He was not a leading figure in the profession; nevertheless, everyone gave an attentive ear to whatever he had to say. Within recent years the opportunity to hear him occurred once annually, when he presided at the reunion of German physicians, and on this occasion he would review all that had touched the heart of the profession during the previous year. With undaunted courage he was able to grapple with problems that others feared to attack. During the first period of his activity as president of the German Medical League there occurred the inception of the national insurance scheme which has won and still retains the sympathetic interest of the profession. The truth has gradually dawned that the success of this scheme depended solely upon the hearty cooperation of the medical fraternity. But at the same time the interests of the physicians have been forgotten. It is becoming more and more manifest that the national insurance law of Germany has harmed the profession, both materially and ethically. The voice of the profession is now being heard. There has been organized in Leipzig a league of physicians who are seeking to accomplish by means of strenuous tactics what could not be attained in a peaceful way. The number of these physicians has grown, but in the beginning the campaign was so new that opposition to it arose in the inner circles of the profession. At this point Löbker threw the weight of his influence on the side of the reformers, and one of his greatest triumphs was his process in getting the entire German profession to adopt the cause of the Leipzig league. With indomitable energy and masterly politics he led the discussion of the physicians' rights before the general meetings. His activity knew no precedent; he threshed out even the minutest details of the subject under discussion.

This extraordinary man was born in Westphalia, 1854, the son of a school teacher. With his twelve brothers and sisters he was certainly not brought up in the lap of plenty. He graduated from the University of Greifswald in 1877. After having been an assistant at the Anatomical Institute, he was successively an assistant in the gynecological clinic and assistant in the surgical clinic under Hueter, with whom he was bound by ties of friendship. His writings, which were based upon his earlier anatomical studies, dealt chiefly with gallstone disease and bone surgery. His "Elements of Operative Surgery" won general acceptance. In 1889 Löbker was appointed director of the first hospital for traumatic surgery, which was established at Bergmannheil. He retained this position for twenty-three years, during which period he transformed the institution into a model of its kind. By means of his vast knowledge, his diagnostic skill and his excellent operative technique he succeeded in making the Bergmannheil hospital the surgical center in Westphalia. He was a good teacher, who made skilled surgeons out of his assistants, who were attached to him with unusual affection for many years. This confidence was reciprocal. For only one year before he died Löbker was operated upon for gallstones, under local anesthesia by one of his assistants. He commanded a large private practice. He took a lively interest in public affairs in his native town, became a member of the Municipal Council, and since 1904 presided over this body. He was a leading spirit in a phenomenally large number of learned organizations. He was a member of the scientific delegation of the medical profession of Prussia, a member of the National Board of Health, and a member of the national organization for professional postgraduate study. He was president of the Westphalia Medical Society and of its committees and of the Court of Honor. His greatest influence was exerted when he filled the office of president of the German Medical League. His death is mourned by the entire profession.

The treatment and prophylaxis of human tuberculosis was the subject of a paper read by F. F. Friedmann on November 6th before the Medical Society. With living tubercle bacilli obtained from the turtle he claims to have succeeded in producing an immunity to tuberculosis, and by means of two injections of these bacilli to have cured long-standing cases of tuberculosis. A number of physicians report good results with this method of treatment, which is said to be effective in cases not only of pulmonary tuberculosis, but also of surgical tuberculosis.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*February* 27, 1913.

1. The Argument for the Large State Insane Hospital. Sir Thomas Clouston.
2. The Symptomatology of Renal Tumors; a Study of Seventy-four Cases from the Massachusetts General Hospital. J. D. Barney.
3. The Early Recognition of Tumors of the Bladder. A. L. Chute.
4. Observations on Recent Cases of Bladder Tumors at the Massachusetts General Hospital, with Special Reference to Operative Technique. R. F. O'Neil.
5. The Value of High Frequency Cauterization in the Treatment of Vesical Papillomata. H. Binney.

2. Tumors of the Bladder.—J. D. Barney emphasizes the fact that hematuria may be a sign of a very serious bladder disease; it should be looked upon with suspicion until its source and cause are clearly demonstrated. Moreover, one should combat the idea of the benign nature of bladder tumors. A very large proportion are malignant from the start in that they infiltrate the bladder wall and lead to metastases. Some that are apparently benign

in the beginning tend later to infiltrate. Some that do not show any tendency to infiltrate tend to multiply and destroy life by hemorrhage, sepsis, and interference with the renal function. Until one's knowledge of these tumors is greater one is taking too great a risk in assuming that any given bladder tumor is clinically benign, though one may have reason to believe that a few probably are. The only proper treatment for tumors of the bladder is their early and complete removal. In most instances this should be by excision.

3. **Tumors of the Bladder.**—A. L. Chute believes that too much stress has been put upon the non-malignant tumors of the bladder, which make up a very small proportion of all cases of bladder tumors. With the exception of a few pedicled prostatic masses, the author has never seen a tumor of the bladder that was not either actually or potentially malignant. The carcinomata and sarcomata are actually malignant; the papillomas, unless eradicated early and thoroughly, are in the vast majority of instances going to spread so as to involve a large amount of the bladder surface; and even when they are not actually malignant, they are going to undermine the health by hemorrhage and sepsis. This sepsis does not limit itself to the bladder, but often extends to the kidney, for with an infected residual of any considerable number of ounces there is going to be back pressure on the kidneys and, finally, pyelonephritis. The second point that has not been made sufficiently clear is in regard to the real malignancy of bladder tumors as a whole. One speaks about the malignant and benign papillomas, referring to their microscopical picture rather than to their clinical course. This gives to many men not especially familiar with them the impression that there is a class of bladder tumors that is really clinically benign. The author does not believe this is so, and believes that all bladder tumors are essentially malignant. Papillomata are not malignant in the sense that they infiltrate or lead to metastases, as the carcinomata and sarcomata do, but they are malignant in the sense that they proliferate locally and lead to danger through hemorrhage and infection of the bladder and kidneys.

5. **High Frequency Cauterization in Treatment of Vesical Papillomata.**—H. Binney finds that high frequency cauterization is an important addition to one's means of attacking vesical papillomata of the non-infiltrating type. If properly applied it is free from complications or danger with the exception of hemorrhage; this appears, however, to be rarely serious or troublesome. High frequency cauterization avoids the danger of multiple recurrences such as occur not infrequently after suprapubic cystotomy. Although the author's cases so treated are too recent for absolute proof of cure, the results are highly encouraging.

## New York Medical Journal.

*March* 1, 1913.

1. Essential Features of Symptomatology and Prognosis in Dementia Præcox. F. X. Dercum.
2. The Diagnostician. A. Bassler.
3. The History of Bloodletting. F. H Garrison.
4. Newer Teachings of Diseases of Gastrointestinal Canal. M. I. Knapp.
5. Family Incidence of Malignant Tumors. G. L. Rohdenburg.
6. Otology from a Medical Point of View. H. N. Spencer.
7. Intramural Abscess of the Puerperal Uterus. A. H. Harrigan.
8. Strangulated Hernia. H. Goldstein.
9. Chorea. P. H. Markley.

1. **Dementia Præcox.**—F. X. Dercum states that the term dementia præcox embraces the following conditions: hebephrenia, catatonia, and dementia paranoides. He reviews the essential features which are common to all of these three forms. First there is a gradual onset, usually of the character of a confusion, but sometimes possessing elements of systematization; second there is present in the early period of the affection hypochrondriasis and depression and in the later period expansion; third, in the majority of cases the affection is progressive and the mental impairment steadily increases and terminates in dementia. The mental state is best interpreted as a confusion. There are present, in general terms, the elements of a confusional insanity, *i.e.* there are present unsystematized, fragmentary, and unrelated delusive ideas, together with hallucinations. In some cases, *i.e.* the older or paranoid cases, there is present or there is an approach to systematization. Second, the patients pass from the depressive to the expansive stage. As a rule the transition is gradual. The features which distinguish the various forms from each other are briefly outlined as follows: As regards hebephrenia it may be stated, first, that the symptoms of dementia præcox are here generalized in type. The characteristics of the more differentiated forms, catatonia and dementia paranoides, are lacking; *i.e.* there are lacking more or less markedly, on the one hand, the special motor phenomena, the fixation, resistance, negativism, and verbigeration of catatonia, and, on the other hand, the systematized delusions of paranoid dementia. Second, as is well known and as was shown statistically by Pickett, hebephrenia is the form met with among the younger patients, *i.e.* the youngest group of all. Consequently, and as might perhaps be justly inferred, the degree of the emotional departures from the normal is less marked than in catatonia and paranoid dementia. Third, the delusive ideas are in hebephrenia wholly unsystematized, fragmentary, changeable, and transitory. In this particular the contrast is most marked with the paranoid form. The distinguishing features of catatonia consist in that there are added to the general symptoms of dementia præcox, definite motor phenomena, spasms, fixed attitudes, stereotyped postures, automatism, negativism, verbigeration, and stupor.

5. **Family Incidence of Malignant Tumors.**—G. L. Rohdenburg reports three examples of the types described by Behla and others. *Cancer à deux,* so called house infections, and family transmissions are all represented. It is known that irritation has a powerful influence in the production of malignant tumors. The three families to which the author's cases belonged were observed during the past six years. Viewed casually the cases apparently furnish evidence supporting the viewpoint of a parasitic etiology. Closer examination shows that irritation is the predominant element, and that combination in family groups and houses is incidental.

7. **Intramural Abscess of the Uterus.**—A. H. Harrigan believes that in order to form a correct conception of intramural abscess of the uterus and to retain its clinical entity, a rigid distinction should be made between it and uterine lesions occasionally seen during the progress of a pelvic thrombophlebitis. In the latter instance the abscesses are small and multiple, and result from the disintegration of venous clots, while in the condition under consideration the abscesses are usually single in number, lymphatic in origin, and mostly situated in one of the uterine cornua. Two explanations are offered for this predilection. According to Championnière, the intrauterine lymphatics converge toward the cornua. Also, as pointed out by Mercade, the embryonal prototypes of the uterus, the Müllerian ducts, occasionally persist in the cornual regions as vestigial structures. Possibly these two factors, the richness of the lymphatic vessels and the presence of fetal structures of diminished resistance, conduce to make this region additionally susceptible.

## Journal of the American Medical Association.

*March* 1, 1913.

1. The Methods of Appointing Hospital Internes. R. M. Pearce.
2. Nephroptosis and Nephropexy with Special Reference to the Basket-Handle Operation. A. Werelius.
3. An Unusual Form of Mineral Poisoning Affecting the Nervous System; Manganese? L. Casamajor.
4. A New Apparatus for Use in Blood-Cultures. W. Lintz.

5. A Method of Tonsillectomy by Means of the Alveolar Eminence of the Mandible. A New Guillotine and a Snare. G. Sluder.
6. Exercises in the Treatment of Ptosis of the Abdominal Organs. H. A. Oldenborg.
7. The Conservative Treatment of Salpingitis by Uterine and Tubal Injection I. S. Stone.
8. Some Practical Psychotherapy. H. A. Knox.
9. Epidermic Cerebrospinal Meningitis. A. H. Parmelee.
10. The Disappearance of Sugar After the Removal of Tumors in Diabetics. M. Manges.
11. Burnam's Test for Formaldehyde in the Urine. A Study of Two Hundred Cases. B. F. Jenness.
12. A New Apparatus for Filling Pipettes. R. D. Maddox.
13. An Argyll Robertson Pupil Becoming Normal After Mercury and Salvarsan. J. J. Zaun.

3. **Manganese Poisoning.**—L. Casamajor describes a syndrome observed by him among the workers in a separating mill connected with a large mine of which zinc is the principal product. Eighty-five different ores are found in this mine. One ore, a sesquioxide of zinc, iron, and manganese, comprises 54 per cent. of the ore body. Willemite, a silicious oxide of zinc, forms 21 per cent.; rodenite, silicate of manganese, forms 9 per cent., and the red oxide of zinc 4 per cent. The remaining 81 ores make up the other 21 per cent. in varying quantities. Lead and arsenic may be absolutely excluded as causative agents. Arsenic is absent and only very minute amounts of lead are present. In the separation of the crude ores the magnetic ones are removed by very powerful electromagnets in a dry state and further separation is done by a specific gravity method under water. The dust question is an important one, and, in spite of all the efforts to eliminate it and regulate the washing and changing of the clothes of the men, there is still a great deal in the air. Nine cases of poisoning have been observed and form the material for this paper. The symptoms are practically the same in all cases. They are principally marked festination with sometimes stiffness and pain of the legs and intention tremor. About half the patients have defective hearing not due to middle-ear disease. Asynergia is present in all the well-marked cases. There is never any rest tremor of the limbs. Sensibility is preserved as well as muscular power. The blood never shows the changes characteristic of lead poisoning. The speech in some of the patients is somewhat slurring. The urine and spinal fluid were negative in the cases in which these were examined, as was also the Wassermann reaction in five of the patients. The face has somewhat the mask-like character seen in paralysis agitans. There are no characteristic mental symptoms, though one patient showed defective intelligence, which has improved. One patient died of pneumonia and came to autopsy, and no characteristic gross changes were observed except large perivascular spaces in some of the basal ganglia of the brain. No patients have recovered. The author does not think that zinc can be held responsible, and believes that the cases resemble most those reported by Embden in workers in a manganese dioxide grinding-mill. He sums up his paper with the following conclusions: (1) This is a definite pathological condition, recognizable by a definite syptom-complex. (2) It is a pathological condition of the central nervous system affecting principally the mechanism of walking and equilibrium. It cannot be placed under the heading of any known central nervous system disease. It is of toxic origin and in greatest probability the toxic agent is manganese.

6. **Exercises in Treatment of Abdominal Ptosis.**—H. H. Oldenborg calls attention to contributions on the subject of abdominal ptosis and says that, while most writers have recommended gymnastic exercises, few have given directions as to how they should be performed. All agree that the abdominal walls are relaxed and that there are a more or less pronounced lumbar lordosis, round shoulders, flat-chestedness, and acuteness of the so-called epigastric angle attending ptosis of the abdominal organs. To correct these conditions it would consequently be necessary to strengthen the upper spine, develop the chest and increase lung capacity, strengthen the abdominal walls, and overcome the lordosis. There is not enough attention paid to predisposed children and to those that have inherited the weakness. Another class would be women whose abdominal walls have become relaxed from frequent pregnancies and those of both sexes who have acquired the condition on account of accident or the nature of their occupation. With children, good hygiene, plenty of outdoor air and regulated gymnastics during their school years would do much to lessen, or perhaps remove, the liability from inheritance or predisposition. After the physical development is complete the same means can be used, but the patients have less time and perseverance, and with these, according to the author's experience, one has the least success.

10. **Diabetes and the Removal of Tumors.**—M. Manges refers to the cases reported by Miller and Joslin of the disappearance of diabetes after extirpation of tumors of the uterus and reports two similar cases in which the glycosuria disappeared after prostatectomy. In one of the cases the disappearance was temporary, but in the other recovery seems to have been complete. It is well known that diabetes can be cured in exceptional cases without dietetic treatment, but this is most likely to occur when cerebral trauma or syphilis is the cause. Naunyn refers to cures of diabetes, usually in acute cases and largely in children, when organic disease cannot be diagnosed, but this result is not apt to occur when the disease is of long standing, and he warns one against considering as cures the not infrequent cases which become latent for varying periods. Von Noorden calls attention to the marked improvement that is sometimes seen on the occurrence of chronic granular nephritis and to the fact that he has found the blood richer in suprarenal extract in these cases. He conditionally attributes the improvement to this, the suprarenal extract stimulating the liver and pancreas and possibly causing hypertrophy of still intact islands of Langerhans. In the author's cases the diabetes long antedated prostatic symptoms and renal disease played no part. Unfortunately it was not noted whether any hyperglycemia existed, but this is not probable. The most plausible explanation, according to the author, is that the operation removes some nervous or toxic irritant which in some way, at present unknown, disturbs the carbohydrate metabolism. Of more importance than the theories of causation are the practical points involved. Surgeons have always dreaded operations in severe cases of diabetes, but these four cases would indicate that the prognosis from the operative point of view is far better than is supposed. One may even go further in hoping that the operation may have beneficial results in the diabetes itself if the excellent results in these four cases are observed by others. When diacetic acid or oxybutyric acid tests are negative there is no danger, no matter how intense the acetone reactions may be. If positive the prognosis should be more guarded. In such cases the physiological chemist can give definite information as regards impending coma by the determination of the relations of the ammonia nitrogen to the total nitrogen excretion in the urine. When this quotient is low and within normal limits the immediate prognosis is good and the danger from grave acidosis and coma is not sufficient to prevent any necessary operation.

## The Lancet.

*February 22, 1913.*

1. Hunter and Lister and the Museum of the Royal College of Surgeons of England. Sir Rickman J. Godlee.
2. Transmission to Monkeys of Virus Obtained from English Cases of Poliomyelitis. J. McIntosh and H. Turnbull.
3. Two Cases of Pancreatic Cyst. W. F. Cholmeley.
4. Two Cases of Pancreatic Cyst with Acute Symptoms. C. Frankau.
5. Large Renal Calculus Associated with Sarcoma of the Kidney. D. Drew.

6. A Case of Bence-Jones Proteinuria. J. Henderson.
7. Ptomaine-Producing Bacteria in the Human Intestinal Flora. D. M. Bertrand and A. Berthelot.
8. The Therapeutic Action of Splenic Extract and its Application in the Treatment of Tuberculosis. H. R. Harrower.

2. **Experimental Poliomyelitis.**—J. McIntosh and H. Turnbull record their results in the inoculation of monkeys with the material obtained from four cases of human poliomyelitis. They suggest that in sporodic cases the virus is feeble, and the occurrence of the disease is due to a hypersusceptibility of the individual attacked, while an epidemic results only when the virus has become exalted either by a series of passages through susceptible individuals or from some other cause unknown. It seems probable that the virus has been gradually exalted during the last three years in the neighborhood of the London Hospital, until a mild epidemic occurred in 1912. It will, therefore, be of great interest to note whether the pathogenicity increases in 1913.

7. **Ptomaine-Producing Intestinal Bacteria.**—D. M. Bertrand and A. Berthelot conclude that the *Bacillus aminophilus intestinalis* has well-marked saccharolytic and aminolytic properties. Varying the different nutrient substances with the exception of the aminoacid, the microorganism may remove the carboxyl group; when this aminoacid is the only substance containing nitrogen and carbon, it is able to show both properties at the same time. It can get its nitrogen and carbon from various organic molecules. As this microorganism splits off carbon dioxide very easily from aminoacids in various conditions of media, it seems possible then, to try to supplement the few ideas we have at present on the production of ptomaines in the intestinal tract and to study their acute and chronic action in the human organism. The authors succeeded in obtaining from human feces two other bacteria, one of them rather different from the *Bacillus aminophilus intestinalis* formerly studied, which microorganisms can produce imidazolethylamine by the same process. It was, indeed, very probable that this bacillus was not the only one in the intestinal flora able to produce such an action. These microorganisms have only been isolated from patients suffering from chronic autointoxication with some intercurrent intestinal disorder. The point particularly interesting is that it has always been impossible to get a growth from feces of people enjoying very good health, exactly as happened in the cases in which the authors isolated formerly "tyrosinolytic" bacteria. They conclude that by the very simple technique proposed more than a year ago they have been able to isolate from the human intestinal tract microorganisms capable of producing a very active base—namely, β-imidazolethylamine—from histidine; further, its isolation does not require more than three days, and frequently one can obtain a pure culture in less than forty-eight hours.

8. **Therapeutic Action of Splenic Extract.**—H. B. Harrower notes that the use of splenic extract has been advised in several diseases, and believes not only on general theoretical and experimental grounds, but from actual clinical experience, that it is useful in tuberculosis, and that its value is presumably due to certain splenic hormones, on which, in a degree, the following phenomena are dependent: (1) The defences of the blood: leucocytosis, phagocytosis, and, possibly, hemoglobin formation, and iron metabolism. (2) Tryptic digestion, thus directly increasing assimilation and nutrition, permitting an increased intake of food, and indirectly relieving the emunctories from the excessive work common in toxemia and suboxidation. (3) Intestinal digestion and the production of enterokinase. (4) The process of healing, both as regards the prevention of hemorrhage and the stimulation of rapid connective tissue production. (5) Antagonism to the tubercle bacillus by an influence on its culture medium, due to the production of a certain colloid substance (Bayle). (6) And finally, the function of the spleen itself.

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## British Medical Journal.

*February* 22, 1913.

1. Hunter and Lister, and the Museum of the Royal College of Surgeons of England. Sir Rickman J. Godlee.
2. Aches and Pains Connected with the Eye and Nose. C. E. Shaw.
3. Tumors of the Orbit; a Plea for Operation. Sir William Collins.
4. Hematoma of the Left Orbit Treated by Modified Krönlein's Operation. J. M. Cotterill, G. Mackay.
5. The Influence of Septic Infection in the Causation of Eye Disease. B. T. Lang.
6. Recurring Torsion of the Spermatic Cord: Operation. J. W. Dowden.
7. Six Cases of Hydrocele in Infants Treated by Operation. J. H. Nicoll.
8. Occlusion of the Inferior Vena Cava, as a Result of Internal Trauma (Dissecting Varix?). The Case of the late Dr. W. Rivers Pollock. S. G. Shattock.
9. Vaccine-therapy in Chronic Bronchitis. H. T. Gillett.
10. Supraclavicular Anesthetization of the Brachial Plexus. F. Neil and F. Crooks.

2. **Aches and Pains Connected with the Eye and Nose.**—C. E. Shaw notes that pain in the eye itself, increased by every movement and accompanied by redness and watering, is often due to a foreign body in the eye. Sharp neuralgic pain coming on every night for weeks or months and hindering sleep is not uncommon. It is not only in the eye, but around it and shoots over the top of the head and down the side of the nose, and may affect one or both eyes. Such pain points to chronic iritis and is important to recognize if vision is to be saved. A somewhat similar, but often more severe pain, coming on with marked signs of irritation—injection, photophobia, and lacrymation—and a dull muddy look in the iris, with contracted pupil and little or no loss of vision, indicates acute iritis, commonest in young adults. It is easily mistaken for simple catarrhal conjunctivitis, in which there may be similar signs of irritation, but the diagnosis is made by observing that the pain is worse in iritis, and is not confined to the eyeball, and also in iritis the pupil is sluggish or immovable. Further, in conjunctivitis there soon appears a sticky secretion, which is absent in iritis. The same acute pain and irritation, coming on suddenly in a person over fifty, with dilated pupil and great loss of vision, indicates acute glaucoma. In this case the pain is proportionate to the vascular disturbance, and may be agonizing and accompanied by vomiting. Gout in the eye is not common, but it is well to remember that it may occur, and be very alarming. It comes on suddenly at night with great pain in the eyeball, which is acutely congested and irritable; but the pupil is clear and moves freely, and vision is not affected. A very severe bursting pain, generally described as in the middle of the head, but sometimes shooting up to the ears, with marked constitutional symptoms, is caused by suppuration in the sphenoidal sinus. Constant or frequently recurring pains rather vaguely localized about the back of the nose and shooting up into one or both ears, especially if occurring in an elderly person, call for careful examination, as they may be due to malignant disease. Hypertrophy or cystic enlargement of the middle turbinated bones is a fairly frequent cause of headache in young adults. Chronic suppuration in the accessory sinuses is a frequent cause of headaches. The severe and continuous headache which is caused by tumors, gummata, etc., in the brain has no direct connection with the eyes. The commonest cause of headache is an error of refraction, especially astigmatism.

7. **Operative Treatment of Hydrocele in Infants.**—J. H. Nicoll states that hydrocele in infants may be safely and effectively operated upon in the dispensary. The method he employs is the following: A skin incision (1 to 1½ inches) is made just above the groin over the inguinal canal, and the spermatic cord is exposed just below the ring. The testicle and hydrocele are pushed

up into the wound, and the upper end of the hydrocele sac is exposed by a few snips of the scissors. The exposed sac is then emptied by trocar and cannula. The collapsed sac with the testicle are then pulled out of the wound, and the sac is dealt with either by tearing out its internal serous lining, by complete excision, or by bisection and suture of its halves back to back behind the testicle. Replacement of the testicle in the scrotum, and suture of the wound in the groin complete the operation.

9. **Vaccine Treatment.**—H. T. Gillett believes that when failure occurs in treatment by vaccines the question should be considered whether the failure is due to the patient's feeble powers of response, or to the method of preparation and dosage of the vaccine. With this in view one would pay particular attention to the following points: (1) Make sure what microorganism is the cause of the trouble and whether others are associated with it. (2) Use an autogenous vaccine in preference to an heterogenous one. (3) Make it up from fresh material; try different media for its preparation; grow the microorganism for not more than twenty-four hours if one can get sufficient growth in that time; avoid subculturing as far as possible; sterilize by heating to 60° C. for a quarter of an hour instead of one hour, or in some cases merely by the addition of 0.5 per cent. carbolic. (4) Give doses large enough to produce a reaction but avoid a prolonged negative phase. Though vaccine therapy may be said to be still in its infancy, it has already achieved a great deal, both in the prevention and cure of various bacterial diseases. And now that serum therapy can be combined with vaccine therapy by giving sensitized vaccines, it seems probable that in the future it may accomplish still more, especially in acute cases such as pneumonia and septicemia, and will eventually largely replace the treatment by drugs in those diseases which are caused by microorganisms.

10. **Supraclavicular Anesthetization of the Brachial Plexus.**—W. F. Neil and F. Crooks state that this form of anesthesia was first brought to notice by Hirschel in 1911, and later in the same year an article was written by Kulenkampff giving an account of 100 cases. Early in 1912 Borcher published the results of thirty-five cases; since then the method has been used extensively on the Continent. It is convenient, appears to be free from danger, and by its use severe operations on the arm can be performed painlessly and without shock. The technique of the injection is easy after a little experience. The brachial plexus is injected at a point which roughly corresponds to the middle of the clavicle. Here the plexus lies close under the skin, so that in many cases its position can be defined by pressure over the first rib. It emerges from under the scalenus anticus muscle, and lies in loose tissue which is easily infiltrated. The area into which the solution is injected is bounded internally by the subclavian artery, externally by the clavicle, and below by the first rib. Definite paresthesia in the arm or hand must be obtained before any solution is injected. The injection should consist of 20 c.c. of a 2 per cent. solution of novocain. If these points are not adhered to the anesthesia is likely to be light and patchy. To allow sufficient time for anesthesia to develop, usually five to fifteen minutes is sufficient, but as long as thirty minutes may be required. This form of nerve blocking is free from danger, but the following objections have been raised against it: (1) The risk of injuring the subclavian artery. This should be avoided, as the artery can be distinctly felt. (2) The pleura may be injured, and the solution injected into the pleural cavity. (3) The possibility of paralysis of the nerve trunks of the arm arising as a result of the injection. Care should be taken not to inject the solution into a vein. To prevent this, the plexus should be sought for with the needle alone, when, if a vein is punctured, the blood will flow freely from the needle. Puncture of a vien, the authors maintain, produces no ill effect beyond a slight swelling in the neck.

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## Berliner klinische Wochenschrift.

*February* 17, 1913.

**Gastric Juice Anaphylaxis.**—Manoiloff sums up the status of this subject up to the time of his own researches as follows: The gastric juice of cancer patients in which the localisation is not confined to the stomach (extra stomachal cancer) causes no toxic action when injected subdurally into guinea pigs—even is the amount of 1 c.c.; the gastric juice of patients with extra stomachal cancer when injected subdurally into animals previously treated with mammary cancer extract does not cause the phenomena of anaphylaxis; but the gastric juice of a patient with intrastomachal cancer when injected subdurally into healthy animals, even in doses of 0.05 c.c., causes a strong toxic action ending in death; and when this juice is injected subdurally into animals previously treated with extract of mammary cancer, even in the minimal amount of 0.2 c.c., distinct phenomena of anaphylaxis are produced. The author's work along the same line has shown him that gastric anaphylaxis in subjects with gastric cancer is a strictly specific phenomenon. In animals treated previously with cancer juice, the extract of gastric juice of patients with gastric cancer gives rise to anaphylactic phenomena, whereas if the gastric juice of patients with extrastomachal cancer is used, Manoiloff says no anaphylaxis results.

**Nature of Arthritis Deformans.**—This affection is widely distributed and has serious and fateful consequences, yet we know almost nothing of its nature, despite the fact that numerous specialists of medical practice are alike interested in its study—internists, surgeons, orthopedists, röntgenologists, etc. The cartilage degenerates up to complete loss; there is a usury of the cartilaginous surfaces, and the characteristic uneven contour of the joints are in evidence. An atrophic condition of the bone is accompanied by the formation of osteophytes which have a cartilaginous source. The atrophic bone changes are accompanied by sclerosis. What now is the final cause of all these changes? Histology furnishes the sole prospect of solution but so rapid and multiform are the changes that we are forced to seek for the very earliest alterations. None of the innumerable theories enunciated in the past are of any assistance in explaining the primary lesion, necrosis of cartilage; and all other phenomena may be regarded as reactionary. Much experimental work has shown the great likelihood of this possibility. Necroses of the joint cartilages may be produced in dogs by electrolysis; and the sequential phenomena are strictly parallel with those of arthritis deformans in man. Knowledge of the cause alone can give us hope of rational treatment. The causal factors may be multiple. Trauma and a mild degree of arthritis may alike produce the superficial ulceration; while the arthritis itself may be due to several causes—in one instance perhaps to circulatory disturbances causing hemorrhages, in another to the activity of bacterio toxins. Another factor is, however, absolutely needed as a predisponent and this is beginning senile involution. Weichselbaum goes so far as to state that arthritis deformans is merely an intensification of a physiologic process. To explain further the nature of the affection, especially in certain joints like the knees, a static element must be evoked. The amount of weight supported, the pressure and friction here may all contribute in the evolution of the affection and the best hope for treatment comes from a due regard to this element, which may also be a factor in the initial manifestations.

### Münchener medizinische Wochenschrift.

*February* 18, 1913.

**Radiant Energy and Deepseated Cancer.**—Aschoff Krönig, and Gauss have tested the power of radium and *x*-rays upon the tissues of deep-seated cancer inoperable in nature. The action of the rays was verified by histological investigations. A few cases are given in great detail, of which number we may select one. The woman had an inoperable cancer of the cervix. The first trial excision revealed a noncornifying squamous epithelioma. Another excision was made during the radiation. Some difference was noted between the two specimens, the most recent showing much fewer mitoses. From then until patient's death many trial excisions were examined. It was evident that no essential alteration of cancerous tissues had been effected. At the last the cells were very large, simulating plant cells. The protoplasm was quite transparent. Here and there pronounced pearl formation was in evidence. The vessels were greatly thickened, with infiltration of their walls with leucocytes. Autopsy showed that the growth had spread in an ordinary fashion. The cancer involved uterus and vagina with perforation of the rectum. The left parametrium was infiltrated and the process had invaded the left tuber ischii. The growth had involved both ureters and had caused bilateral hydronephrosis. The pelvic veins were the seat of extensive thrombosis. Recent emboli were found in the lower lobe of the lung to the right, with secondary gangrene. Since the cases tested were condemned at the start, and since the autopsy finds showed no serious changes from the normal, the research is evidently not made in the interest of a prospective remedy but simply to secure and place on record certain data in reference to radiophysiology and radiopathology. The article will be continued.

**Appearance of Virulent Tubercle Bacilli in the Blood After the Diagnostic Tuberculin Injection.**—Bacmeister speaks of the extensive recent literature of this subject, due to the publication of the methods of Stäubli and Schnitter in 1908 and 1909 respectively. These processes enable the investigator to demonstrate acid-fast bacilli in smears from a few cubic centimeters of blood. This result, however, leads to surprising conclusions, quite out of harmony with what we knew before of the occurrence within the body of this bacillus. Not only may consumptives in the initial stages, but even seemingly healthy subjects have their blood swarming with the germs. But the latter give quite negative results in animal experiment, in contrast to those bacilli which accompany actual tuberculosis. The conclusion must naturally be this, that the avirulent germ, while seemingly identical with Koch's bacillus, is nevertheless distinct as to pathogenicity. We have, however, learned incidentally that among all these finds in the blood—and by intensive methods they are practically universally present—there are more cases of genuine tubercle bacillemia than had been supposed. Quite recently by persistent work Liebermeister found that when a tuberculous focus is actually present in the body, the genuine bacillus not infrequently is present in the circulating blood, as shown by its virulence to animals. In other words, the harmless bacilli may become activated in the presence of a focus. The author, however, often found avirulent bacilli in the blood when actual pulmonary lesions were present. It then occurred to the author to give these cases a diagnostic tuberculin injection, the pulmonary tuberculosis being of mild type. This was done in fifteen cases, and at the height of the reaction blood was taken and injected into the peritoneal cavity of rabbits. But of thirty cases (each patient tested twice) but four positive animal results were obtained. The bugbear that tuberculin necessarily expels virulent bacilli into the circulating blood should not therefore continue to prevail. The local focus may be unduly activated and may be made worse, but the fear of acute infectious bacillemia which dates from the discovery of the tuberculin reaction, and which may tend to reappear with the recent demonstrations by Staubli's method, is apparently unfounded. The present safeguards should be more than sufficient to prevent such catastrophes.

### Deutsche medizinische Wochenschrift.

*February* 13, 1913.

**Abderhalden's Dialysis Procedure in the Explanation of Psychoses.**—This procedure, as Fauser states, which is intended for the demonstration of certain albumins in the blood which do not belong therein, notably the placental albumin of gravidæ, has been applied to certain psychoses believed to be due to some defective or uncorrected presence of organic matter from the ductless glands. The author has already published two papers on the subject and hence does not stop to describe his technique. His conclusions are as follows: In most cases of dementia præcox, and especially in the hebephrenic form, there is at fault a disturbance of the genital glands, in which also the thyroid sometimes participates. To some extent these disturbances are inborn, although the thyroid factor when present is perhaps acquired. The metabolic disturbances in these glands are not corrected outright with hormone production but lead to the formation of a protein mattér which is foreign to the blood, and hence requires the antagonism of the protective enzymes of that fluid, the resulting cleavage substances being responsible for the reaction. The same products, it is assumed, are able to act upon the cortex cerebri and induce perverted psychic functions. In this way other metabolic products are produced, so that a vicious circle results. Thus far the author has found no cleavage product of the ovary in men with dementia præcox, nor of the testicle in women. Again, as a fact of great significance, the genital glands of the elderly of both sexes are able to form these heterologous substances as well as those of young or middle-aged subjects. Aside from dementia præcox the subject of dementia paralytica comes into play in this connection. No doubt, in this affection there appear in the blood, as a direct result of the action of the syphilis virus, certain substances of whatever source which are comparable throughout with the toxic cleavage products of dementia præcox. The author is much strengthened in his belief as to the causes of dementia præcox already given, because he can find no evidence of a similar origin for manic-depressive insanity. In other words, dementia præcox and paralytic dementia are somehow related in being toxigenic, while other forms have not shown that origin.

**Development of the Adrenals.**—Landau sums up his study of this subject as follows: Human adrenals, in contrast with those of quadruped, showed a special richness in convolutions as well as a more marked development of the cortex about the great medullary veins. The human suprarenal organ, in contrast, shows a more marked growth in the first half of pregnancy, a deeper furrowing in the second half and a degeneration of the internal cortical portion after delivery. As these characteristics are not seen in lower animals, the condition represents a phylogenetic advance, such as is seen in one other organ only, the brain. Hence we can readily understand why in certain cerebral malformations (anencephali) we find hypoplasia of the adrenals. The richness in convolutions in the human adrenals shows further a marked analogy with the human cortex cerebri. This is seen not only on the exterior but also the internal surface of the adrenal cortex. We also behold here a certain definite relationship between the adrenal cortex and the sympathetic nervous system.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS

BY THE INSURANCE EDITOR.

### PRINCIPLES OF LIFE INSURANCE.

*The Interest Rate.*—The only sources of income for the payments due on policies by life insurance companies are the premiums and the interest earned on the premiums. It follows that in computing the premium, a certain rate of interest must be assumed and that this rate must be one which the safest possible securities may be depended upon to earn. The precise rate of interest to be earned cannot be determined in advance and as life insurance contracts usually run over a long period of years, the rate should not exceed three and one-half per cent. in the United States. Invested funds will surely earn a higher rate for many years to come, however, thus very properly assuring a margin of safety without which a life insurance company would be in a very poor position to promote a feeling of security among its policyholders. By assuming a higher rate and failing to heed the demand for safety, considerable doubt would exist as to whether all obligations could be carried out to the very end. Moreover, the gains and savings from the excess of interest earned over and above the three and one-half per cent. are applicable to dividends and will be returned to the policyholders in this form, especially in mutual and mixed companies.

Interest is therefore an important factor in the practice of life insurance and elaborate tables have been compiled to show at a glance, not merely what every dollar will earn at a given rate of interest in a certain number of years, but also how much must be invested at the present time so that in a certain number of years at a given rate of interest it will increase to a stated sum. Limited space forbids the insertion of these voluminous tables.

*Combination of Mortality and Interest Tables.*—The course of the hypothetical company referred to in the previous article may now be resumed. It was learned from the mortality table that of the 81,822 policyholders, composing the company and entering at the age of thirty-five, 812 members will die during the tenth year and that $812,000 will be required in that year to pay these death claims. On consulting the interest table, it is seen that the present worth of $812,000 is $575,626.80, that being the sum which will amount to $812,000 at three and one-half per cent. interest in ten years. Therefore, with $575,626.80 on hand in the beginning of the company, each and every one of the death claims in this group can be paid by the company. In the same way it is apparent from the mortality table that in this same company there will be 1,143 deaths in the twentieth year at the age of fifty-four, calling for the payment of $1,143,000, and the interest table shows that the present worth of this sum is $574,471.80, this being the amount which invested at three and a half per cent. for twenty years will create a fund just sufficient for the payment of the claims coming due in this group of policyholders. Another group of policyholders is made up of the three members who will live out the sixty-one years and attain the age of ninety-five, their deaths during that year calling for the payment of $3,000; the sum of $367.93 on hand in the beginning and invested for sixty-one years at the rate of three and a half per cent. will just pay in full the claims of the last three members of the company.

In a like manner, it can be computed from the mortality tables what the losses will be for each and every year during the course of the company for the sixty-one years, and the interest tables will determine the present worth of the amount which will be needed in each and every year. By working out this problem it will be found that the present worth of the $81,822,000, required as a total insurance fund for the payment of each and every claim is $30,319,142.10. With this amount on hand at the outset, the fund will be sufficient to meet every demand to the very end without the necessity of the addition of new members. Dividing $30,319,142.10 by 81,822, the original members of the company, gives $370.55. If each of these members, then, pays down $370.55 at the beginning of the first year of the company, there will be a total fund on hand just sufficient to fulfill all the contracts. This $370.55 is termed the *net single premium* and it is the net amount, without provision for expenses, which a man at age thirty-five should pay for a fully paid-up policy of $1,000. As most men find it inconvenient, however, to pay for their life insurance in a single sum, it is necessary to divide the net single premium into equivalent yearly payments to be made by the insured during life. The description of the mathematical process involved in this computation takes several other questions into consideration, and these will be discussed in the next article.

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**Selection and Training of Medical Examiner.**—Dr. Edmund Babler says that in selecting examiners most companies simply get a list from some friendly company and then get the standing of the physician from a commercial report company. This is quite unsatisfactory and Dr. Babler has had a special inspector appointed to go about and get personal evidence as to the standing of the candidates. Usually two, or even three, examiners are appointed for one locality, and the agents are always urging the appointment of others. Little is done in training the examiner, for the usual book of instructions is inefficient and monthly instructions are not usually attended to by the examiner.

As a remedy for this Dr. Babler thought that a list of accredited examiners should be prepared for the American Life Convention by a special committee empowered to act by the members. Each company could then be supplied with a list of accredited men, and of men that have been "discontinued" or are undesirable.

The plan is ambitious and is altogether too expensive to be carried out by a single company but its advantages appear to the writer to be so great that an association of companies should find it profitable to adopt the scheme.

In the discussion, Dr. Spratling said that his company tried inspectors but has found that a medical man will not do the work for the salary offered while a layman somehow could never judge a doctor. The only way to get good examiners is to try out doctors and check up their work. Nothing but experience is good enough for selecting proper examiners. Dr. Spratling said that the agents have a voice in the appointment of examiners and he has come around to the idea that this is not a bad thing. —Proceedings of the Second Annual Meeting of the Medical Section of the American Life Convention.

# Book Reviews.

THE HISTORY OF THE PRISON PSYCHOSES. By PAUL NITSCHE of Dresden, and Karl Willmanns of Heidelberg. Authorized translation by FRANCIS M. BARNES, Jr., M.D., Senior Assistant Physician, Government Hospital for the Insane and Instructor in Neurology and Psychiatry in the George Washington University, Washington, D. C.; and BERNARD GLUECK, M.D., Senior Assistant Physician, Government Hospital for the Insane, Washington, D. C. With an Introduction by WILLIAM A. WHITE, M.D. Price $1.25. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

"THE study of the insane criminal," says Dr. White in his Introduction to this interesting little volume, "is one of the best approaches to an understanding of him, as a study of the psychology of mental disease is one of the best methods of approach to the understanding of the normal individual." In line with such a study is this historical review of the prison psychoses and their development, from the time of the pioneer publication of Delbrück, physician to the penal institution at Halle, in 1853, to the present day. The work is confined to the German literature on the subject. There are two general types of criminal psychoses. One comprises cases of mental disorder in criminals, which are termed "accidental" in occurrence, which present no especially new problems and which are easily classified in classifications utilized for the non-criminal insane. The other general type includes certain psychoses which seem to be found only among the confined criminal insane. Individuals developing this latter type exhibit a peculiar mental make-up and many of them have a peculiar symptom complex which makes it very difficult, or practically impossible of classification with psychoses in non-criminals. This complex is of psychogenetic origin and reactive to certain specific unfavorable environmental conditions. It is to this latter class that the term "prison psychosis" peculiarly applies; and, as stated in the translator's preface, "from the practical side, the term certainly is of value in that it emphasizes the etiologic potential of imprisonment as a provocative agent in the causation of outspoken psychotic states which properly demand hospital care." More intelligent methods of dealing with the criminal and with all the problems of criminology are very much needed. If it is true that the average criminal is of a low type of intelligence, often lacking in attention, imagination, and ability even to use what little intellect he has, can we best help in the problem by punishment alone? We recommend this work of Nitsche and Willmanns to help us answer the question. The first part of the book embraces the works of the old school. The second considers the question of prison psychoses from the standpoint of Kraepelin's conception of dementia precox. The third and last part is a review of the subject from the standpoint of the Magnan-Möbius ideas on degeneracy.

FOR AND AGAINST EXPERIMENTS ON ANIMALS. Evidence Before the Royal Commission on Vivisection. By STEPHEN PAGET, F.R.C.S., Hon. Secretary Research Defence Society, With an Introduction by THE RIGHT HON. THE EARL OF CROMER, O.M., G.C.M.G., G.C.B. Price $1.50. New York: Paul B. Hoeber, 1912.

THIS publication is both timely and useful. It gives a clear account of the results obtained during the past thirty years by the help of experiments on animals; and in many instances the account is given in the very words of the men who did the work. Not the least interesting part of the book is the Anti-vivisection evidence; Mr. Coleridge's own admission that he himself cannot be depended on to speak the truth (unless it happens to suit his own convenience) is something to be remembered. The volume makes interesting and instructive reading; physicians and surgeons should have the book, and lend it to patients, or leave it on the table of the waiting room.

SELECTED PAPERS ON HYSTERIA AND OTHER PSYCHONEUROSES. By SIGMUND FREUD, Vienna. (Second, Enlarged Edition.) Authorized Translation by A. A. BRILL, M.D., Ph.B., Chief of Nervous Department, Bronx Hospital and Dispensary; Clinical Assistant, Department of Neurology and Psychiatry, Columbia University. $2.50. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

THE first edition of this work appeared only three years ago at a time when there was scarcely anything available of Freud's writings translated into English. Those who had tried to read Freud in the original immediately appreciated the convenience and saving of time of the translation and the first edition was soon exhausted. It is needless to review the book again in the MEDICAL RECORD except to say that the "Papers" are taken, for the most part, from the *Studien über Hysterie*," published by Breuer and Freud in 1895, and from Freud's "Sammlung kleiner Schriften zur Neurosenlehre," Vol. 1, 1906, and Vol. 2, 1909. The present edition shows some revision, and it has been enlarged by the addition of a chapter "On Wild Psychoanalysis" and a chapter on "The Future Chances of Psychoanalytic Therapy." The first of these added chapters was apparently needed, to restrain the overzealous blind partisan. The second is calculated to make new converts to psychoanalytic therapy by the author's fine philosophic treatment of the general problems of the subject and the insight he gives us into newer fields of investigation. Let us not condemn the Freudian principles until we at least have read them and tried to understand them. In order to do this more of his writings than those comprised in this book will have to be carefully studied and put into practice; but the Selected Papers on Hysteria are excellent to begin on.

THERAPEUTICS, MATERIA MEDICA, AND PHARMACY, Including the Special Therapeutics of Diseases and Symptoms, the Physiological and Therapeutic Actions of Drugs, the Modern Materia Medica, Official and Practical Pharmacy, Minute Directions for Prescription Writing, also the Antidotal and Antagonistic Treatment of Poisoning. By SAMUEL O. L. POTTER, A.M., M.D., M.R.C.P. Lond. Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco; Author of the "Quiz-compends of Anatomy and Materia Medica," "An Index of Comparative Therapeutics," several articles in Foster's "Practical Therapeutics," and "Speech and Its Defects"; late Major and Surgeon of Volunteers, U. S. Army. Twelfth Edition, revised and enlarged. Price $5.00 net. Philadelphia: P. Blakiston's Son & Co., 1913.

THIS is probably one of the best known and most widely used works on Therapeutics and Materia Medica in the English language; and since it is now in its twelfth edition it certainly needs neither commendation nor introduction. The author keeps his book well up to date, and at the same time shows no little skill in preventing the volume from reaching unwieldy proportions. The present edition is only eighteen pages larger than before, and contains new articles on: Acidum Nitrosum, Alypin, Arteriosclerosis, Arsenobenzol, Aspirin, Chromic Sulphate, Digitalone and other preparations of Digitalis, Enesol, Eugenol-acetamide, Fibrolysin, Guaiacose, Hydrargyrum Succinimide, Lactobacilline, Laxaphen, Edematous Laryngitis, Libradol, Medinal, Novaspirin, Novocaine, Pellagra, Pertussin, Phenolphthalein, Sodium Nucleinate, Trypsogen, Uriform, Valyl, and Veracolate. The section on Serums and Vaccines has been rewritten and enlarged, and some obsolete material has been omitted. We know of no similar volume on Therapeutics and Materia Medica containing anything like the same amount of valuable information.

PLATISCHE OPERATIONEN (Plastic operations). By Prof. Ph. BOCKENHEIMER. Vol. I. With 258 illustrations, several in color. Price 9 Marks. Würzburg: Curt Kabitsch, 1912.

THIS work, which is to be completed in two volumes, is intended to present the progress and improvements which have been made in the domain of plastic surgery in the last few decades. The first volume, which has already appeared, contains a general section devoted to the principles developed in both the old and new methods and a special part dealing with the plastic operations which are applicable to the face. The author has freely referred to the clinical material observed in von Bergmann's service and also in private practice, together with numerous references to textbooks and journal articles. In the second volume, which has not yet appeared, the intention is to discuss the plastic operations employed in the remaining portions of the body. The perusal of the book makes it quite evident that its author has expended a great deal of time and thought in collecting from scattered sources the facts which may be included in the development of this branch of surgery. The writer discusses the indications and technique of the individual operations, but has very little to say regarding the subsequent results. Of particular interest is the section devoted to the correction of harelip and cleft palate, in which the author gives due recognition to the excellent work done by Brophie of Chicago, although he is not ready to admit that the method is more advantageous than others which have been proposed. The book is very well printed and satisfactorily illustrated with a large number of cuts and also several colored plates taken from the same author's well known atlas of clinical surgical pictures.

Gynäkologisches vademekum für Studierende und Ärzte. (Manual of Gynecology for Students and Practitioners.) By Prof. A. Dührssen, Berlin. With 138 illustrations and 11 plates. Tenth edition, enlarged and revised. Berlin: 1913, S. Karger.

The ten editions of this little book have succeeded each other very rapidly and the final one contains a number of additions which bring it up to date. In the ninth edition of this work considerable new material was already included, among which were chapters on special methods of treatment before and after major operations, laboratory examination methods, and legal responsibility of the operator. Advances in anesthetic methods were likewise referred to. The question of early rising after operation is given very little attention by the author because his adherence to vaginal methods obviates in his mind this difficulty. The book in its 300 closely printed pages contains a vast wealth of material which, however, seems somewhat confusing to a beginner, as in many instances a method is described in such a brief manner that it can be of little value. An American reader will also be more or less astounded by the frequent references in the book to the proprietary preparations, which, aside from the ethics of the case, would not under ordinary circumstances be accessible to other than German readers.

Ophthalmic Surgery. A Handbook of the Surgical Operations on the Eyeball and Its Appendages as Practised at the Clinic of Hofrat Professor Fuchs by Dr. Josef Meller, Privatdocent and First Assistant K.K.II., University Eye Clinic, Vienna. Edited by Dr. William M. Sweet, Clinical Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic; Attending Surgeon, Wills' Eye Hospital, Philadelphia. With 173 Original Illustrations. Second Edition, thoroughly revised. Price, $3.50 net. Philadelphia: P. Blakiston's Son Company, 1912.

The second edition of Meller's work is larger by about twenty pages than the first. "The text of the volume has been entirely rewritten and the subject-matter rearranged." New operations and new illustrations have been added. The work is not a complete treatise on the surgery of the eye, but is designed to describe the most important operations that are performed at the clinic of Professor Fuchs in Vienna, particularly those which have been adopted after large experience. The surgery of the lacrymal apparatus is given *in extenso,* particularly in regard to the excision of the sac, the operation for which, as advocated by Meller, is probably the best now practised. The directions for the extraction of cataract will not appeal to the up-to-date American ophthalmologist, as the position of the operator (sitting at the right side of the patient) does not correspond with the custom practised here (standing or sitting at the head of the patient, and some of the other steps advised are not in accordance with the most advanced views. All operations are fully and well illustrated and described. Because of the special features, if for no other reason, Meller's work should be consulted by all ophthalmic surgeons.

The Prognosis and Treatment of Diseases of the Heart. By R. O. Moon, M.A., M.O. Oxon., F.R.C.P., Physician to the National Hospital for Diseases of the Heart; Assistant Physician to the Royal Waterloo Hospital. Price, $1.25. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1912.

This book is of an eminently practical nature, dealing almost exclusively, as proclaimed in its title, with the subjects of prognosis and treatment, although here and there a necessary word is said regarding etiology and diagnosis. Owing to this limitation of discussion it has been possible to compress a great deal of material of value to the young practitioner in a little over 110 pages of text. Dr. Moon is, of course, of the modern school of cardiologists who have learned to look upon certain diseases of the heart with less dread than formerly, or rather have learned to discriminate more accurately between the heart disease that kills and that which merely sounds a note of warning or at most slightly cripples. His therapeutic teachings are sound, and the general tenor of his prognostic notes is hopeful. The book is well worth reading and may give even the expert some new ideas or helpful hints.

Der Haftapparat der Weiblichen Genitalien. Eine Anatomische Studie. Von Dr. Eduard Martin, Privatdozent und Assistant an der Univfrauenklinik zu Berlin. II. Teil. Der prolaps. Mit 24 Tafeln. Berlin: 1912. Verlag von S. Karger.

The anatomical and clinical investigations which were described in the first portion of this work show that there may be distinguished in the female pelvis, two sets of structures, one consisting of fascial thickenings in the connective tissue, which are intended as a means of attachment, and another set which forms the pelvic floor and are intended for support. It was further shown that it is only the fascia or fascial thickenings in both sets of structures, and not the muscles which serve a physiological purpose. Along these lines the author has described a series of preparations of the pelvic contents and divided the various forms of genital prolapse on a topographical basis. According to this scheme the primary injuries to the structures that serve for attachment result in prolapse of the uterine bladder, hernia of the vesicouterine fold, prolapse and anterior displacement of the uterus, and hernia of the rectouterine fold. Primary damage to the suspensory apparatus results in a prolapse of the posterior vaginal wall, elongation of the cervix and secondarily to the deformities already noted. The final form of displacement is that brought about by a rectocele. Martin bases his description of these lesions on a series of anatomical preparations and clinical observations, which are illustrated by drawings and plates, and in each instance the appropriate therapeutic procedure is outlined. The work represents in a very graphic manner the entire domain of the reparative surgery of this section of the body, based on the advances in literature and also on the author's extensive personal experience in gynecological surgery.

Die Behandlung der Knochen- und Gelenktuberkulose mit orthopädischen Massnahmen. Von Dr. F. Oehlecker, chirurgischen Sekundärarzte. Sonderabdruck aus den Tuberkulose-Fortbildungskursen des Allgemeinen Krankenhauses Hamburg-Eppendorf. Band I. Price, 3 marks. Würzburg: Verlag von Curt Kabitzsch, 1913.

This little book of 90 pages, dealing as it does with the pathology, symptomatology, differential diagnosis, etc., of bone and joint tuberculosis, is somewhat broader in its scope than its title implies. Its author shows his familiarity with the best German authorities, and illuminates his text with illustrations of diseased joints, plaster-of-Paris dressings and a few braces. While the book might appear somewhat old-fashioned in its viewpoint, it is fully up to the standard set by many of its author's compatriots, and will doubtless be helpful to his fellow practitioners in their treatment of this most interesting class of diseases. In contradistinction to Stiles of Edinburgh, Oehlecker found that the bovine type of tubercle bacillus played a comparatively insignificant rôle as a causative agent in bone and joint tuberculosis. Out of 34 cases (28 children and 8 adults) only one, in a child, was due to the bovine type.

Hypnosis and Suggestion. Their Nature, Action, Importance, and Position Amongst Therapeutic Agents. By W. Hilger, M.D. (of Magdeburg). Translated by R. W. Felkin, M.D., F.R.S.E. With an Introduction by Dr. Van Renterghem (Amsterdam). Translated by A. Newbold. Price, $2.50 net. New York: Rebman Company, 1912.

This work has been translated into Dutch as well as English. The author is a general practitioner. He was a pupil of Torel and Vogt in 1895, and has utilized hypnosis and suggestive treatment more especially since that time. The book presents in an entertaining manner the essentials of the psychical curative methods and their application, as found in the author's own experience. The introduction by Dr. Van Renterghem contains a brief survey of the history of psychotherapy since 1843. At the present time, hypnosis has been largely superseded by other methods of psychotherapy. The author probably had that idea in mind when he produced this book. As a general practitioner, himself, he writes without apparent prejudice and does not omit to note the importance of instructive and explanatory treatment and re-education. But his main effort is apparently to spread a better understanding of hypnosis and suggestion, so that they may be more generally employed. There are four parts or chapters to the book. The first is devoted to a discussion of the nature and methods of hypnosis and suggestion. The second deals with suggestion and will. The third is on the influence of the will's action, suggestion, and various psychological factors in the disturbance of the area of sensation. And the last part describes the various disturbances of reflex activity and their treatment. A number of illustrative cases distributed throughout the book add to its practical interest. This book is one of the most conservative of the numerous works on the same subject. It may be of greater value to the general practitioner and to the layman than to the specialist, but it serves a good purpose and deserves to be read.

## MEDICAL LIBRARIES.*

### IV.

### 1913.

ALBANY.—New York State Medical Library. Albany, New York, U. S. A. Miss Ada Bunnell. 18,000.

AMSTERDAM.—Library of the Netherlands Medical Society. Singel 21, in the University Library. Dr. C. E. Daniëls. 25,665.

ANTWERP.—Library of the Antwerp Medical Society. Royal Atheneum, 40 rue van Straalen, Antwerp, Belgium. Dr. Edward d'Haenens. 3,150 (1911).

ATLANTA.—Library of the Atlanta Medical Association. Atlanta, Georgia, U. S. A. Dr. H. F. Harris. 2,000 (1911).

BALTIMORE.—Library of the College of Physicians and Surgeons. Baltimore, Maryland, U. S. A. Miss Ethel I. Disney. 1,275 (1911).

Johns Hopkins Hospital Library. North Broadway, Baltimore, Md., U. S. A. Miss Minnie W. Blogg. 12,000.

The Johns Hopkins Medical School Library. Baltimore, Md., U. S. A. Dr. M. L. Raney. 11,600.

Library of the Medical and Chirurgical Faculty of Maryland. 1211 Cathedral street, Baltimore, Md., U. S. A. Miss Marcia C. Noyes. 20,000.

Library of the University of Maryland, Faculty of Physic. Greene and Lombard streets, Baltimore, Md., U. S. A. Dr. Eugene Fauntleroy Cordell. 11,000.

BEIRUT.—Medical Library of the Syrian Protestant College. Beirût, Syria. H. Porter. 1,800.

BELFAST.—Library of the Ulster Medical Society. College Square, N. Belfast, Ireland. Dr. Wm. L. Storey. 2,000.

BERLIN.—Library of the Berlin Medical Society. Ziegelstrasse 10-11 (Langenbeck Haus), Berlin, N., 24, Germany. Dr. Hans Kohn. 40,000.

Library of the German Surgical Society. Ziegelstrasse 10-11, (Langenbeck Haus), Berlin, N., 24, Germany. Dr. Herman Fischer. 40,000.

Library of the Kaiser Wilhelm Academy. Scharnhorststrasse, 35, Berlin, N. W., Germany. Dr. A. Hiller. 67,000 (1911).

Library of the Imperial Public Health Department. 23 Klopstockstrasse, Berlin, N. W., Germany. Dr. Wurzburg. 70,000.

Library of the Society of Internal Medicine. Ziegelstrasse 10-11, Berlin, N., 24, Berlin, Germany. Dr. Max Meyer. 10,000.

BIRMINGHAM.—Library of the Birmingham Medical Institute. Edmund street, Birmingham, England. Mr. Thomas George Johnson. 14,928.

BOSTON.—Boston Medical Library. 8 Fenway, Boston, Massachusetts, U. S. A. Dr. John W. Farlow. 74,328.

Boston City Hospital Medical Library. 818 Harrison avenue, Boston, Mass., U. S. A. Dr. John H. McCollom. 3,000.

Library of the Harvard Medical School. Longwood avenue, Boston, Mass., U. S. A. Sarah Ripley Bartlett. 19,000.

Treadwell Library, Massachusetts General Hospital. Boston, Mass., U. S. A. Mrs. Grace W. Myers. 7,833.

Library of Tufts College Medical School. 416 Huntington avenue, Boston, Mass., U. S. A. Dr. Robert W. Hastings. 1,800 (1911).

Boston University Medical Library. 80 East Concord street, Boston, Mass., U. S. A. Dr. Anna T. Lovering. 5,347.

BRIGHTON.—Library of the Brighton and Sussex Medico-Chirurgical Society. Brighthelmstone Dispensary, Queen's Road, Brighton, England. Miss Evelyn Brill. 4,000.

BRISTOL.—Bristol Medical Library. University of Bristol, Bristol, England. Mr. C. King Rudge. 21,000.

BROOKLYN.—Library of the Medical Society of the County of Kings. 1313 Bedford Avenue, Brooklyn, New York, U. S. A. Mr. Albert T. Huntington. 65,000.

BRUNSWICK.—Library of the Medical School of Maine. Brunswick, Maine, U. S. A. Mr. George T. Little. 5,000.

BRUSSELS.—Library of the Royal Academy of Medicine of Belgium. Palais des Académies, Rue Ducale, Brussels, Belgium. Mr. Henri Beckers. 100,000.

*The name of the library is followed by its mail address, the name of the librarian, and the number of bound volumes. With the exceptions indicated this list is made up from recent returns up to January 15, 1913. Historical and economic details, degrees, and official titles are omitted. Copies may be obtained from the librarian of the New York Academy of Medicine.

BUDAPEST.—Library of the Royal Medical Society of Budapest. VIII Szentkiraly-utcza 21, Budapest, Hungary. Dr. Rudolphe Temesváry. 18,661.

BUFFALO.—University of Buffalo Medical Library. 24 High street, Buffalo, New York, U. S. A. Dr. Irving P. Lyon. 9,323.

BURLINGTON.—Medical Library of the University of Vermont, Burlington, Vermont, U. S. A. Dr. T. S. Brown. 2,000.

CALCUTTA.—Library of the Medical College of Bengal. Bowbazar, Calcutta, India. Ram Chandra Mookerjee. 50,000.

CHELTENHAM.—Cheltenham Medical Library. Clarence street, Cheltenham, England. Dr. J. Rupert Collins. 2,390.

CHICAGO.—Department of the Medical Sciences of The John Crerer Library, 87 Wabash avenue, Chicago, Illinois, U. S. A. Dr. A. C. Girard. 53,000 (1911).

Library of Northwestern University Medical School. 2431 Dearborn street, Chicago, Ill., U. S. A. Dr. Walter H. Buhlig. 6,518.

Quine Library, College of Physicians and Surgeons, Congress and Honore streets, Chicago, Ill., U. S. A. Miss Metta M. Loomis. 13,896.

Rush Medical College Library. Chicago, Ill., U. S. A. Miss C. A. MacAuliff. 19,522.

CINCINNATI.—Library of the Academy of Medicine of Cincinnati. 25 East Eighth street, Cincinnati, Ohio, U. S. A. Dr. Arch I. Carson. 3,000 (1911).

Cincinnati Hospital Library. Cincinnati, O., U. S. A. Dr. E. W. Mitchell. 18,958.

CLEVELAND.—Library of the Medical Library Association. 2318 Prospect avenue, Cleveland, O., U. S. A. Mrs. S. M. Harding. 17,000 (1911).

COLORADO SPRINGS.—El Paso County Medical Society Library. Coburn Library, Colorado Springs, Colorado, U. S. A. Mr. M. D. Ormes. 3,000.

COPENHAGEN.—Library of the Copenhagen Medical Society. Vester Boúlevard, 6, Copenhagen, Denmark. Dr. Jocrgen Moeller. 8,193.

Library of the General Hospital. Kommunehospitalet, Copenhagen, Denmark. Dr. Joergen Moeller. 4,830.

DANBURY.—Wile Medical Library. Danbury Hospital, Danbury, Connecticut, U. S. A. Mr. M. L. Rogers. 926.

DENVER.—Library of the Medical Society of the City and County of Denver. 266 Metropolitan Building, Denver, Colorado, U. S. A. Dr. A. J. Markley. 7,325.

DUBLIN.—Library of the Royal College of Physicians of Ireland. Kildare street, Dublin, Ireland. Mr. Robert Phelps. 15,500.

Library of the Royal College of Surgeons in Ireland. Stephens Green, Dublin, Ireland. Alfred Miller. 33,000.

EDINBURGH.—Library of the Royal Medical Society. Melbourne place, Edinburgh, Scotland. Mr. A. P. Ormiston. 30,000.

Library of the Royal College of Physicians of Edinburgh. 9 Queen street, Edinburgh, Scotland. Thomas Harkness Graham. 100,000.

Library of the Royal College of Surgeons of Edinburgh. Nicolson street, Edinburgh, Scotland. Mr. Harold J. Stiles. 16,000.

FALL RIVER.—Fall River Medical Library. 109 South Main street, Fall River, Massachusetts, U. S. A. Dr. George L. Richards. 1,200.

FLORENCE.—Medical Library of the Scientific School. 33 Alfani street, Florence, Italy. Luigi Nobile-Loiacono. 38,000 (1911).

FRANKFORT.—Senckenberg Library. Victoria Allee 9, Frankfurt á Main, Germany. Dr. Wahl. 87,256.

GALVESTON.—Library of the Medical Department of the University of Texas. Galveston, Texas, U. S. A. Miss Ethel L. Hibbs. 7,980.

GLASGOW.—Library of the Royal Faculty of Physicians and Surgeons. Faculty Hall, 242 St. Vincent street, Glasgow, Scotland. Dr. Alexander Duncan. 51,000. (1911.)

HARTFORD.—Library of the Hartford Medical Society. Hunt Memorial Building, 38 Prospect street, Hartford, Conn., U. S. A. Dr. Walter R. Steiner. 5,500.

HASTINGS.—Library of the East Sussex Medico-Chirurgical Society. 16 Silchester road, Hastings, England. Dr. Rupert Stanley. 3,120 (1911).

HAVANA.—Library of the School of Medicine of the National University. General Wood Laboratories, Havana, Cuba. Dr. José A. Valdés Anciano. 4,925.

JACKSONVILLE.—Library of the Morgan County Medical Society. Jacksonville, Illinois, U. S. A. (Public Library.) Miss Ella B. Lawrence. 2,000.

JERSEY.—Library of the Jersey Medical Society. St. Hilier, Jersey, Channel Islands. Dr. Herbert C. Major. 500.

KINGSTON.—Queen's Medical Library. Kingston, Ontario, Canada. Miss Jessie Gordon. 2,000.

LEEDS.—Library of the Leeds and West Riding Medico-Chirurgical Society and School of Medicine. School of Medicine, Leeds University, Leeds, England. Dr. A. S. F. Grünbaum. 9,091.

LIVERPOOL.—Library of the Liverpool Medical Institution. 114 Mount Pleasant, Liverpool, England. Mr. William Jones. 14,000.

LONDON—Library of the British Medical Association. British Medical Association, 429 Strand, London, England. Mr. Spencer Honeyman. 40,000.

Library of the Medical Society of London. 11 Chandos street, Cavendish square, London, W., England. Mr. George Bethel. 25,000.

Library of the Medico-Psychological Association of Gr. Britain and Ireland. 11 Chandos street, Cavendish square, London, W., England. Mr. George Bethel. 3,000.

Library of the Ophthalmological Society of the United Kingdom. Mr. George Bethel. 5,000.

Library of the Royal College of Physicians of London. Royal College of Physicians, London, England. Dr. Norman Moore. 26,000.

Library of the Royal Society of Medicine. 1 Wimpole street, London, W., England. Mr. Charles Richard Hewitt. 80,000.

Library of the Royal College of Surgeons of England. Lincoln's Inn Fields, London, W. C., England. Mr. Victor G. Plarr. 60,000.

The Wills Library, Guy's Hospital. St. Thomas's street, London, S. E., England. William Wale. 8,000.

Library of London Hospital Medical College. Turner street, Mile End, London, E., England. Dr. William Wright. 5,000.

Library of St. Bartholomew's Hospital College. St. Bartholomew's Hospital, London, E. C., England. Mr. Alfred Coughtrey. 16,500.

Library of St. Thomas's Hospital. London, S. E., England. Mr. George Rendle. 7,000.

Library of University College Hospital Medical School. University street, Gower street, London, W. C., England. Mr. L. Rhys Thomas. 12,500.

Library of the Westminster Hospital Medical School. Caxton street, London, S. W., England. Dr. E. B. Hulbert. 1,750.

LOS ANGELES—Barlow Medical Library. 742 North Broadway, Los Angeles, California, U. S. A. Miss Jessie A. Wier. 4,439.

LOUISVILLE—Jefferson County Medical Library. 700 Atherton Building, Louisville, Kentucky, U. S. A. Mr. H. S. Smith. 5,500.

MADRAS—Library of the Madras Medical College. Park Town, Madras, India. S. Chidambara Pellay. 5,426 (1911).

MANCHESTER—Conjoint Library of the Manchester Medical Society and the Faculty of Medicine in the University. Manchester, England. Mr. A. F. C. Davey. 41,200.

Library of the Manchester Royal Infirmary. Manchester, England. Dr. F. E. Tylecote. 6,200 (1911).

MANILA—Library, Bureau of Science. Manila, Philippine Islands. Miss Mary Polk. 23,308.

MELBOURNE.—Medical School Library, University of Melbourne, Carlton, Victoria, Australia. Mr. Frank Gladish. 11,434.

MILFORD—Library of the Thurber Medical Association. Milford, Massachusetts, U. S. A. Dr. J. M. French. 200.

MILWAUKEE—Library of the Milwaukee Medical Society, 325 Goldsmith Building, Milwaukee, Wisconsin, U. S. A. Dr. J. D. Madison. 7,500.

MINNEAPOLIS—Library of the Hennepin County Medical Society. 1114 Donaldson Building, Minneapolis, Minnesota, U. S. A. Mrs. Carrie C. Jones. 5,120.

Library of the Medical Department of the University of Minnesota, Minneapolis, Minn., U. S. A. Dr. Thomas G. Lee. 10,000 (1911).

MONTREAL—McGill Medical Faculty Library. Montreal, Canada. Miss M. R. Charlton. 35,000.

MUNICH—Library of the Munich Medical Society. Altheimer Eck 20, Munich, Germany. Dr. Bernhard Spatz. 66,075.

NEWARK—Library of the Newark Medical Library Association. Free Public Library, Newark, New Jersey, U. S. A. Mr. John Cotton Dana. 1,263.

NEW HAVEN—Library of the New Haven Medical Association. 152 Temple street, New Haven, Connecticut, U. S. A. Dr. Gustavus Eliot. 5,500.

NEW ORLEANS—Library of the Orleans Parish Medical Society. New Orleans, Louisiana, U. S. A. Mr. George Augustin. 10,000.

Library of the Medical Department, Tulane University of Louisiana. P. O. Drawer 261, New Orleans, La., U. S. A. Miss Jane Grey Rogers. 8,000.

NEW YORK—Library of the New York Academy of Medicine. 17 West 43d street, New York, N. Y., U. S. A. Mr. John S. Brownne. 92,000.

Library of the College of Physicians and Surgeons. 437 West 59th street, New York, N. Y., U. S. A. Mr. Alfred L. Robert. 1,200.

Library of Rockefeller Institute for Medical Research. 66th street and Avenue A, New York, N. Y., U. S. A. Miss Lillia M. D. Trask. 6,420.

NOTTINGHAM—Library of the Nottingham Medico-Chirurgical Society. The Dispensary, Broad street, Nottingham, England. Mr. Kenneth Black. 1,500 (1911).

OMAHA—Library of the Nebraska State Medical Association. Omaha, Nebraska, U. S. A. Dr. A. C. Stokes.

ORANGE—Library of the William Pierson Medical Library Association. Orange Free Library, Orange, New Jersey, U. S. A. Dr. Palmer A. Potter. 2,717.

PARIS—Library of the Academy of Medicine. 16 rue Bonaparte (VI), Paris, France. Dr. Wickersheimer. 60,000.

Library of the Faculty of Medicine of Paris. 12 rue de l'Ecole de Médecine, Paris, France. Dr. F. L. Hahn. 210,000.

Henri Feulard Library. Hôspital St. Louis, 40 rue Bichat, Paris, France. Dr. Louis Wickham. 20,962.

Medical Library of Pasteur Institute. 25 rue Dutot, Paris, France. V. Roussel. 20,000.

Library of the Polyclinique H. de Rothschild. 199 rue Marcadet, Paris, France. Ch. Mettling. 12,000 (1911).

Public Assistance Central Library of Internes. 3 avenue Victoria, Paris, France. Andre Mesureur. 35,000 (1911).

Library of the National Surgical Society. 12 rue de Seine, Paris, France. 10,000 (1911).

PHILADELPHIA—Library of the College of Physicians of Philadelphia. 19 South Twenty-second street, Philadelphia, Pennsylvania, U. S. A. Mr. Charles Perry Fisher. 95,896.

Library of Hahnemann Medical College and Hospital of Philadelphia. Broad street above Race, Philadelphia, Pa., U. S. A. Dr. Thomas Lindsley Bradford. 15,000.

Jefferson Medical College Library. Tenth and Walnut streets, Philadelphia Pa., U. S. A. Mr. Charles Frankenberger. 5,000.

Pennsylvania Hospital Medical Library. Eighth and Spruce streets, Philadelphia, Pa., U. S. A. Mr. Milton M. Bergey. 15,000.

Library of the Woman's Medical College of Pennsylvania. N. College avenue and Twenty-first street, Philadelphia, Pa., U. S. A. Miss Henrietta Neuberger. 1,600.

PITTSBURG—Library of the Pittsburg Academy of Medicine. 43 Fernando street, Pittsburg, Pa., U. S. A. Miss Williamina Duncan. 5,200.

PLYMOUTH—Library of the Plymouth Medical Society. Athenaeum Chambers, Athenaeum Lane, Plymouth, England. Dr. A. Bertram Soltau. 1,700.

POUGHKEEPSIE—Library of the Medical Society of the County of Dutchess, 54 Market street, Poughkeepsie, New York, U. S. A. Dr. A. L. Peckham. 1,950.

PROVIDENCE—Library of Rhode Island Medical Society. 106 Francis street, Providence, Rhode Island, U. S. A. Dr. George D. Hersey. 25,000.

PUEBLO—Library of the Pueblo County Medical Society. Pueblo, Colorado, U. S. A. Dr. A. W. Bulette. 2,804 (1911).

READING, ENG.—Library of the Reading Pathological Society. Royal Berkshire Hospital, Reading, Berks, England. Dr. F. H. Hawkins. 3,000 (1911).

READING, U. S. A.—Library of the Berks County Medical Society. Sixth and Walnut streets, Reading, Pennsylvania, U. S. A. Dr. Clara S. Keiser.

RICHMOND—Library of Medical College of Virginia. Richmond, Virginia, U. S. A. Dr. A. A. Heuser. 3,029.

ST. LOUIS—St. Louis Medical Library. 3525 Pine street, St. Louis, Missouri, U. S. A. Dr. Frank J. Lutz, 13,800.

ST. PAUL—Ramsey County Medical Library. Lowry Building, St. Paul, Minnesota, U. S. A. Miss Irene Goette. 9,000.

ST. PETERSBURG—Library of the Imperial Military Medical Academy. 23 Pirogoff Embankment, St. Petersburg, Russia. Dr. A. Voynic-Sianozensky. 180,000.

SAN FRANCISCO—San Francisco County Medical Society Library. San Francisco, California, U. S. A. Dr. L. Eloesser. 4,000.

Lane Medical Library of Stanford University. Sacramento and Webster streets, San Francisco, Cal., U. S. A. Miss Frances S. C. James. 40,000.

SONYEA—Medical Library of Craig Colony for Epileptics. Sonyea, New York, U. S. A. 2,800.

STOCKHOLM—Library of the Caroline Institute. Stockholm, Sweden. Emil Haverman. 41,000.

Library of the Association of Swedish Physicians. Stockholm, Sweden. Dr. E. O. Hultgren. 30,000 (1911).

SYRACUSE—Library of the College of Medicine, Syracuse University. 300 Orange street, Syracuse, New York, U. S. A. Dr. Frank W. Marlow. 3,000.

TERRE HAUTE—Library of the Vigo County Medical Society. Emeline Fairbanks Memorial, Seventh and Eagle streets, Terre Haute, Indiana, U. S. A. Mrs. Sallie C. Hughes. 1,373.

TOKYO—Library of the Tokyo Charity Hospital Medical College. Shiba, Tokyo, Japan. T. Toriyama. 2,750 Japanese, 4,565 foreign.

TOPEKA—Stormont Medical Library. State Library, Topeka, Kansas, U. S. A. Mr. James L. King. 3,595.

TORONTO—Library of the Academy of Medicine, Toronto. 13 Queen's Park, Toronto, Canada. Miss Louise E. Mason. 6,000.

VANCOUVER—Library of Vancouver Medical Association. 633 Hastings street, W. Vancouver, British Columbia. Miss E. A. Keenlyside. 2,000.

VIENNA—Library of the Medical Society of Vienna. Rotenturmstrasse 19, Vienna, I, Austria. Dr. Leopold Senfelder. 3,000 (1911).

Library of the Physicians' Association of Vienna. Frankgasse 8, Vienna, Austria. Dr. H. Paschkis. 46,000.

WASHINGTON—Library of the U. S. Naval Medical School. Twenty-fourth and E streets, N. W., Washington, District of Columbia, U. S. A. Mr. C. R. Eagle. 16,200.

Library of the Surgeon General's Office, U. S. Army. Washington, D. C., U. S. A. Dr. Walter D. McCaw. 175,507.

Library, Bureau Public Health and Marine Hospital Service. 3 B street, S. E., Washington, D. C., U. S. A. Dr. Paul Preble. 4,000.

WAVERLEY—McLean Hospital Medical Library, Waverley, Massachusetts, U. S. A. Miss E. Kathleen Jones. 5,234.

WHEELING—Library of the Wheeling Medical Library Association. Wheeling, West Virginia, U. S. A. Dr. Frank LeMoyne Hupp. 3,000.

WILKES-BARRE—Luzerne County Medical Society Library. Anthracite Building, Wilkes-Barre, Pennsylvania, U. S. A. Dr. Lewis H. Taylor. 5,145.

WINNIPEG—Medical Library, College of Physicians and Surgeons of Manitoba. 220 McDermot avenue, Winnipeg, Manitoba, Canada. Miss S. D. MacIntyre. 1,873.

WORCESTER—Worcester District Medical Library. 18 Elm street, Worcester. Massachusetts, U. S. A. Dr. Merrick Lincoln. 9,797.

YORK, ENG.—Library of the York Medical Society. 1 Low Ousegate, York, England. Dr. A. B. Northcote. 6,000.

YORK, U. S. A.—York County Medical Society Library. York, Pennsylvania, U. S. A. Dr. I. H. Betz. 3,000.

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**Parallelism Between Gout and Diabetes.**—G. Guelpa believes that both of these disorders are of common origin but widely separated in their later development, symptomatology, and treatment. They both result from an excessive diet, which exaggerates the functional activity of the metabolic organs and causes an increase in the ordinary urinary constituents. There then occurs a condition of metabolic fatigue. At this stage diabetes and gout diverge in their manifestations. In the case of the former there occurs an accumulation of soluble acids in the blood including β-oxybutyric acid, diacetic acid, and other acids less well known; and in the case of the latter disease there is a deposition of an excess of uratic and calcareous constituents of the blood.—*Bulletin et Mémoires de la Société de Médecine de Paris.*

# Society Reports.

## PRACTITIONERS' SOCIETY OF NEW YORK.

*Two Hundred and Fifty-Second Regular Meeting, Held January 3, 1913.*

THE PRESIDENT, DR. BRANNAN, IN THE CHAIR.

**Beatson's Operation for Recurrent Mammary Carcinoma.**—Dr. ABBE presented two patients illustrating the remarkable effects of oophorectomy on inoperable recurrent mammary cancer. One was a young woman, who a year and a half after operation appeared in excellent health, but who showed the early secondary recurrence after the usual effect of Beatson's operation declined. But the case suggests the thought of possible other benefits that might carry on the beneficent action. He had shown the patient to this society fourteen months ago, just six months after operation for removal of the ovaries. Her condition then was absolutely free from any visible or palpable evidence of disease, and she was in admirable health and working heartily, whereas at the time of the operation she had had a mass of solid recurrence around the scar of the original breast operation which could scarcely be covered by the hand—a veritable cuirass carcinoma. Besides this there were supra- and infraclavicular nodes on both sides and a new cancer mass on the unoperated side as large as a small pullet's egg, with axillary nodes; also one cutaneous metastatic node in the skin over the shoulder blade. Every vestige of these growths melted away and left the patient seemingly in restored health. In one of her ovaries was found a metastatic cancer the size of a pea. One month after exhibition to this society a half dozen shot-like nodes were discovered near the old scar. These disappeared rapidly under radium influence. During the past year numerous others, always of small size, had come and had been dissipated. Of late they were not yielding so well, yet the patient was in excellent health and full weight. It had now occurred to him to try the effect of serum injections, of rabbit's serum from a rabbit whose ovaries were removed two weeks before. Three injections of twelve c.c. of fresh centrifuged serum had been given one week apart. It was too early to see the effect, but the experiment seemed worth making, inasmuch as the inhibitory action of her own serum, freed from her own ovarian secretion, might possibly be continued by using that of another animal. A later report would be made; meanwhile radium was sufficient.

The second patient exhibited an enormous generalized recurrent carcinoma with extensive and very active ulceration in the cicatricial mass. About one hundred and twenty independent metastatic nodes had been counted; none smaller than the end of the finger, scattered over the front of the chest and inoperated breast, from the clavicle to the epigastrium, and beyond the carcinoma cuirass in the operated field far around the axilla to the scapula. Four weeks ago her ovaries had been removed, each presenting a cancer node. The effect on the generalized carcinomas had begun in one week and progressed steadily to present improvement. The ulcerated mass had become pale and was cicatrizing rapidly; the nodules were everywhere flattening and umbilicating. There was little doubt that she also could be shown to the society after a few months free from apparent disease. He designed not only to exhibit types of this unique surgical state, but to stimulate study of the biochemistry of the ovarian secretion, as well as to demonstrate that we might yet find in Beatson's operation, combined with radium, which was a valuable supplemental resource, a means of extending our hopes and aid.

Dr. BRYANT asked whether in case of cancer that seemed to be more or less scattered through the tissues, it would not be important to associate radium therapy with operative procedure; whether the disease returned at the situation where the radium caused its disappearance; whether new growths appeared when the radium had ceased, and whether new growths occurred between the places where radium had dispelled other growths.

Dr. CONNER said that the striking effects of removal of the ovaries upon malignant growths raised many interesting points. It would seem as though such effects must depend upon the general nutritive changes which resulted from removal of the sexual glands, and it suggested that others of the glands of internal secretion, such as the hypophysis, might have equally important influences upon such growths, which might ultimately be utilized in the treatment of these conditions.

Dr. Abbe said that he had been interested twelve years ago in oophorectomy for recurrent mammary cancers and had operated on ten cases. He had given it up for a while, but his interest in it had been revived. He found that when the beneficial disappearance of recurrent masses following oophorectomy began to wane, and small recurrences to begin, radium then exerted its beneficial action and prolonged the immunity. The influence of radium tended to become exhausted; it became too painful in time to be used, although at first it allayed pain as an anodyne. He hoped, however, that in time some other agents would prove available to take up the cure where radium was no longer of service. The effect of radium was local and for a certain depth only. The possibility of a serum treatment might here be of use. If the removal of the ovaries in the patient so far altered metabolism as to cause a disappearance of the growth, the serum of some animal from which the ovaries had been removed might produce a similar effect. He had lately made an experiment with rabbit serum from an animal with removed ovaries, using 12 c.c. of the serum for injection. In some apparently hopeless cases the serum treatment might prove of use. He was trying this.

Dr. Cleveland said he had had no experience with Beatson's operation, but he wished to say that it seemed to him that the operation itself had an effect upon the development of the disease, and that, if the radium could be used as a supplementary treatment to check further growth, there was distinct reason for encouragement.

Dr. Abbe presented patients illustrating the paper of the evening. Some had undergone hemiglossectomy for epithelial carcinoma. He asked one man, a lawyer, to speak and show the effect of the operation. The patient said that he had very little difficulty in speaking if he spoke slowly, and that only a few words were any trouble to him. He was able to speak in court and pursue his calling. Case 2 was that of woman who had had a cancer of the inside of the cheek, the gum, and part of the tongue, necessitating partial glossectomy and removal of the half cheek and jaw. The woman had been in perfect health for five years since the operation and experienced no discomfort and was not greatly disfigured.

Cases of leucoplakia were then presented, showing typical white patches, or "smoker's patches." One unusual case occurred in the cheek, where the quid of tobacco was held. These cases had responded to radium when nothing else would effect a cure. A case of epithelioma of the lip was shown of a kind that usually required surgical interference. This was successfully treated with radium and remained cured after two years. In a case of lymphangiectasis, where the entire left side of the tongue had been a bleeding mass, radium treatment had reduced it by half. The condition had been brought down to a flat surface and papillary tissue. A patient was also shown who had had a large giant-celled sarcoma of the jaw which had been treated by radium and had disappeared for eight years and had not recurred. This had occupied the entire bone of the jaw. The teeth were loose but were now solid. The bone had been almost entirely absorbed, but there was now a perfectly solid bone.

Dr. Abbe brought for inspection many colored casts, to show the conditions in various malignant diseases of the jaw and mouth.

**Malignant Disease of the Mouth and Tongue.**—Dr. Robert Abbe read this paper. (See page 461.)

Dr. Bryant congratulated Dr. Abbe and the members of the society on the artistic feature introduced by the casts and the amount of information they gave to those who saw them. If all surgeons made such diligent observations and collections it would be of immense advantage and would indeed add much to the history of surgical attainment. Speaking of giant-celled sarcoma, he said he had come across many of these cases, but he had never considered radium a necessary method of cure. He did not consider the giant celled sarcoma a malignant manifestation. He had treated at Bellevue several cases by free removal, and without return, of the growth. He felt it pretty hopeless to attack a cancerous condition of the mouth and tongue, especially if well advanced in nodular infection, except for the purpose of giving physical or mental relief. The idea that something was being done and the relief of the removal of the disease from the mouth cavity gave comfort and help to the patient. Very often a patient with a malignant disease which had been pronounced hopeless died of something quite different. The disease itself was modified largely by the stamina of the patient, his habits, etc. Very often extensive disease might occur without manifestations. A patient had come to him with a short-standing severe pain in the ear; he had found the pharynx was involved in an extensive cancerous process on the painful side, yet the patient was positive that the pain was the first indication he had had that he was afflicted with the disease.

Dr. Ewing said that he had been greatly impressed with the results of Dr. Abbe's work but that it was clear to him that these results were very largely due to Dr. Abbe's special knowledge of radium. Wickham and de Grais also accomplished results that no one else could get. It would be valuable if more attention could be paid to the methods of applying radium. Some investigators who worked with radium accomplished nothing. They probably attempted too much. Most observers acknowledged defects in controlling the dosage. This matter of want of experience in dosage stood in the way of the general application of radium. Additional guidance might be had if more were known of the histological characters of the cases treated. Papillomas of the tongue were very different processes from infiltrating carcinomas. The various types of sarcomas also would bear careful subdivision. Wickham and de Grais had cured mixed tumors of the parotid with radium. These were somewhat difficult to handle surgically. It seemed probable that careful study might reveal certain other specific diseases in which radium would give excellent therapeutic results. He said that changes from a wart to carcinoma were frequent in the bladder and larynx but were very infrequent on the tongue and lip.

Dr. Flexner said he would like to refer to one point brought up by Dr. Abbe's paper, namely the influence of injury to cells in promoting the development of tumors. At the Rockefeller Institute, Dr. Rous had now obtained, from three chicken tumors, Berkefeld filtrates that were capable of causing similar tumors to develop upon inoculation into healthy fowl. One of the tumors produced bone and cartilage. When these filtrates were injected into the breast muscle, a tumor developed at the site of inoculation and not elsewhere, and for the reason that the introduction of the needle produced an injury at that point. When, however, there was suspended in the filtrates some infusorial earth, containing the skeletons of diatoms, which were capable of penetrating and injuring the cells, the filtrates were then capable of setting up tumors in the various internal organs to which the diatoms were carried. The demonstration, therefore, was in this series of instances conclusive that these growths, which were of malignant character, required, as a condition of their development in the body, injury to the normal cells, which otherwise seemed able to resist the action of the causative agent.

Dr. Taylor said that in a case of leucoplakia of the tongue removed by dissection the wound healed by primary union, but the woman returned 5 years later with a well developed carcinoma in the scar of the old operation.

Dr. Kinnicutt said he knew a case of a man who at 75 years had an exaggerated form of leucoplakia, the whole tongue being covered. He had had this 15 years when he died from another cause, but he had no evidence of epithelioma.

Dr. Wood said that such work as Dr. Abbe had reported was of great value to the pathologist for it furnished him with information not obtainable in other ways. Malignancy was a clinical phenomenon, and there was no real criterion of malignancy under the microscope. All we knew was that tumors of a certain morphology recurred and that others of a different morphology as a rule did not recur after removal. Dr. Abbe had shown that an epulis or giant celled sarcoma was influenced by radium, a proof of the relatively benign nature of these growths, which because of their morphology must be called sarcomata. The results presented tallied with the work of Bloodgood in Baltimore, and with a recent German summary in which, of seventy-two cases of giant celled sarcoma of the gum, only two recurred after excision.

Dr. Gibson said it was very interesting if leucoplakia could be cured and so prevent cases of carcinoma. If radium could affect superficial growth it was sometimes a better mode than a surgical one. Malignant growth might recur any time, twenty or thirty years after, and radium apparently was of no value in deep seated growths.

Dr. Brannan asked if Dr. Abbe could teach his house staff to keep such records, and if it were possible to direct radium so that it could be used for internal tumors.

Dr. Thacher asked if there had been any recurrence in any of these cases.

Dr. Abbe said in reply to Dr. Thacher that there had been frequent recurrences because of insufficient dosage of radium in many cases. The giant-celled type of growth yielded more readily than the mixed spindle-celled and

fibrous types. Replying to Dr. Brannan he said he had done this work mostly himself with a sense of duty and it had materially helped him. He found it difficult to educate his house officers to do it. He said that in primary cancer of the liver and renal sarcomas he had placed radium tubes within the growth with valuable results, but not as yet permanent benefit. It was all on trial. He said he was sorry to note an erroneous impression that he had made claims for radium that he had not intended. His design had been to show that radium could do what other resources could not do. Radium fell short of doing what we should like to have it do. Surgery, first, last, and all the time, was still our greatest resort. Radium had wrought little as yet in internal cancer, and nothing had been claimed for it. The study led to interesting ideas. Dr. Ewing had spoken of parotid tumors. He had treated one case of a large parotid tumor which almost disappeared; about four years later it had started to grow again, but with treatment it was kept down and never became as large as at first. He had seen large parotid tumors, almost hopeless cases, which yielded favorably to radium. Sarcoma of the jaw might well be called malignant when one inch of the jaw was destroyed. Radium made solid bone again in such cases. There was under his care one old lady 75 years of age who had had a distressing bleeding mass of tumor entirely disrupting the right lower jaw. Radium was kept for six hours in the center of the mass, which soon began to shrink, and in time the bone became perfectly solid. This case duplicated the remarkable one shown the society to-night, eight years after perfect restoration through radium. This could not have been accomplished through surgery. In cases of involvement of the gums when the growth appeared between the teeth, either epithelioma or giant celled sarcoma, the tumor had disappeared with treatment and the teeth had been retained. Surgeons would have taken the teeth out and sacrificed the surrounding bone, but surgery could not induce ossification in the tumor which radium could do. He did not wish to be considered as exploiting radium, but it did things which surgery could not do. In time it might be hoped that a unit of effect could be reached and radium treatment could be more regulated. In Germany it was used by injections.

**Case of Cerebral Tumor Cured by Operation.**—Dr. Dana presented a case of cerebral tumor cured by operation. The patient was a sailor by occupation and three years previously had fallen on shipboard. The fall rendered him unconscious and he remained so for 36 hours. So pronounced was this state that his companions considered him dead and were about to throw him overboard. He gradually regained consciousness and no motor disturbances followed. Some time after this he began to have headaches which persisted off and on. In addition, in the past three or four months he had had a sticking or pricking sensation in the left face. His eyes were examined and it was said that the discs were a little swollen. About a week before entering hospital his headaches became very severe. There was no other complaint. Eyes at this time were reported normal. Headache persisted, and 48 hours before entrance he began to get confused and walking became slightly difficult. These two symptoms persisted and within twenty-four hours he was semi-conscious and walked with much difficulty. He was admitted to the Institute the evening of December 10, 1912. He was in a state of semi-consciousness, very restless, tossing himself about the bed. Physical examination under difficulties revealed a beginning left hemiplegia. His gait suggested a beginning paraplegia. Spinal puncture revealed pressure, 5 cells, excess of globulin, and Fehling reduced, Wassermann negative. Eyes showed R 5 D., L 4 D. The following morning craniotomy was done by Dr. A. S. Taylor.

Dr. Taylor said that since the tumor was thought to be in the right frontal lobe, but might be situated posteriorly, a large osteoplastic flap was turned down by means of the Hartley-Kenyon motor saw, which would permit a thorough exploration, and could readily be removed in part or in whole, if necessary for decompressive purposes. This flap extended from just in front of the ear upward vertically to within 3 c.m. of the sagittal line, then forward well on to the frontal bone, and then downward and backward to just above the anterior end of the zygoma, thus bringing the hinge of the flap in the thin squamous bone. On turning down the bone flap the dura was very tense and showed no pulsation. Stellate incisions were made in the dura for decompressive purposes. The frontal lobe was explored and no tumor found. On examining the upper posterior corner of exposed brain, just the anterior edge of a solid tumor was made out. Further examination disclosed a large solid tumor occupying most of the right parieto-occipital lobe. This lay beneath the bone behind the osteoplastic flap which had been turned down. The removal of the tumor was left for a second stage. The segments of dura were placed smoothly over the brain surface, the lower third of the bone flap was removed for decompressive effect, and the remainder was returned to its proper position. The muscles and scalp were sutured. No drainage was used. This procedure left a considerable area for decompression beneath the thick belly of the temporal muscle and also left the upper part of the bone flap floating so that ample decompression was provided. The following day the patient was perfectly conscious, sat up in bed and demanded a smoke. His eye grounds rapidly improved, the signs of left hemiplegia disappeared, and his mind became clear. On Dec. 21 (ten days after the first operation), a second flap was turned down just posterior to the first one. The inner table of this flap showed several rough projections of bone which had caused an ulceration of the dura, and this ulcerated area was apparently the center and original starting point of the tumor. The tumor, about the size of an ordinary fist, was easily shelled out of the parieto-occipital lobe. Its anterior edge pressed far enough forward to compress the motor cortex. The bone which was evidently diseased was stripped from the soft part of the flap, which was then sutured in place by layer sutures. The dura overlying the tumor was removed with it. A small wick of gauze was inserted into one corner of the wound. Healing was by primary union; the eyes had made a perfect recovery and the only evidence left of his trouble, besides the scars, consisting of some astereognosis in the fingers of the left hand.

Dr. Connor asked Dr. Taylor if the growth extended so far posteriorly as to involve the visual center in the occipital lobe, as would be indicated by a hemianopsia.

Dr. Bryant asked whether one might expect to find blood pressure high in such a case, and whether the tumor had been long in existence.

Dr. Brannan asked whether the removal of the tumor restored function, and if this were a spindle-celled sarcoma.

Dr. Ewing asked if a positive diagnosis had been made in this case between a sarcoma and an endothelioma.

Dr. Wood said that this was an encapsulated tumor, and that in the brain the endotheliomata and sarcomata resembled each other greatly in morphology.

Dr. Taylor said in reply to Dr. Conner that the patient was unconscious when brought to the Neurological Institute. He thought that for a short time there was a little hemianopsia. In reply to Dr. Bryant he said that slow growing tumors that occurred outside the brain and grew inward developed symptoms very slowly. They might be there for years before causing any symptoms. The blood pressure would be high in such a case. Such motor disturbances as the patient had were the result of the anterior end of the tumor pressing against the motor cortex; as soon as that was released the recovery of function was immediate. The sister of the patient stated that the patient had been bothered with his eyes for ten years. Whether that had anything to do with the brain tumor or not could not be definitely stated, but it was not probable. The fall on the head had probably injured the inner table of the skull. The bone itself was diseased and was removed. There was a distinct place one-half inch in diameter where two or three rough places could be seen. His fall may have cracked the inner table of the skull and constant irritation of the dura may have started this growth which pushed down into the brain substance.

**Fatal Case of Bichloride of Mercury Poisoning.**—Dr. Kinnicutt gave the clinical history of a fatal case of bichloride of mercury poisoning, with specimens. The patient, a woman 32 years of age, was admitted to his wards in the Presbyterian Hospital an hour after the swallowing of the poison. The history given by the patient was that almost immediately after taking two glasses of beer, she was seized with a violent pain in the epigastrium, followed in a few minutes by the vomiting of bright fluid blood. She was brought to the hospital in an ambulance, and during the succeeding 24 hours had several small hematameses and passed several ounces of fluid blood by the rectum. Examination revealed no lesions of the mucous membrane of the mouth or pharynx, no physical signs other than sensitiveness in the epigastrium at about the site of the pylorus. It was believed that she was suffering from a gastric or duodenal ulcer. On the third day after admission slight superficial sloughs developed on the hard palate and inner surface of cheek on one side. Gradually marked sensitiveness developed along the whole course of the colon, there were frequent vomiting (the

vomited matter being free of blood), and profuse diarrhœa, the stools containing blood in small amounts and finally shreds of necrotic tissue. A diagnosis of poisoning by some metallic poison was then believed to be the correct one, although the patient positively adhered to the history first given. There was complete anuria for seven days without the development of uremic symptoms of any kind. The blood, however, showed the presence of urea 0.245 per cent. (normal 0.02 to 0.04 per cent.), and NaCl 1.984 per cent (normal 0.6 per cent); it failed to reveal the presence of mercury, which was the poison suspected of being the cause of the symptoms. Also, no mercury was recovered either from stools or urine. On the eighth day a small amount of urine was passed, and gradually the renal function was restored so far as the excretion of urine was concerned. The symptoms referred to practically continued to be present up to the time of death, without the development of new ones. Death occurred on the thirteenth day from the beginning of the illness. Shortly before death the patient confessed to having taken three bichloride of mercury tablets, probably containing about 25 gr. of the bichloride of mercury altogether with the beer. An autopsy was made by Dr. Albert Lamb. The specimens exhibited—esophagus, stomach, small and large intestine, and kidneys—showed interesting lesions. *Esophagus:* In general the mucous membrane was pale and intact; there were, however, scattered diffuse areas of rather intense congestion. *Stomach:* The mucous membrane was intensely congested; the contrast between the lower end of the esophagus and the beginning of the stomach was striking, the esophagus being pale, and the stomach intensely red; on the greater curvature there was an ulcerated area about 7 c.m. by 6 c.m. covered with greenish black necrotic tissue. The duodenum showed only a moderate amount of congestion, and the same was true of the remainder of the small intestine. The transition at the junction of the ileum and cecum presented a striking picture. In the terminal portion of the ileum the mucous membrane appeared fairly normal. From this point, which was sharply defined, an intense diphtheritic inflammation extended continuously as far as, and even into, the rectum. Microscopic examination revealed a complete necrosis of the coats of the large intestine, down to the muscularis, which in places also was involved in the process. *Kidneys:* An acute parenchymatous nephritis was present. Microscopically the lime deposits were very striking. In places these existed as small granules within the epithelial cells of the tubules, at other points they almost completely replaced the cells, and again the lumina of the tubules were choked with masses of them. Dr. Kinnicutt said that the specimens strikingly demonstrated the interesting election of the large intestine in the elimination of the poison.

## MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

*Stated Meeting, Held December 16, 1912.*

The President, Dr. Reynold Webb Wilcox, in the Chair.

**Nominations for Officers.**—The following nominations for officers were made: *Recording Secretary,* Dr. P. Brynberg Porter, Manhattan; *Chairman for the Borough of Brooklyn,* Dr. Robert E. Coughlin, Brooklyn; *Chairman for the Borough of Richmond,* Dr. William Bryan, West New Brighton, S. I.; *Member of Council,* Dr. Louis Faugères Bishop, Manhattan.

**Experience with Neosalvarsan.**—Dr. Howard Fox, who read this paper, stated that he wished his remarks on neosalvarsan to be considered as a preliminary report and to serve as a means of introducing the subject to the attention of the Society. He did not wish to quote from the work of others, but to give his own experience with the samples of neosalvarsan given him for experimental purposes by Professor Ehrlich. The remedy had been used entirely for charity patients at the Harlem Hospital, all of them having been treated in an ambulatory manner. Thus far fifty patients had received the neosalvarsan, in the majority of the cases by the intravenous method. Most of the injections had been given on three or four successive occasions, at intervals of forty-eight hours. The cases included various early and later syphilides, lesions of the mucous membranes of the eye and of the bones. The writer's impression was that the effect of neosalvarsan was slightly less rapid than that of the old salvarsan. There was no question but that the administration of the new preparation was easier than that of salvarsan. There also seemed to be less disturbance in the veins following the injection, as it was often possible to give four injections in the same vein without causing its obliteration. The effect upon the Wassermann reaction had not been particularly favorable. The reading of the paper was followed by a demonstration of patients illustrating some of the results that had been obtained. These included a case of iridocyclitis which occurred during the course of treatment of an early syphilide.

Dr. John A. Fordyce said that he began the experimental use of neosalvarsan at the City Hospital in the spring of 1912, and at that time gave about 400 doses of it. It was then advised by Schreiber to administer the drug in doses of from one gram to one gram and a half every alternate day until four doses had been given. He had given the amount of the drug advised by Schreiber to a number of patients, to others the drug was given in smaller amounts. About one-half of the patients to whom the larger doses were given developed febrile reactions, sometimes after the first dose, though generally after the third dose. The distilled water then employed was not always freshly prepared on the day it was used. This might have accounted in part for the reactions. In his private work the water was distilled on the day of its use and he now had fewer and fewer reactions. He believed that the clinical results following the administration of neosalvarsan were almost, if not quite as rapid, as those following the administration of salvarsan if given in somewhat larger proportional doses, and showed photographs of several cases illustrating the rapid effects of the drug on the early and late syphilitic manifestations. Since the earlier experimental use of neosalvarsan it had been found advisable to lengthen the intervals between the doses and to diminish somewhat the quantity of the drug employed. He was now giving it in doses of 0.45 to 0.8 gm. and repeating it at weekly intervals. Up to the present time he had given more than 1,000 doses of neosalvarsan. With the improvement in the technique, he scarcely noted any reaction except in the florid stage of the disease. In two patients to whom 6 and 7 grams of neosalvarsan had been given in a period of two weeks he had observed symptoms of irritation of the peripheral nerves, which was manifested by quite marked paresthesias of the extremities, persisting for several weeks and then gradually disappearing. The neosalvarsan, according to his experience and that of other observers, seemed to have more of a neurotropic action than salvarsan. Dr. Fordyce went on to say that the treatment of syphilis was now more severely criticised than under the older methods of treatment. We not only combatted the clinical manifestations, but endeavored to obtain a persistent negative serum reaction, and as our knowledge of syphilis of the nervous system increased, a negative blood Wassermann was not sufficient. We should endeavor in syphilis of the nervous system to secure the same in the fluid obtained by spinal puncture, as it was not infrequently noted that the Wassermann reaction was negative in the blood and positive in the spinal fluid, and *vice versa.* He did not doubt for an instant that under the newer methods of treatment far better results were obtained than under the older ones. This was evidenced not only by the quick response of the lesions to the treatment, but also by a smaller number of relapses sand the growing infrequency of reinfections. Since the introduction of salvarsan two cases of reinfection had come under his observation. In one of them, a young man who presented typical multiple initial lesions of the lips and a secondary rash, a single injection of salvarsan was given in June, 1910; after which the Wassermann reaction became negative and remained so for nearly two years. During the present summer the patient presented himself with an initial lesion on the penis from which spirochetes could be demonstrated. He later developed a secondary rash on the skin and mucous patches in the throat. In the second case, after apparent cure of his first infection and with a negative Wassermann reaction, the patient developed a second chancre, from the secretion of which spirochetes could be demonstrated. Dr. Fordyce was not informed of the subsequent developments in the second case. The treatment of syphilis was now to some extent standardized, and we could assure a patient, if seen in the early period of the infection, that the course of treatment could be materially abbreviated. The method which he employed was briefly as follows: In the early period of the disease, from four to six injections of salvarsan at weekly intervals, followed by two to three months of mercurial injections or rubbings. A period of rest of six weeks or two months; then a Wassermann reaction. If the latter were positive, a repetition of two or three intravenous injections of neosalvarsan, followed by mercury. He had an increasing number of cases in which this treatment had apparently aborted the infection within

the first six months. In the later periods of the disease the methods of treatment were much the same, but there was less certainty of permanently altering the serum reaction except by several courses of the treatment which had been outlined. In latent syphilis with a positive Wassermann reaction it was sometimes exceedingly difficult or quite impossible to change the reaction except by an amount of arsenic or mercury which would be considered dangerous to the patient. It was possible that in such cases the virus was so permanently fixed to the cells of the body that no method of treatment could change it. To illustrate this latter statement he referred to a patient with severe syphilis of the nervous system to whom 18 injections of salvarsan and neosalvarsan had been given, together with more than 100 injections of bichloride and salicylate of mercury and several courses of iodide of potassium in large doses. The reaction in this case remained persistently positive, although the clinical symptoms showed marked improvement. In regard to the so-called nerve recurrence he was more firmly convinced than ever that they were due to insufficient treatment, and not to the effect of the drug on the cranial nerves. Since salvarsan had been used in the intensive manner outlined nerve recurrences were less frequently reported. Lumbar puncture, too, in such cases, had proved that a meningitis existed which was doubtless responsible for the involvement of the special nerves. It was important to recognize the fact that the nervous system is infected at a very early period of the disease, as spinal punctures made at this time showed that the fluid contains an increase of lymphocytes and globulin, and gives a positive Wassermann reaction. This serological condition might exist without symptoms. It was very easy to see, however, that such patients were potentially in a position to develop meningitis with involvement of the cranial nerves, and later the inflammatory and degenerative processes met with in tabes or paresis. Unless all the spirochætæ were destroyed, as evidenced by the return of the spinal fluid to a normal condition, permanent damage which could not be repaired might easily result. The observations of the best neorologists who were familiar with the proper treatment of syphilis of the nervous system, and who had opportunities of treating large numbers of patients, showed that insufficient treatment with salvarsan was worse than insufficient treatment with mercury. The best results in such cases were obtained by frequent repetition of salvarsan combined with injections of mercury. An increase in tabetic symptoms following one or two doses of the drug was not an indication that it is harmful but was an indication for pushing the treatment to greater length, as such cases would show improvement after a sufficient amount of the drug had been given. He had been unable to convince himself that either salvarsan or neo salvarsan had any special effect on the optic or auditory nerve; or that they hastened the degenerative processes which previously had existed in these nerves.

Dr. Faxton E. Gardner said he had employed neosalvarsan exclusively since the first of May last, since which time he had given about 200 injections. All of these were intravenous, and he had never used the intramuscular method for either the old or the new salvarsan, holding that, up to date, no advantage of intramuscular injections over intravenous had been demonstrated, while the disadvantages were obvious. Moreover, in all his cases he had jabbed the vein directly under the skin; and he had never been obliged to expose the vein. In one, instance, however, he had found it impossible to get into the vein, because of infiltration of the arm in consequence of two previous injections by others. He therefore gave up the attempt. In order to be sure of fresh distilled water for the injections, he always distilled his own water. He was not prepared to say that all the reactions which had been noted after the use of neosalvarsan were due to the character of the distilled water employed, but he was convinced that this was responsible for a good share of them. When it came to injecting a fluid into the human body, certainly only the purest that could be obtained should be used. In five of his cases vomiting was noted, and in three of these that occurred consecutively he found that the distilled water of the injections, which at the time he thought was fresh, was in reality two weeks old. He had never had a case of infiltration. When leakage occurred during the injection there always was great pain, and we could therefore judge from the pain when there was leakage that would later lead to infiltration. In that case it was advisable to withdraw the needle at once and to make a new puncture elsewhere, either in the same arm or in the other. It was an important point to dry up thoroughly the inside of the needle, as well as cleaning the outside after the injection, and for this purpose he was in the habit of employing the blowing bulb of the thermocautery. Neosalvarsan, he believed, was certainly less *toxic* than salvarsan, but also less *active*. While the results with it were sometimes brilliant, in other instances its action seemed slow, and in still others little, if any, benefit was noted. Personally, he would not employ the massive doses commonly given in Germany, and thought that better results would be obtained by lengthening the period of treatment, instead of simply increasing the doses.

Dr. Abraham L. Wolbarst said that he had treated 120 cases with neosalvarsan. To these 120 patients he had given 51 intramuscular injections and 90 intravenous injections. Intravenous injections were easy to give and easy to take, but he had found them decidedly less efficient than the intramuscular. With the latter the arsenic had a long-continued action, so that the drug could be found in the tissues even for three months after its administration. With intravenous injections, however, the effects were far less lasting. Their duration was a matter only of days—four, five or six days, and eight days as the maximum. Another decided disadvantage of them was the scar sometimes left after cutting down on a vein in order to get the injection into it. Thus, he had seen one young girl who had such a scar on her arm that she was mutilated for life, and he could not but feel that if the operator was unable to puncture the vein without cutting, he should have given up the attempt to use salvarsan and treated the patient with mercury. Such scarring was unpardonable and should, he thought, be considered as malpractice. He understood that examiners for life insurance companies were now in the habit of looking for scars on the arms of applicants for insurance as one means of determining whether they had had syphilis or not. If the surgeon could not get into the vein without first cutting down upon it, he had better either employ intramuscular injections or else give mercury. In a conversation which he had had some eight months ago with Ehrlich, the latter had expressed the opinion that the intramuscular injection would eventually be the only method used for the administration of salvarsan and neosalvarsan if a painless method could be devised. Personally, he had found the simple distilled water, which he employed for the intramuscular injections at first, extremely painful. He therefore modified the method by suspending the product in 3 c. c. of pure glycerin, to which was added 1 c. c. of a watery solution of some anesthetic, such as alypin and novocaine. There was thus produced about 4 c. c. of fluid which would go through a moderate-sized needle, and he found that with this there was usually comparatively little pain from the injection. It was his practice to make four punctures in the buttocks, two on each side, so that there was thus one puncture for each quadrant of the part. From 70 to 90 per cent. of the injections were comparatively painless. In making them it was important to avoid the ramifications of the sciatic nerve. Sometimes it would be found that while three injections were painless, the fourth would cause a very considerable amount of pain. In one instance an abscess had formed, in consequence of infection of the puncture. The great advantage of the intramuscular method was, as he had said, that its effects were much more permanent than those of the intravenous. In cases in which he had employed intramuscular injections of salvarsan more than two years ago, he had found that there had been no return of the disease. But in a disease like syphilis this was far too short a period on which to base any conclusions as to the completeness of the cure. It was only after long years of waiting that the question could be definitely settled, and it was entirely unfair to both Ehrlich and Wassermann to speak of a "cure" after one or two months of treatment, even though the Wassermann reaction be negative.

Dr. Fox, in closing, said he had been pleased to hear of Dr. Fordyce's experience with the intensive treatment, and to learn that in one of his cases he had given as many as eighteen doses of salvarsan, old and new. It seemed to him probable that by the use of massive doses the best results were to be obtained. Dr. Gardner was right, he thought, in regard to ambulatory patients. It was entirely safe to treat a patient at one's office or in the dispensary, and then let him go home. Dr. Wolbarst was quite justified in considering it culpable to cut down upon the vein. The needle should be inserted directly through the skin, when possible, as the scars resulting from cutting down upon the veins were often unsightly, as well as compromising.

**The Massive-Dose X-Ray Method of Treating Skin Diseases.**—Dr. George M. MacKee made an address on this subject. He prefaced his remarks by stating that the former term, "single-dose method," was too misleading

and spectacular. The question of a suitable name for the method had been discussed at a recent meeting of the New York Roentgen Society. Three terms had been considered, namely, single-dose, massive-dose and measured-dose *x*-ray method. The preference had been given to the second title. The remarks would be limited to a description of the method as employed in the treatment of dermatological disorders. Holzknecht, Kienböck, Benoist, Sabouraud and Niré and others deserve the credit of making it possible to measure the dose of the *x*-ray administered. The speaker disclaimed any originality in the work, with the exception of a few pertinent suggestions and a few modifications in technique. The method consisted of judging the dose of *x*-ray required to cure a given lesion of the skin and to administer this dose at one sitting. Occasionally, as in hyperidrosis and keloid, the curative dose was so large as to preclude its administration in one treatment, on account of the severe reaction that would follow. In such instances the dose could be divided into two or three treatments. As a matter of fact, however, there were comparatively few cutaneous disorders, if amenable to radiotherapy at all, that could not be controlled by one application of the ray. The technique consisted of measuring the quality of the ray by the use of the Benoist penetrometer, the parallel spark-gap, and the milliamperometer. The quantity of the ray was estimated by the Holzknecht radiometer. The various instruments employed in the technique were demonstrated by lantern slides. The speaker then considered the dermatological diseases that were amenable to treatment by this method. Lantern slides were shown of epitheliomata, lupus vulgaris, tinea tonsurans, tinea barbæ, inveterate localized eczema and psoriasis, verruca, cornu, corns, etc., that had been cured by one treatment. Examples of keloid and hyperidrosis that had been cured by from two to four treatments were also demonstrated. He was of the opinion that if every dermatoloical clinic of the Department of Health would institute a modern radiotherapeutic department and would epilate the entire scalp in every case of ringworm that the disease would soon be very uncommon, as was the case in France and England. The following hypothesis was offered in explanation of the good results obtained in epithelioma: The former fractional-dose method caused the application of a much greater quantity of ray than was necessary to effect a cure. This produced a localized immunity to the ray; in other words, by the oft-repeated, small doses the malignant cells were taught to resist the beneficial influence of the ray. With the new method, on the other hand, only the exact quantity of ray necessary to produce a cure was administered. In conclusion, Dr. MacKee said he desired to thank Dr. Fordyce, to whom he had the honor to be a clinical subordinate at the New York University and Bellevue Medical College, for his kindness in allowing unlimited opportunities for research work.

Dr. James McFarlane Winfield said that he had not had any personal experience with the single-dose administration of the *x*-ray, although he had used radiotherapy in his dermatological practice for many years, and that latterly he, with many other cutaneous specialists, had not used it as much as formerly, because of the uncertainty of its action, unless all of the scientific improvements were understood and employed. He felt that Dr. MacKee deserved a great deal of credit for bringing this method of administration of the ray to the notice of the profession, for while this method was used in Europe, Dr. MacKee was the pioneer in this country. The demonstration of the evening had made the matter so clear that it would seem as though any one who was inclined to treat disease by the ray could have derived a great deal of information. There were a few points he wanted to emphasize. Radiotherapy should only be practised by those expert in radiotherapy. This was a distinct branch of *x*-ray technic and it had been demonstrated many times that an expert radiographer was not necessarily a good radiotherapist. It was also essential that one practicing radiotherapy should be a thoroughly trained physician. It was not safe to entrust our patients to one who simply knew how to run the *x*-ray and since nearly all of the diseases that were treated by the ray were dermatological, either the operator should be one trained in dermatology or the cases should be under the direct supervision of one so trained.

Dr. Fred Wise said that his experience with the method had been limited. He had, however, used to some extent the Sabouraud pastiles and, like others in the United States, followed the rules laid down by the European authorities. He thought Dr. MacKee was altogether too modest in his statements. He had certainly worked very hard in this matter, and deserved great credit for the results which had been accomplished.

Dr. John Remer, having referred to the technical management of the tubes employed, said that among the advantages of the massive-dose method were its painlessness and the slight amount of scarring. As a result of the ordinary use of *x*-ray treatment, a very disfiguring scar often remained, but with this method there was scarcely no scarring at all.

Dr. Joseph Friedmann said that the greatest difficulty was the matter of dosage. However, the methods described by Dr. MacKee, though not accurate, served our purpose at present. As a rule, he personally did not use single-dose treatment in cases of epithelioma, but small and repeated doses. In some instances single-dose treatment caused severe burns, which were very painful and healed with difficulty. In May, 1910, he had presented at the New York Post-Graduate Medical School sixteen cases of cured epithelioma, in patients ranging from 45 to 80 years of age; and in from six months to a year he had had five recurrences. At the Post-Graduate they had had good results in treating epithelioma, as about 90 per cent. of cases were cured. For the past two years he had found that under the employment of thorough fulguration, followed by *x*-ray treatment, the cure of this condition was more rapid. In epithelioma with glandular involvement of an inflammatory nature the *x*-ray was best, but if the glands showed malignant degeneration it was preferable to use the knife first, and then the *x*-ray. At the Mount Sinai Hospital Dispensary excellent results had been obtained in trichophytosis capitis. One single *x*-ray dose was given, a Sabouraud pastile being employed until complete color change was present, namely, from greenish-yellow to dark brown, which usually occurred in from twelve to eighteen minutes. Sometimes, however, he discontinued the application before the color change was entirely completed. During this procedure the head was covered with a rubber shield having an opening a little larger than the diseased area, which shield also covered the shoulders of the patient. If the disease were very extensive, different areas were treated separately, and after the epilation was complete he was accustomed to order the use of oleum rusci and oleum olivae, 1 to 3, to be applied with the skin brush every night, to stimulate the circulation. For warts he employed fulguration, without any *x*-ray treatment, and with excellent results. If they were large, and with a broad, flat base, he applied, before the fulguration, a 20 per cent. solution of potassium hydroxide. This procedure was less painful and easily destroyed the growth.

Dr. MacKee, in closing, said that Dr. Winfield had brought up a very important point. The speaker had made the remark that the radiotherapeutist, to obtain and maintain the confidence of the medical profession, and especially that of the dermatologist, in the *x*-ray treatment of the cutaneous affections, must be well versed in dermatology. Cases were frequently referred to the radiotherapeutist with a diagnosis of cutaneous tuberculosis, epithelioma, etc., and which turned out to be syphilis, blastomycosis or some other affection. For the purpose of statistics, scientific observation, and treatment, it was necessary, the speaker said, to establish the diagnosis before treatment was instituted. Dr. Winfield's suggestion that the dermatological cases be submitted to a dermatologist for diagnosis before going to the radiotherapeutist was a very good one, and opened the field to all who made a specialty of radiotherapy. In the time at his disposal it had been impossible to more than outline the massive-dose *x*-ray method. For those who were interested enough to attempt its use he would advise experiments in radiography in order to become thoroughly familiar with the various types of exciting apparatus used and with the physical properties of the *x*-ray. The next step would be to carry out *x*-ray biological experiments on animals, and finally to become thoroughly familiar with the special measuring apparatuses before attempting to treat the human being. The massive-dose method required a great deal of attention to detail of technique, as well as watchfulness, judgment, and common sense; it required years, the speaker said, to develop a radiologist. If the technique were correct the method was sufficiently exact for all practical purposes, but it was far from being foolproof. The speaker had had seven years of experience with the method. At first only a few cases were treated each year because of inferior apparatus, but in the last three years all his dermatological cases which had received *x*-ray treatment had been given the benefit of the massive-dose method. Not only was this method of administering the ray more scientific, but the results were superior to the former fractional-dose method. In regard to the treatment of ringworm of the scalp, he was convinced that it was necessary to epilate

the entire scalp in nearly every instance. This could be accomplished in four exposures at a single sitting. It was not possible to epilate the entire scalp with one exposure, on account of the convexity of the skull. By dividing the scalp into four parts the slight convexity in any one field would not be enough to seriously interfere with the equality of the dose. In private practice a patient having a small and localized ringworm of the scalp need not necessarily be completely epilated. In such a case the mother would have intelligence enough to prevent the diseased hairs from mingling with and infecting the hair of other portions of the scalp, but in dispensary work the speaker had found it absolutely essential to epilate the entire scalp at the first treatment. In cases where there was only a single lesion and this was the only area epilated, and the disease later became disseminated, as it usually did, and where the new hairs in the cured area had become reinfected, it was necessary to wait several weeks before it would be safe to epilate the entire scalp, for fear of obtaining a permanent alopecia. In the meantime the little patient would be a constant menace to others. Unquestionably the proper thing to do was to epilate the entire scalp of every charity patient afflicted with tinea tonsurans unless the disease showed an unmistakable tendency to remain localized, as was sometimes the case, particularly in children near the age of puberty. The speaker said that he would like to have gone into the massive-dose method of treating internal disorders, and to have discussed the filtered ray and the dehematization of the skin, but time had not permitted the introduction of these subjects.

## Books Received.

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DAS ZWEIKINDERSYSTEM. By Dr. Julius Wolf. 36 pages; paper; price, 1 Mk. August Hirschwald, Publisher, Berlin.

SKIN GRAFTING. By Leonard Freeman, B.S., M.A., M.D. 139 pages; illustrated; cloth; price, $1.50. C. V. Mosby Company, Publishers, St. Louis.

SEMI-ANNUAL REPORT OF SCHIMMEL & CO.

DISEASES OF THE THROAT, NOSE, AND EAR. By W. G. Porter, M.B., N.Sc., F.R.C.S. 275 pages; illustrated; price, $2.50 net. William Wood & Company, Publishers, New York.

PATHFINDERS IN MEDICINE. By Victor Robinson. 317 pages; illustrated; cloth; price, $2.50. Medical Review of Reviews, Publishers, New York.

A SYSTEM OF CLINICAL MEDICINE. By Thomas Dixon Savill, M.D., 942 pages; (third edition); illustrated; cloth; price, $4.00 net. William Wood & Company, Publishers, New York.

DIE EXSUDATIV-LYMPHATISCHE DIATHESE. By Dr. Paul Sittler. 111 pages; paper; price 3.50 M. Curt Kabitzsch, Publisher, Wurzburg.

UBER LAPARO- UND THORAKOSKOPIE. By Dr. H. C. Jacobaeus. 170 pages; illustrated; paper; price 6 M. Curt Kabitzsch, Publisher, Wurzburg.

BREWING. By A. Chaston Chapman. 128 pages; illustrated; cloth; price, 40c. net. G. P. Putnam's Sons, Publishers, New York.

THE PSYCHOLOGY OF INSANITY. By Bernard Hart, M.D. 176 pages; cloth; price 40c. net. G. P. Putnam's Sons, Publishers, New York.

THE INDIVIDUAL IN THE ANIMAL KINGDOM. By Julian S. Huxley. B.A., 167 pages; illustrated; cloth; price, 40c. net. G. P. Putnam's Sons, Publishers, New York.

UBER EINE UNRUHEERSCHEINUNG: DIE HALLUZINATION DES ANRUFES MIT DEM EIGENEN NAMEN. By Dr. Max Lowy. 131 pages; paper. Franz Dauticke, Publisher, Leipzig.

DIE BEHANDLUNG DER KNOCHEN UND GELENKTUBERKULOSE MIT ORTHOPÄDISCHEN MASSNAHMEN. By Dr. F. Oehlecker. 90 pages; illustrated; paper; price, 3 M. Curt Kahitzsch, Publisher, Wurzburg.

TUBERCULIN IN DIAGNOSIS AND TREATMENT. By Louis Hamman and Samuel Wolman. 381 pages; illustrated. D. Appleton & Company, Publishers, New York.

ESSAI SUR LE TRAITEMENT DES CYSTITES PAR L'ENFUMAGE IODE. By Dr. Gaston Farnarier. 45 pages; paper. Printed from *La Semoine Medicale.*

THE SURGICAL DISEASES OF CHILDREN. By William Francis Campbell, A.B., M.D. and LeGrand Kerr, M.D. 693 pages; illustrated; cloth; D. Appleton & Company, Publishers, New York.

VIAGGIO DA TRIPOLI DI BARBERIA. By Dott. Paolo Della Cella. 147 pages; paper. Citta Di Castello, Publisher.

PROGRESSIVE MEDICINE. Vol. XIV, No. 4. Edited by Hobart Amory Hare, M.D. and Leighton F. Appleman, M.D., 381 pages; illustrated; paper; price, $6.00 per annum. Lea & Febiger, Publishers, New York.

BUILDING A PROFITABLE PRACTICE. By Thomas F. Reilly, M.S., M.D., 290 pages; illustrated; cloth; J. B. Lippincott Company, Publishers, Philadelphia.

HEREDITY, EVOLUTION, AND VITALISM. By RONALD CAMPBELL MACFIE, M.A., M.B., C.M.; price $2.50 net; cloth; 302 pages. William Wood & Company, Publishers, New York.

THE INTERNAL SECRETORY ORGANS: THEIR PHYSIOLOGY AND PATHOLOGY. By Prof. Dr. ARTUR BIEDL. Introductory Preface by LEONARD WILLIAMS, M.D., M.R.C.P. Translated by LINDA FORSTER. Price $6.00 net; cloth; 586 pages. William Wood & Company, Publishers, New York.

A COMPEND OF HISTOLOGY. By HENRY ERDMANN RADASCH, M.Sc., M.D. Third edition; illustrated; cloth; 363 pages; price $1.25 net. P. Blakiston's Son & Co., Publishers, Philadelphia, Pa.

FORTY-THIRD ANNUAL REPORT OF THE STATE BOARD OF HEALTH, MASSACHUSETTS. Illustrated; cloth; 680 pages. Wright & Potter Co., State Printers, Boston, Mass.

A MANUAL OF IMMUNITY. By ELIZABETH T. FRASER, M.D. 199 pages; cloth; price $1.60 net. James MacLehose & Sons, Publishers, Glasgow.

LECTURES ON CLINICAL PSYCHIATRY. By Dr. EMIL KRAEPELIN. Revised and Edited by THOMAS JOHNSTONE, M.D., Edinburgh, M.R.C.P., London. Third edition; price $3.50 net; cloth; 368 pages. William Wood & Company, Publishers, New York.

TRANSACTIONS OF THE THIRTY-FOURTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION. Illustrated; cloth; 358 pages. Published by the Association, New York.

DIE KRANKHEITEN DER MUNDHÖHLE: DES RACHENS UND DER NASE. By Dr. L. GRÜNWALD. Price 12 Mk.; illustrated; cloth; 801 pages; third volume. J. F. Lehmann's Verlag, Munchen.

EXPERIMENTAL PHYSIOLOGY. By E. A. SCHAFER, F.R.S. Illustrated; cloth; 111 pages; price $1.35 net. Longmans, Green & Co., Publishers, London.

THE STORY OF A DOCTOR'S TELEPHONE. By ELLEN M. FIREBAUGH. Price $1.25 net; cloth; 239 pages. The Roxburgh Publishing Co., Boston, Mass.

SAFEGUARDING THE SPECIAL SENSES. By HENRY O. REIK, M.D. Illustrated; cloth; 123 pages; price 25c net. F. A. Davis Company, Publishers, Philadelphia.

HEALTH AND LONGEVITY THROUGH RATIONAL DIET. By Dr. ARNOLD LORAND. 416 pages; cloth; price $2.50 net. F. A. Davis Company, Publishers, Philadelphia.

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THE SOLDIER'S FOOT AND THE MILITARY SHOE. By EDWARD LYMAN MUNSON, A.M., M.D. 147 pages; illustrated. The U. S. Cavalry Association, Kansas.

A GUIDE TO THE DESCRIPTION OF MICROSCOPIC SECTIONS OF PATHOLOGICAL TISSUES. By O. C. GRUNER, M.D. Paper; price 35c; 20 pages. Published at Miss Poole's Bookroom, Montreal, Canada.

AN ATLAS OF THE DIFFERENTIAL DIAGNOSIS OF THE DISEASES OF THE NERVOUS SYSTEM. By HENRY HUN, M.D. 290 pages; cloth; price $4.00. The Southworth Company, Publishers, New York.

TRAITE DE L'EXAMEN DES CRACHATS. By FERNAND BEZANCON and S. I. DE JONG. 411 pages; paper; illustrated. Masson et Cie., Editeurs, Paris.

LA GROSSESSE EXTRA-UTERINE PRECOCE. Par le Dr. LUCIEN HENAULT. 134 pages; paper. Hayez, Imprimeur des Academies Royales de Belgique. Bruxelles.

SURGERY FOR DENTAL STUDENTS. By ARTHUR S. UNDERWOOD, M.R.C.S., Eng., L.D.S., Eng., and BAYFORD UNDERWOOD, M.B., B.S., London, L.R.C.P., M.R.C.S., Eng. 244 pages; cloth; price $1.50 net. William Wood & Company, New York.

THE CARE AND TREATMENT OF EUROPEAN CHILDREN IN THE TROPICS. By G. MONTAGU HARSTON, M.D., London, M.R.C.S., Eng., L.R.C.P., London, with introduction by Sir PATRICK MANSON, G.C.M.G., M.D., LL.D. 232 pages; illustrated; cloth; price $3.00. William Wood & Company, New York.

## Therapeutic Hints.

**Treatment of Enuresis.**—M. T. Schnirer in presenting a summary of the modern treatment of this condition states that all possible reflex exciting causes should be investigated and those present should be removed. No fluids should be allowed in the child's evening meal. The foot of the bed should be elevated so as to raise the pelvis of the patient. The latter should be made to urinate before retiring and should sleep in the side position. Faradization of the bladder may be resorted to: one electrode may be placed over the hypogastrium and the other on the perineum or high in the rectum; or the latter electrode may be in the form of a metallic sound, covered up to the tip with caoutchouc, and introduced into the bladder. Massage of the neck of the bladder may be employed, the patient being in the knee-chest position, and the physician's finger in the rectum pressing at first lightly and later firmly toward the neck of the bladder. In certain intractable cases success has followed the use of epidural injections in the sacral region of 10 centimeters of a 0.6 per cent. solution of sodium chloride. The following represent some of the forms of medication that have been employed:

℞ Extr. belladonn., 0.10 gram.
Sacch. alb., 2 grams.
M. f. pulv. div. in dos. X. S. One powder t. i. d.

℞ Extr. belladonn.,
Nucis vomicæ, āā 0.08 gram.
Ferri hydroxidi, 0.4 gram.
Sacch. alb., 3 grams.
M. f. pulv. div. in dos. VIII. S. One powder daily. (Faure.)

℞ Fl. extr. rhoid. arom., 20 c.c.
S. 15 drops t. i. d.

℞ Ergotin., 1 gram.
Aq. destill., 70 c.c.
Syr. rub. id., 20 c.c.
S. One teaspoonful every 2 hours.

℞ Natr. brom.,
Ammon. brom., āā 2.50 grams.
Aq. destill., 100 c.c.
S. One tablespoonful to be taken in milk at night. (Heubner.)

℞ Extr. ergotæ, 0.2 gram.
Extr. nucis vomicæ, 0.1 gram.
Aq. destill., 5 c.c.
S. 10 drops two or three times a day. (Biedert.)

℞ Lupulin,
Ferri carbonat. saccharat.,
Sacchar. alb., āā 6 grams.
S. A tip of a knife blade t. i. d. (Gerhardt.)

℞ Strychnin. nitrat., 0.02 gram.
Aq. destill., 10 c.c.
S. One-fourth to one hypodermic syringeful to be injected beneath the skin over the sacrum. In children the initial dose should be 2 drops.—"Taschenbuch der Therapie."

**Treatment of Coryza in the Newborn.**—P. Rudaux, A. Grosse, and V. le Lorier recommend in the case of a simple coryza the instillation into each nostril, night and morning, of several drops of the following solution:

℞ Eucalyptol, 0.05 gram.
Sterilized liquid vaselin, 30 grams.

Menthol particularly should be avoided.

In the case of a syphilitic coryza the constitutional condition should be treated. In addition, there should be instilled into the nostrils three times a day four or five drops of a mixture of one part of hydrogen peroxide and four parts of sterilized water. Two hours later there should be instilled into each nostril several drops of the following:

℞ Resorcin, 0.25 gram.
Sterilized liquid vaselin, 30 grams.

If the act of sucking is embarrassed Laurens recommends the introduction into each nostril of three or four drops of a 1 to 10,000 solution of suprarenal extract.—"Clinique et Thérapeutique Obstétricales du Praticien."

**Therapeutic Value of Camphor.**—J. D. Heard and R. C. Brooks have performed a series of clinical experiments in which they found that camphor injected subcutaneously in oil in doses as large as 50 grains failed to produce any definite effects. The variations in pulse and in blood pressure occasionally following the use of the drug were so inconstant as to make it probable that they had no relation to the medication employed. The failure of the drug to influence clinical fibrillation of the auricle in the human subject is only in apparent contradiction with the authors' and other laboratory observations that perfusion of the isolated cat's heart with camphor may remove fibrillation and restore coördinate contractions. The explanation of this apparent discrepancy is probably to be found in the fact that the dose was greater in the perfusion experiments than was possible in the clinical observations, and that in the former the condition of fibrillation in the normal heart was induced artificially. A further point to be considered is that different animal species and varying ages even of the same species show marked differences with respect to fibrillation. In the single laboratory experiment in which a stimulating effect upon the circulation was observed, the positive result was possibly due to the fact that the animal was emaciated and moribund, and that therefore it may not have been possessed of sufficient glycuronic acid to combine with the camphor. Therefore, while camphor may be an active agent in certain disorders in which there is an abnormally small glycuronic acid content, and while experiments indicate that the drug exercises a favorable effect upon the heart muscle which is poisoned by chloral, muscarine, or strychnine, nevertheless the authors believe that camphor should neither be relied upon as a cardiac stimulant nor feared as a toxic agent in the doses employed by them and under the conditions studied.—*American Journal of the Medical Sciences,* February, 1913.

**The Treatment of Flatulence.**—Huchard recommends the following:

℞ Naphthol,
Magnesium carbonate,
Powdered charcoal, of each, 5 grams.
Peppermint or anise oil, 2 drops.

This is to be divided into 15 capsules, one of which is to be taken before each meal.

Neusser's prescription is as follows:

℞ Bismuth salicylate,
Calcined magnesia, compressed powder, of each, 0.1 gram.
Powdered rhubarb root, 0.05 gram.
Powdered charcoal, 0.15 gram.
Rectified English peppermint oil, 4 drops.
Gum arabic, q.s.

This should be made up in a pill coated with sugar and talc. Five to ten pills may be taken in the course of a day.

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## Original Articles.

### THE RELATIVE VALUE OF LIVING AND DEAD TUBERCLE BACILLI AND OF THEIR ENDOTOXINS IN SOLUTION IN ACTIVE IMMUNIZATION AGAINST TUBERCULOSIS.

By KARL VON RUCK, M.D.,

ASHEVILLE, N. C.

While the value of any therapeutic or prophylactic procedure must, in the last instance, be determined by practical experience, it is nevertheless necessary to examine and to consider beforehand such evidence as may be available in order to guard us against disappointment and failure in the subsequent practical test.

Such an examination is all the more necessary when the procedure implies the use of bacteria and their toxins, and with them, as with the study of other poisonous substances, it has for a long time been customary to include experimental studies upon lower animals.

The attention which has recently been bestowed upon a claim of superior value of living though avirulent tubercle bacilli in the treatment of tuberculosis, has not been solely on the part of the general public or the popular press, if I may judge from the numerous requests for an expression of opinion which are coming to me from colleagues, who know that I have long been working on similar lines; and it is with a view of complying with additional requests for a more detailed exposition of the results of my studies and experimental inquiries as to the relative value of tubercle bacilli and their products for therapeutic and prophylactic purposes, that I have prepared the present paper, hoping at the same time that it may help others, not in a position to examine the subject personally, to arrive at an approximately correct opinion.

Products derived from tubercle bacilli in the form of the various tuberculins, and emulsions of their bodies have been in the hands of the profession for more than twenty years, and in hundreds of thousands of cases of tuberculosis they have been employed with more or less success, and not infrequently with failures while occasionally detrimental effects have been ascribed to their action.

Such an experience should not be surprising, when we bear in mind that in any case of demonstrable tuberculosis we are dealing with a disease in the course of the evolution of which important tissue alterations have already occurred, and that this is true even though we may in our clinical conception speak properly of an incipient or early stage, but by which we should mean clinical manifestations, rather than pathological states of the tissues involved.

Active immunization against an infectious disease, before it is contracted, may be a quite different proposition from that of active immunization after its clinical advent, and only in those which have a slow or chronic course, because the natural advent of protective or antagonistic reaction products is delayed, or because they are formed in insufficient quantities to bring about a spontaneous recovery, is the active method of value. Like in most chronic infections, so in tuberculosis, it is an active immunity against the life and the pathogenic action of the bacteria themselves which we seek to induce or augment.

I cannot here enter into details to show why it may be that there are many cases of tuberculosis which recover spontaneously, beyond stating that we assume that in such the necessary reaction to the specific bacillary substances occurs by reason of an increased sensitiveness on the part of the tissue cells, or it may be on account of their liberation and absorption in ample quantities, at a comparatively early stage of the disease. That such cases owe their recovery chiefly to the formation of specific protective bacteriolytic and germicidal substances we find support in the fact that these can be demonstrated in their sera by biological tests. Such a result is most frequent in that period of the disease in which there is as yet no evident destruction of tissue, or in instances in which the destructive lesion has been small and circumscribed. In either case we have reason to believe that bacillary products were absorbed into the circulation for but a limited period, or by a succession of such periods and that the intervals were long enough for the necessary reaction to occur. There are, however, many cases in which the resorption of the bacillary products is continued and massive, and others in which the simultaneous absorption of products from other pathogenic bacteria, associated and present in the destructive or ulcerative lesions, cause the organism to be overwhelmed and to prevent the necessary protective reaction, and so to say inhibit or suppress the formation of defensive antibodies. That this is the case can likewise be demonstrated by biological tests showing the presence of the related endotoxins or of the bacilli themselves in the blood for long periods of time, representing the so-called negative phase of Wright. The course of a given case depends, therefore, among other things, upon the resorption of products from disintegrating tubercle in which the endotoxins are present, and upon complicating associated infections with other bacteria, or both.

During the excessive or continued resorption of such products the specific protective antibodies, if present, and such as may form are chemically bound and united with the free endotoxins or bacilli in the circulation, and if we test such sera for amboceptor or lysis and demonstrate their presence,

it is not the actual amount produced, but only the excess which has not been bound. The endotoxins and tubercle bacilli which have thus united with the specific antibodies are disintegrated and their proteid substance is further reduced through the ferment-action of the complement. If this reduction is abrupt and massive, the organism is further endangered by the resulting reduction products which in small animals frequently cause their more or less rapid death from toxic shock. These reduction products are supposed to be toxic peptones, which are eliminated largely or entirely through the kidneys and account for the toxic action of the urine in tuberculosis as also in other bacterial diseases.

My observations and serum studies in the various clinical phases of pulmonary tuberculosis have supported me fully in the foregoing statements. They have further shown that with the advent of sufficient drainage and outward discharge a general amelioration occurs coinciding with the disappearance of the antigen (the endotoxin or the tubercle bacilli, or both) in the blood serum when tested against a standardized immune serum. The reappearance of bacteriolysis for tubercle bacilli may then be observed to occur, always slowly, reaching sometimes but small, at other times larger amounts, which stand in apparent relation, at least in part, with the nutrition of the patient and the rapidity of the improvement, but also with the state of the local lesions, their extent, and the continuance of complications. Not infrequently such an amelioration is followed by a reaccession of the excessive absorption of tubercle bacilli or of endotoxins, corresponding with renewal of tissue disintegration in the old or adjacent areas of softening or in a more distant locality.

Even with this concise statement of clinical observations the reader should have little difficulty in appreciating that active immunization is not always necessary, that if we resort to it at an inopportune period it will not only avail nothing but is liable to do harm, especially when the antigen is given in larger doses. He will also understand why it is that active progressive cases receive no, or but little, benefit from specific treatment, and why, on the other hand, I and others have observed such highly satisfactory results in that early clinical state of the disease in which tissue destruction is yet absent and in which no, or but very small amounts, of bacteriolytic and germicidal antibodies can be demonstrated in the patient's serum.

The results of my studies in more advanced cases give also a satisfactory explanation of the value of active immunization in instances in which, after tissue destruction and excavation, the active symptoms have subsided and in which we frequently fail to show a sufficient degree of immunity.

In the light of the observed fact that under any degree of immunity with or without apparent exciting causes, caseous and necrotic tissue, when present even though more or less encapsulated, may break down and thus lead to renewed absorption of bacillary products, we can likewise account for relapses, especially of advanced cases, and for the temporary or permanent loss of the previously present specific protective substances.

In external and other forms of localized tuberculous lesions of lymph-glands, bones and joints, and other parts, usually spoken of as surgical tuberculosis, my own observations correspond with those of others, that, as a rule, the advent of specific antibodies demonstrable in the serum occurs late or none at all are found, and that the massive absorption of endotoxins and tubercle bacilli from disintegrating caseous or necrotic foci rarely occurs, probably because on account of early peripheral lymphatic obstruction, or of earlier outward discharge, spontaneously or through surgical aid.

This class of cases is especially liable to derive benefit from active immunization, and the results are often brilliant and striking from a single large dose of the bacillary antigen, providing there is no necrosis or sequestrum of bone, and that any present products of disintegration of tuberculous tissue may have found a spontaneous exit, or providing that such exit has been secured surgically.

If we now proceed to the consideration of the method and of the antigen for the production or increase of active immunity, we may take it for granted that in tuberculosis we desire the antibacterial form, and with others we accept the fact that the body substances of the tubercle bacillus are necessary for its production.

The need of a certain interval between administrations for the gradual development and increase of the bacteriotropic and bacteriolytic substances, has been shown abundantly by Wright, these intervals depending on the size of the dose and being designed to afford time for the occurrence of the reaction by and through which these antibodies are formed.

As regards the particular form of the antigen there is one essential requirement, namely, it must represent all the body substances of the bacterium. In our case, then, of the bacillus of tuberculosis, and on account of the difficulties heretofore encountered even in their identification, to say nothing of their isolation in an uninjured and therefore active form, there have always been those who have insisted upon the use of the bodies of tubercle bacilli, dead or living, in order to assure the presence of all the endotoxins they contain, and the living form has been claimed by certain observers to be the most desirable, while there have been still others who held that virulence, either complete or attenuated, was likewise essential to success.

I cannot here cite the various authors who have advocated, upon one ground or other, one certain antigen as being superior to all others. The preparation of Robert Koch, known as Tuberculin R and his Bacillen Emulsion are examples of recognition of the need of all the bacillary endotoxins, and my own preparation which I gave out in 1897 under the name of Watery Extract of Tubercle Bacilli, and simultaneously with Koch's Tuberculin R, was prepared by me in like recognition and was supposed to represent the endotoxins freed from bacillary residue in solution.*

In the periods intervening to the present time these antigens have multiplied to such an extent that even a concise description of their preparation and claimed advantages would easily fill a small volume, but their value was urged chiefly upon results of clinical observations which, in the light of the pathology of tuberculosis and especially of phthisis, in the light of the occurrence of spontaneous immunity as mentioned heretofore, and in the further light of the fact that an untimely administration of

*Recent chemical studies of this preparation have shown that this is actually the case, even including the fatty extractives of tubercle bacilli which appear to be soluble in water. The relative proportion of the several bacillary constituents is, however, not such as to make this preparation fully efficient, there being an insufficiency of the nucleoprotein.

the most perfect antigen could fail or be even followed by harm, were necessarily contradictory, and their almost uniform failure in experimental use led some observers to take the position that a true immunity against tuberculosis had no existence in fact and was impossible of attainment.

All these questions are rapidly approaching a solution. The question whether or not true immunity could be produced against tuberculosis could be studied more accurately, clinically and experimentally, by the demonstration of specific antibacterial substances with the complement fixation test introduced by Bordet and Gengou in 1901, aided still further by its subsequent perfection by Wassermann and Bruck. Although the demonstration of a specific amboceptor gave no positive indication for actual protection or even for aid in the cure of tuberculosis, the admission has become general that the presence of specific antibodies and especially of amboceptor is at least indicative of an increased resistance, and gives support to the occasional successes of animal experiments.

As to the need of an antigen of living tubercle bacilli for prophylactic purposes, I may mention the introduction some years ago of "Bovo-vaccine" by von Behring and of "Tauruman" by Koch and Schütz for protective vaccination of young cattle. Both preparations represent living bacilli of human origin, as a rule but slightly or not at all virulent for that species of animals. For the value of endotoxins in solution and the necessity of the presence of certain fatty constituents of the tubercle bacillus, the critical, chemical, and experimental studies of Much and Leschke[1] may suffice to be cited.

Presuming that there will be no difference in opinion that a sterile, soluble vaccine, if equally efficient, is preferable for therapeutic as well as for prophylactic immunization to one that represents dead or living bacilli. I desire to call attention to the disadvantages that attach to the use especially of living tubercle bacilli for either purpose; some of which are also valid as regards bacilli that have been killed by heat, chemicals, or other methods of sterilization. Beginning with the least of them, we cannot determine with sufficient accuracy the content of the dose that we desire to give, a disadvantage which attaches to any emulsion or suspension, but which becomes greater with tubercle bacilli on account of their spontaneous clumping or agglutination. A further disadvantage, observed by all clinicians and experimenters who have used dead or living tubercle bacilli, is the liability to local necrosis and abscess at the point of injection, especially when larger doses are given, which support the view that the bacilli are absorbed, but slowly or not at all, at the point of their injection, and hence arose the necessity of adopting the intravenous method followed by von Behring and by Koch and Schütz, which, though itself no bar to the administration of a vaccine, is, nevertheless, a procedure requiring certain cautions and meets objections on the part of the individual to be treated.

Agreeing with others that in tuberculous subjects the power to disintegrate and thus to liberate the endotoxins of the tubercle bacillus, after its introduction dead or living, has been acquired by preceding liberations, however slight, of like endotoxins from degenerated or caseous tubercle in which the bacilli themselves have likewise degenerated or disintegrated, this power does not appear to be present in the normal animal and we therefore have no right to infer it in the nontuberculous subject when we desire to administer the antigen for prophylactic purposes; and in such subjects the evolution of immunity must be slow if it occurs at all, while likewise it is liable to be of slighter degree, unless all the bacilli have in time yielded their endotoxins. That this is the case I have demonstrated in 1896 and 1897 in the attempted immunization of a number of goats with an emulsion of living tubercle bacilli from an avirulent culture prepared in my laboratory. In none of these goats did I obtain an antitoxic or bactericidal immunity, but after killing them I found in their lungs and other organs enormous numbers of minute fibroid tubercle which microscopical examination showed to contain the unaltered tubercle bacilli, undoubtedly representing the antigen that had been injected in large doses and which had become encapsulated.

In subsequent and again in recent experiments I have further attempted the immunization of normal guinea pigs and rabbits with living and dead tubercle bacilli, with emulsions of my own and with that of Koch, and although I have succeeded after months of treatment, by the use of at first small and thereafter gradually increasing doses, in causing the formation of demonstrable quantities of specific amboceptors, I am still endeavoring to reach a degree of immunity sufficient to cause lytic power of their serum, or complement fixation with all of the several bacillary constituents. On the other hand I lost a number of such animals from degenerative processes in the liver and spleen when larger doses of the antigens were given subcutaneously, and local necrotic abscesses occurred in all instances, excepting when dead tubercle were used after their fats had been extracted. The intraperitoneal administration had to be given up because of fatal adhesive peritonitis which occurred even after a few and comparatively small doses. I conclude therefore that the normal organism of the lower animals, such as I have experimented with, has but little power to liberate the endotoxins from the bodies of tubercle bacilli and that it acquires this power only gradually, the same as is the case after epidemiological infection of the human subject, and I shall presume this to be the case in the nontuberculous human subject until the contrary has been shown. Like encapsulation has frequently been found in the tissues of cattle after the intravenous administration of bovo-vaccine and of tauruman and the varying degrees of immunity induced after their use may well be explained by the number of bacilli which became accessible or were eliminated or encapsulated in their tissues.

Inasmuch as living tubercle bacilli of the human type have been found in vaccinated cattle both in their tissues and in their milk, as long as three years after their intravenous injection, the objection to living tubercle bacilli as an antigen or vaccine for prophylactic purposes in the human subject is a valid one, and equally so for animals whose milk and flesh are used for human food.

A final and more formidable objection is, however, the danger of virulence. That this can recur in the case of tubercle bacilli the same as of other pathogenic bacteria is a well-known fact, and one or more passages of nonvirulent forms through susceptible animals is often ample to restore it. There are even those who claim success in causing reversion to a previous type, and an adaptation of virulence for animals for which the particular type was previously non-virulent.

A reduction in the degrees of virulence of laboratory cultures of tubercle bacilli is the common experience, and its entire loss for guinea pigs is not an infrequent observation. In the case of a human culture which had continued avirulent for seven years during my observation and which was avirulent when I received it, the virulence was reestablished after its recovery from a lymph gland in which no appreciable alterations beyond a certain degree of hyperplasia could be detected.

Passages of the mammalian or the avian type through ordinarily resistant, including cold-blooded animals, frequently cause an entire loss of virulence which is, however, not permanent. Thus Dubar found that he could adapt the human type to become pathogenic for fish, and was thereafter able to restore the virulence of the recovered culture for the guinea pig. The experiments of Auché and Hobbs,[2] Morey,[3] Sion,[4] Herr,[5] Dieudonné,[6] Weber and Taute,[7] Tsukiyama,[8] Jancso and Elfer,[9] Bertarelli and Bocchia,[10] and of many others with cold-blooded animals, including frogs, fish, blindworm, and turtle are relevant in the consideration of avirulence and of its more or less temporary character.

In now referring directly to Friedmann's claims[11] for the value of his living antigen in the form of tubercle bacilli recovered from a turtle, I take it that in the absence of contradiction on his part, in the discussion of his communication before the Berlin Medical Society, they are originally of the human type, according to the opinion of Piorkowski, who stated that he had isolated them himself in 1903, without in any manner questioning their non-virulence through the subcultures that must have been made since.

In the light, however, of the fact that many other creditable observers have noted the recurrence of virulence with like cultures it remains for Friedmann to show that his particular culture is permanently avirulent for the human subject, which he has, of course, not done, and which he is unable to do without resorting to the human experiment supported by autopsy. The test of avirulence for the guinea pig, while suggestive, is not conclusive and would not be, even if by passages through this or other animals, he had shown these to be resistant.

The ordinary duration of the life of a guinea pig is not long enough to show what might occur in the human subject, knowing as we do that an infection acquired in early childhood may not become manifest until in later periods of adult life.

We know that tubercle bacilli can continue, in a living state, in the tissues of animals without apparent pathogenic power for years, and we have ample evidence that this can be likewise the case in the human subject as shown by so-called latent infections, which after many years may become active and progressive. We must in the light of such observations conclude that though avirulent for long periods of time, the bacilli gradually adapt themselves to their host and acquire pathogenic power. To such a change the organism may itself contribute by metabolic changes in its own tissues, favored by intercurrent diseases, by trauma, or by nutritive disturbances, or the bacilli may acquire virulence by successive subculturing in the organism itself, *in situ* or after transport from a tissue highly resistant, to one that is less so.

It may, however, be presumed that Dr. Friedmann was in possession of ample and conclusive evidence to contradict at least most of the objections stated and others which might be suggested, before he inoculated several hundred infants and young children with his living bacilli, and that for their successful protection he will supply, in due time, other proof than the statement that "although some of them had been vaccinated a year before he made his communication, none gave evidence of scrofula." Valid evidence is the more necessary because none of the animals which he sought to protect with his living bacilli, resisted an infection with a but slightly virulent culture of tubercle bacilli, judging the degree of virulence by the length of time necessary to cause death of his control animals.

It being improbable that Friedmann will make the claim and supply proof that his bacilli have an associated action in the nature of causing complete sterilization of the tuberculous lesions by destruction of all other pathogenic bacteria that may be present, or that by other modes they act differently from all other tubercle bacilli in the production of a "cure," I take it that in the cases in which he has accomplished it, it was through the production of immunity, *i.e.* of bacteriolytic and germicidal antibodies, which developed in response to the administration of the antigen. If his special form of tubercle bacilli cause such a reaction, of which there need be no doubt, it is because of a correspondence in their receptor apparatus with that of the tubercle bacilli responsible for the disease, else there could have been no reaction and without such the injected bacilli would have represented nothing but foreign bodies, and would have undergone the same fate of removal or encapsulation, as did the foreign bodies in the form of cinabar, powdered hair, rubber, glass and the like, which were used in order to disprove Villemin in his classic experiments of many years ago.

Such a view is further justified in the experimental studies on the action of dead tubercle bacilli by Prudden and Hodenpyl,[12] Straus and Gamaleia,[13] Kraemer,[14] Panow,[15] Vissman,[16] Abel,[17] Delafield,[18] Auché and Hobbs',[19] myself and many others in which their fibroid encapsulation in the tissues of normal animals was the uniform result.

That an ample degree of immunity will result from even a single injection of living tubercle bacilli in *tuberculous* patients, especially if given intravenously, we need not doubt. We have, however, every reason to doubt that the results of such an immunity differ in any way from like degrees of immunity when induced more slowly, or with some other tubercle bacilli or antigens prepared from them, in the culturing of which there had been no passage through, or other relationship with a turtle.

The degrees of antibacterial immunity are not limitless and from other considerations it is perhaps fortunate that this is the case. It cannot be increased to degrees which have been shown possible in active antitoxic immunization, and when fully established against tuberculosis the serum of an immunized subject or animal has complete bacteriolytic power for the related bacilli and destroys their virulence. No further increase of specific amboceptors or lytic action appears thereafter to occur.

This then remains our measure by which we can determine the value of an antigen, and it would be gratifying if Dr. Friedmann had given some information on the results of his studies in this respect, instead of speaking only of uniform cures. Such information would likewise have made it impossible for Wolff-Eisner to oppose him in the

discussion of his paper on the ground of his work being lacking in scientific or even in a sufficient theoretical basis, and if he had likewise supplied it for the children which he vaccinated it would have saved him the strictures, which were made by competent men who seriously protested against his procedures in this respect, on account of lack of evidence of its value or its justification.

Whatever the individual conceptions of a cure of tuberculosis may be, and what Friedmann's own position in this respect is, matters little. We know full well that clinical cures are liable to be deceptive, not only in the advanced stage of phthisis, but even in external forms of tuberculous disease when apparent healing or cicatrization has occurred.

The meager information contained in Dr. Friedmann's professional communication of the nature, extent and forms of tuberculous diseases which he has cured, and the absence of statistical classification, usually supplied for clinical results, make their intelligent discussion or comparison with results obtained by others with specific or other remedies impossible. In this respect I hold, however, to what I have already stated in regard to the limitations of therapeutic immunization and of the benefits which it can confer, but I concede that in regard to the dose and mode of application of the "whole" antigen, Dr. Friedmann's method of intravenous administration may deserve further study, but with a degree of caution that will include the possibility of the development of more or less serious toxic symptoms in instances in which the injected antigen will meet with a highly lytic serum, as a result of spontaneous immunity which the patient might have acquired before; finding that we can thus kill our immunized laboratory animals, this caution is essential.

Coming now to the use of a non-living antigen in the form of the pure endotoxins of tubercle bacilli, I refer the reader to my preliminary announcement on May 1, 1912, of a practical method for prophylactic immunization against tuberculosis, especially in children,[20] and to my subsequent full report[21] in which I described my observations in greater detail. Without at all claiming that the vaccine there described was the only useful and practical one, I attributed its value to the presence of all the necessary constituents of the tubercle bacillus, obtained under precautions which assured the avoidance of their injury or modification. I have there also shown its safety and uniformity of action in producing a full and ample degree of immunity, so far as this can be at all demonstrated, and I described the mode of production of the vaccine in full details, enabling others to make a product identical with my own. I shall later refer to the nature of the proofs which I supplied.

About 300 additional children and adults have since been vaccinated and, as in the first series, their sera were examined for specific antibodies before and after the administration of the vaccine. Further animal experiments have been finished or are in progress, involving since May 1, 1912, the use of about 450 guinea pigs, over 50 rabbits and several calves and sheep, and upon the results of these continued observations I expect to report in detail when all the experimental work is completed.

The serum examinations and those of my animal experiments which are finished at the present time have given no materially different results from those reported last May, and none of the immunized and thereafter infected animals left over from my first series have given evidence of an existing infection. In the few animals which died from other causes their autopsy showed no evidence of tuberculous disease.

While I have so far abstained from the treatment of far advanced or otherwise unsuitable cases with my vaccine, and have not depended upon its administration in a single dose in otherwise suitable patients, in which the disease had advanced to a stage of tissue destruction, there were nevertheless a sufficient number of tuberculous subjects in my first series of cases and in those vaccinated since with a single dose, in which the results show that in the early stages of pulmonary tuberculosis a single dose appears to be ample to cause what may be termed a clinical recovery.

These cases may serve for eventual comparison of results, as concerns the early stage of pulmonary tuberculosis treated with a single dose when given subcutaneously and in case it should be shown that the intravenous method has advantages sufficient to consider it in the advanced stages of the disease, I have not the slightest doubt that, whatever these advantages may be, they will appear under the use of mine and of other whole vaccines, regardless of the absence of an associated history of the turtle or of another cold-blooded animal from the tubercle bacilli of which the antigens have been prepared. It is the method of administration of the antigen, the size of the dose, and the intervals between the doses, as practised by Dr. Friedmann, and not the derivation and nature of the antigen he uses, that may deserve consideration, in case it be shown that a larger per cent. of actual recoveries follow his method, in which according to nonprofessional sources he is not depending on a single dose. In my first report I have, however, also suggested that in my experience up to that time a few doses of my vaccine would suffice in the treatment of suitable cases, and I have since that time been able to confirm this further.

As to the therapeutic results observed I shall consider them in cases readily accessible to re-examination, in a semipublic institution where before and since they have been under the continued observation of Dr. C. A. Julian, the physician in charge. My observations in other cases, so far as I have been able to re-examine, correspond in all essentials with his. I quote from his report only such essentials as are relevant here, Dr. Julian expecting to publish his observations in greater detail himself.

The cases of interest comprise the tuberculous and probably tuberculous children vaccinated by me personally in 1911 with the assistance of Dr. Julian, and others whom he himself has vaccinated since. I deal with them separately because the results in the first series have been determined so long as fourteen months and in the second series only three months, after vaccinating.

Among the first series of 262 cases were 112 in whose physical and other examinations the evidence of tuberculosis was accepted as conclusive upon grounds of the usual diagnostic methods, including a positive reaction to a tuberculin test. In the 112 cases mentioned an extension of the disease to the lungs was shown by the presence of physical signs elicited by percussion and auscultation. In a large number of them the general condition was poor or unsatisfactory, catarrhal signs were frequently noted in the involved lung areas, a number of them

showed slighter degrees of fever, some had cough with or without expectoration, and in a few, tubercle bacilli had been found in their sputum.

Excepting seven cases in which, on account of the presence of evident destructive lesions in the lung or of other tuberculous complications, it was deemed prudent to administer the vaccine in small and increasing amounts, by giving from three to eight doses, there was noted last April a uniform radical change for the better in all respects, and I referred concisely to their improvement in my first report. Dr. Julian, who re-examined these cases last December, gives the following comparative increase in weight, fourteen months after their vaccination, for 109 between the ages of four and seventeen years, according as they were considered tuberculous, or only probably so, or had been found normal.

Tuberculous—Sixty-six cases; average gain 20 pounds; increase of body weight, 25.5 per cent.

Probably Tuberculous—Twenty cases; average gain, 13.8 pounds; increase in body weight, 24.2 per cent.

Normal—Twenty-three cases; average gain, 8.7 pounds; increase in body weight, 12.9 per cent.

To show the influence of vaccination in 112 cases upon physical signs in pulmonary involvements, the results of their preliminary examinations may be classed as follows:

| | Cases. |
|---|---|
| Signs marked in both lungs | 32 |
| Signs marked in one lung, slighter in the other lung | 28 |
| Signs of slighter degrees in both lungs. | 8 |
| Signs marked in one lung only | 22 |
| Signs slight in one lung only | 15 |
| Signs indicative of destructive lesions, or progressive | 7 |

As to his re-examinations after fourteen months, I quote verbatim from Dr. Julian as follows:

"The results of their physical examination made by me last December and therefore fourteen months after their vaccination corresponded in practically all the nonactive or so-called latent affections with those made last April, while in the cases classed as having destructive lesions in their lungs or otherwise pursuing an active course and in which marked amelioration and retrogression of physical signs had been found last April, the evidence to this effect is now more marked still.

"Excepting one case in which other than tuberculous disease accounts for an unsatisfactory state of health all these children are in excellent physical condition, those who apart from their lowered state of nutrition had also shown symptoms, like fever, cough, and expectoration have lost them at an early period and have remained free from them ever since. In twenty-seven cases in which the physical signs were of slighter degrees, nothing abnormal can now be shown either by percussion or auscultation. There is no evidence of apical catarrh in any case. In instances, however, in which the physical signs were marked, some degree of diminished resonance can still be shown in small and circumscribed areas over which the respiratory sounds are not perfectly normal, the inspiratory sound being either weaker or lacking in vesicular quality quantitatively, often with a harsh element coexisting or predominating. The other and adjacent parts which had previously given abnormal signs show no change from normal. In quite a number of these cases there is now more or less marked subclavicular retraction, corresponding with the area of diminished resonance and of abnormal respiration which in extent is very small, as a rule not exceeding 1 inch in diameter. I am therefore of the opinion that the present findings in all such cases are indicative of lesions which have undergone a process of healing and cicatrization corresponding as they do with signs generally accepted as of such import, and I am the more certain that this interpretation is the correct one, inasmuch as none of them have reacted either locally or generally to a subcutaneous tuberculin test which I applied about a month ago, whereas a like test applied before their vaccination was positive in every case in which it was made.

"Physically and clinically these children have all made a complete recovery after a single dose of the vaccine and with the one exception stated they are in perfect health."

Enlargement of lymph glands was found in eighty-four of the pulmonary and in eighty-two others, making a total of 166 cases. One or more of the cervical, axillary, or inguinal groups participated in the order named.

| | Cases. |
|---|---|
| One group only | 12 |
| Two groups | 97 |
| Three groups | 15 |
| Four groups | 38 |
| Five groups | 2 |
| Six groups | 2 |

Re-examination after fourteen months gave the following results:

| | Cases. |
|---|---|
| Not examined | 6 |
| No enlarged glands in any group | 153 |
| Enlargement found of one or two groups | 7 |

The difference in body weight three months after vaccination in 110 cases of the second series are as follows:

Tuberculous—Thirty-six cases; average gain, 10.1 pounds; average increase, 16.1 per cent.

Probably Tuberculous—Forty-eight cases; average gain, 13.8 pounds; average increase, 13.9 per cent.

Normal—Twenty-six cases; average gain, 3.6 pounds; average increase, 4.3 per cent.

In regard to physical signs on the part of the lungs there were thirty-one among the tuberculous, as a rule children between the ages of twelve and sixteen years, who presented evidence of lung involvement. In twenty-six the lesions corresponded with an early stage. In five children the lung affection was more advanced.

| | Cases. |
|---|---|
| Signs marked in both lungs | 2 |
| Signs marked in one lung, slighter in degree in the other | 8 |
| Signs slighter in degree in both lungs. | 2 |
| Signs marked on one side only | 12 |
| Signs slight on one side only | 2 |
| Signs indicative of destructive lesions. | 5 |

I again quote from Dr. Julian as to his findings three months later as follows:

"The result of my re-examinations made three months after vaccination show that in ten cases all physical signs have disappeared and in instances in which slighter signs indicated an extension to the

opposite side, these have also disappeared. In all the remainder excepting two of the advanced cases, which are still under treatment and are also much improved, the physical signs have almost completely disappeared being now limited to very small areas; in cases in which catarrhal signs were previously recorded these have disappeared. The respiratory sounds in these circumscribed localities are rather weak or lack in the unmixed vesicular element, while the percussion note is not as fully resonant as it is on the opposite side. All previously present symptoms have disappeared, the temperature is normal in all, and the general condition of nutrition, strength and sense of well-being is good.

"A tuberculin test, previously positive in all cases classed as tuberculous or suspected to be so, and made again in January, is still positive in six cases, three of them, having previously shown physical signs and slight subjective symptoms, were vaccinated with a single dose, the fourth case had been further treated and has since been dismissed, and the other two cases are still under treatment."

In regard to enlarged lymph gland, such were found in eight of the pulmonary cases and in thirty-two of the tuberculous or probably tuberculous classes, making a total of forty cases and involving:

| | Cases. |
|---|---|
| One group | 2 |
| Two groups | 31 |
| Four groups | 5 |
| Six groups | 2 |

Of the results of his re-examinations Dr. Julian states that he has been unable to find glandular enlargement in any of the cases after a most thorough search.

I have heretofore stated that my observations upon children and adults vaccinated in Asheville with a single dose or with several small doses in whose cases I have had an opportunity for re-examination gave practically the same result.

In all of Dr. Julian's cases as well as in those re-examined in Asheville, the sera were again examined and the examinations were repeated until the specimen showed the proper coincidence in complement fixation, as explained in my first report, sufficient to show an unmistakable lytic action upon virulent tubercle bacilli *in vitro*. It was not always possible to continue these examinations long enough on successive days to show complete disintegration of tubercle bacilli to the granular state, but when this could not be shown in the first or second test, it was always possible to do so when the examinations were continued further.

So far as animals could be spared, the bacteriolytic test was controlled for destruction of virulence before and after the administration of the vaccine, and since May 1st over 100 animals have been used for this purpose in new cases and in re-examinations of others vaccinated in 1911.

Concerning the evidence available at this time, I can anticipate my next full report with the statement that I have as yet not been able to note the complete destruction of virulence or a marked degree of bacteriolysis *in vitro*, with sera taken before vaccination, or from untreated patients, although a marked difference is evident in the duration of life of the animals in favor of sera which show a trace of lysis *in vitro*.

This difference I am able to overcome, in part at least, by using a highly virulent culture of tubercle bacilli, which kills the control animals between the twentieth and twenty-fifth day, and with this culture I find that the lysis *in vitro* must be complete to prevent the development of tuberculosis in animals infected with the residue of the lytic tube. For assurance of the complete resistance of immunized animals to infection with the culture spoken of, I likewise find that their immunization must be carried further than appeared necessary with the culture used in my first series of experiments, which required twice the time, *i.e.* six to seven weeks, to kill the controls. To know beforehand that this degree of immunity is present or that the animal will surely resist, its serum must first be tested for its lytic action and a degree of complete disintegration of the bacilli must be in evidence.

In closing, I believe that I have the concurrence of all students of immunity in tuberculosis, that with the evidence now before us there is no apparent advantage to be expected from the antigen for which Friedmann has made his remarkable therapeutic claims.

That a vaccine such as I have described, consisting of the extractives of tubercle bacilli in suitable combination and proportions, representing all the endotoxins essential for active immunization, is ample and sufficient, I believe I have supplied good evidence in its prophylactic, as well as in its curative aspects, and I am at a loss to know how it could be augmented or made more conclusive than it is, and I summarize this evidence as follows:

1. That after the administration of a single full dose of the vaccine all the specific antibodies including the several amboceptors can be demonstrated in the blood serum of every case, with the whole and with all partial antigens, after the fourth or fifth day, and that these antibodies suffer no quantitative diminution for periods up to twenty months.

2. That, under proper coincidence of complement fixation with the several partial antigens, such sera have a maximum bacteriolytic power *in vitro* sufficient to cause complete disintegration of the bodies of virulent tubercle bacilli to a state of granules and free fats; and *in vivo* to cause their complete destruction to a degree that after twelve to twenty-four hours no bacillary residue is demonstrable under any method of staining.

3. That the sera completely destroy all virulence of the bacillary residue left over in the tubes used for bacteriolytic tests *in vitro*, and that properly immunized animals withstand the test *in vivo* as do also normal animals when a proper amount of the immune serum is injected at the time when the infection is made with virulent tubercle bacilli or when the latter have been exposed to its action.

4. That animals can also be immunized to a like degree, their sera showing the same bacteriolytic and germicidal action *in vitro* and *in vivo*, and that the immunized animals resist completely a virulent infection, quantitatively many times greater than is necessary to invariably kill the control animals.

5. That in over 150 cases representing the early stage of pulmonary tuberculosis a single full dose was invariably followed by what may be termed a clinical cure.

In my previous publications I have supplied all necessary proof in justification of the foregoing conclusions, excepting for the curative effect, for which I then felt that further observations were necessary for making a claim other than that the cases were improved.

The results of re-examinations made since, and the continued correspondence of further observations in equally large number of vaccinations and in much more numerous animal experiments up to the present time, make it improbable that these conclusions will require essential modifications in the future or in my next full report, to be made when the outcome of some experiments still pending can be definitely determined.

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## RADICAL AND CONSERVATIVE METHODS IN OBSTETRIC TREATMENT.*

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When your chairman invited me to read a paper of not over twenty minutes' duration on some practical subject it was quite natural that I should choose a topic which personal experience had impressed me as of importance and upon which I could therefore presume to speak with some slight degree of assurance. Some of the views about to be stated are entirely personal, although largely based on results obtained in the service of the Lying-In Hospital.

In the advances which have been made in medical art and science during recent years, radical therapeutic tendencies have become very manifest. This is true in obstetrics as in other branches of medicine, and we often find the purely obstetrical methods superseded by those which are characterized by an undoubted surgical tendency. For many years obstetrics was considered a branch of medicine rather than of surgery, a branch which was relegated to the background as one of those adjuncts of medicine which had to be practised as a matter of necessity rather than of choice. In fact, it is only within comparatively recent years that operative obstetrics has assumed the importance which it deserves, and the brilliant results obtained have attracted the interest and services of many men whose inclinations are surgical rather than medical. This is in many respects an unfortunate tendency, as it has often resulted in a desire for greater haste in the conduct of a delivery, and has often been productive of doubtful judgment in the numerous complications attendant upon pregnancy, labor, and the puerperium.

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It is my purpose this evening to discuss briefly some of the commoner obstetrical procedures, from both the conservative and radical standpoints, although it must be admitted that the matter is too extended and important to be more than superficially referred to in a limited paper of this kind.

To be prepared is to be forewarned and nowhere is that better shown than in the diagnosis of the details of a pregnancy and an exact knowledge of the prognostic features in every individual case.

Let us begin, therefore, with certain essentials in the examination of pregnancy in its earlier stages. It is here that I would urge a radical view in contrast to what ordinarily obtains among patients, and, it is to be regretted, among many physicians.

A woman should place herself under the care of a physician as soon as pregnancy is suspected, and at this first interview her previous general history should be gone into, supplemented by as extended a physical examination as may be deemed essential. There are several conditions which present themselves at this time that need to be mentioned if only for the purpose of calling attention to the necessity for exercising greater care in their conduct.

The ordinary nausea and vomiting of the early months of pregnancy must be carefully differentiated from the extreme and pernicious variety. We know enough about the latter to attribute it to a toxic basis and its treatment therefore should be founded on comparatively radical lines, including absolute rest and quiet for the patient, stimulation of the emunctories, complete withdrawal of mouth feeding and the substitution of nutrient enemeta, careful urinary analysis with special attention to quantity, specific gravity, and the tests for acetone, indican, diacetic, and oxybutyric acids; and finally the induction of abortion, when necessary, before the patient gets too weak to withstand the shock which usually attends even this operation in a woman exhausted by continuous vomiting and the attendant starvation and toxemia.

The treatment outlined may be called radical and stands in sharp contrast to that dependent upon the administration of a variety of sedative and other drugs, together with continued but usually futile attempts at mouth feeding. On the other hand, if associated with such vomiting we find a displaced and perhaps incarcerated uterus, this must be restored and held in position by a pessary.

The differential diagnosis between intra- and extrauterine pregnancy, when called for by the intervening symptoms, is of greatest importance, and in the presence of the latter condition no palliative measures should be tried but resort had at once to a radical operation, as the possibility of rupture with fatal hemorrhage is always imminent. If rupture has already taken place there is only one variety, the intraligamentous, which might obviate immediate operation, but even this is usually so uncertain

in diagnosis that palliative or conservative measures are of doubtful value.

Our attitude, whether conservative or radical, in the presence of an abortion, must depend entirely on the particular case in hand. In the threatened variety conservatism is the rule—rest, sedatives, etc.,—but in the incomplete type a more radical stand is necessary. In my personal contact with a considerable number of cases of miscarriage in private practice, and a very much larger number in the service of the Lying-In Hospital, I have seen but three complete extrusions of the early ovum. It is rare that the products of conception are entirely eliminated from the uterus, and this means that the retention of a portion of the same is likely to lead to trouble. A radical treatment is therefore indicated, which I merely desire to refer to as consisting of a thorough curettage of the uterine cavity, conducted under the most careful aseptic and technical auspices in every incomplete case, except in the presence of evident septic infection. The good results of this radical method of treatment are well demonstrated by the favorable mortality and morbidity statistics in 3500 abortion cases from the Lying-In Hospital service, recently collected by Ross McPherson (*Bulletin of the Lying-In Hospital,* Vol. viii, No. 4), in which 85 per cent. of the total number required curettage for retained secundines.

Taking up next a feature of pregnancy which does not usually meet with sufficient consideration, I desire to call attention to the necessity of making a complete abdominal and vaginal examination of every pregnant woman between the seventh and eighth month, for the purpose of determining whether any pelvic dystocia is likely to interfere with the labor. This should be done even in multiparæ with a history of previous normal labors. It necessitates careful external and internal pelvic measurements, and in no instance, either in private or hospital practice, have I found any objection on the part of the patients if the purposes of the same were explained to them. It is extremely important to recognize a contracted or otherwise deformed pelvis before labor, as a favorable outcome depends on the institution of proper measures at as early a date as possible. We must estimate not only the true conjugate diameter of the pelvic inlet, but also obtain a definite idea as to the presence of any lateral contraction or a diminution of the diameters of the outlet. In a great many cases the anteroposterior diameter at the brim will be found to measure ten centimeters and over, whereas there may be a considerable flattening from side to side or a marked narrowing of the pubic arch. The former will prevent engagement of the head except in the case of a small child, and the latter, if unrecognized, may delay delivery for many hours, with final death of the fetus and the production of extensive lacerations of the maternal soft parts. In the presence of these deformities, as well as in the generally contracted varieties of a minor degree, the so-called borderline cases, it is necessary to use the greatest skill and judgment in determining the proper course of procedure. In view of the possibility of a spontaneous labor in the face of obstructions on the part of the mother, a conservative attitude may seem desirable, and yet in how many cases do we find after an exhausting labor of many hours that very little advancement has taken place and the condition of the patient and the baby demands a hurried delivery? Pituitrin has been favorably spoken of in such cases, but in my own somewhat limited experience I have not been sufficiently impressed by this preparation to place much reliance upon it in the particular class of cases noted. It would seem advisable, therefore, not to depend too long on the natural forces for a satisfactory completion of the labor under such circumstances.

The immediate variety of delivery to be adopted depends somewhat on the conditions at hand. With a head firmly engaged in the brim and no progress after several hours of good pains, when a period of rest secured by morphine fails to strengthen the uterine contractions, then a high forceps extraction may serve our purpose. We should proceed very cautiously, however, before doing the same, and we must be certain of our technical ability in such cases.

The only instrument which is really safe in this particular condition is the Tarnier axis traction forceps, and in making an application of the same we must be particularly careful in our diagnosis of position, so that the application may be made most advantageously for the child. Brute force should never be exerted in such traction efforts, and the pull must be directly with the forearms of the operator, rather than with the trunk and the legs braced up against the operating table or the bed. If this or any other forceps extraction is resorted to a patient should always be placed on a table and the legs held by assistants or by a leg holder, the precaution having previously been taken to anesthetize the patient before putting her into the lithotomy position.

We are sometimes misled in such cases as to the "moldability" of the fetal head, and should not therefore persist too long in our efforts at extraction by this means. A dead child is only too often the result. Conservatism should in such cases always give way to a more radical attitude, where the circumstances demand the same, and this change should not be delayed so long that the chances of life for the child are greatly diminished. Where we have a moderate degree of pelvic contraction, particularly if this involves the outlet, and a living child with a large head is present, the operation of pubiotomy offers the best chance for a living child without endangering the life of the mother to any great extent. In making this statement I admit that such a procedure under these circumstances should not be resorted to without deliberation, but if we have given the woman every other chance and a living child is still present, it is preferable to resort to this operation rather than sacrifice the child to a craniotomy. The details of the operation for dividing the pubic bone I need not go into here, but the experiences of recent years seem to favor greatly an increased employment of the procedure. It is particularly applicable in those cases where there is a history of very difficult previous labors, with the production of stillbirths or fractured fetal skulls, and in protracted cases the chances of a dangerous or fatal septic infection for the mother, especially if numerous vaginal examinations have been made, is greatly reduced.

In the presence of a flat pelvis with poor engagement of the head, particularly in a multipara with a relaxed uterus, the production of an internal version, carefully done, will often result in a successful delivery, whereas a waiting policy may have resulted disastrously for both mother and child. I might refer in this connection to a series of ten

internal versions done during one of my recent periods of service in the Lying-In Hospital, with only one fetal death and that due to a prolapsed cord. Although somewhat radical, I believe that in cases of slight pelvic contraction, particularly in multiparæ, internal podalic version offers a better chance than the high forceps, as it is readily carried out and less danger of producing injury to the fetal head is probable. It is acknowledged that fractures of the clavicle or humerus are not unusual or unimportant in these cases, but they are readily treated and less dangerous than fractures in the cranial bones produced by the application of the forceps. I do not advocate a general adherence to this procedure in cases where the true conjugate measures less than 8½ or 9 centimeters, or in primiparæ, particularly if during the preliminary examination under an anesthetic it was determined that the head was too large to engage. In such cases an abdominal cesarean section, if performed early enough, would certainly afford the woman and child a better chance than either forceps or version.

The operation of pubiotomy in connection with these cases I have already referred to. Where a tonic contraction of the uterus is present, however, we must proceed with great caution in doing a version, and I have met with several cases of rupture of the uterus as the result of version done by men who have not been careful in formulating their indications before doing the operation.

In the matters referred to in the last few paragraphs a radical rather than a conservative attitude is urged, but here as elsewhere, care and good judgment is indicated, with a capacity for doing the particular procedure demanded.

Another subject which demands our most careful decision regarding conservative or radical treatment is that of the toxemia of the later months of pregnancy, ordinarily known as eclampsia. It is here that at the present time the profession is still very undecided as to what course to pursue. We meet with the most extreme views on both the conservative and radical sides. A prominent American operator, Reuben Peterson, advocates cesarean section, either vaginal or abdominal, in every case of eclampsia where a convulsion is present. The other extreme stand is that taken by the well-known Strogonoff of St. Petersburg, who relies entirely on sedative measures to overcome this dangerous condition. Both schools have been able to bring forward very plausible theories and statistics to support their claims, yet it would appear as if an attitude which occupies a middle ground between the two extremes, with a tendency toward conservatism, will in the future show the best results.

The most recent contribution to the subject as to whether we shall employ active or expectant treatment in eclampsia, is that published by Lichtenstein of Zweifel's Clinic in Leipsig, in which since April, 1911, the expectant treatment for this condition has been followed. Venesection with the abstraction of not less than 500 c.c. of blood, combined with Strogonoff's sedative measures, were employed, and out of a series of eighty eclampsia cases there were five deaths (6.25 per cent.), although one of these patients died of peritonitis after attempts at forceps extraction, and two of inspiration pneumonia. Out of sixty-four viable children, thirteen died (20.6 per cent.) in contrast to 36 per cent. during the period of active therapy. During the last twelve months in which the conservative treatment was employed not a single eclamptic mother died in a series of sixty consecutive cases. In forty-seven cases out of this series the convulsions ceased as soon as the venesection was done and spontaneous labor occurred in fifty-three cases (66.3 per cent.) with the conservative treatment, in contrast to 22 per cent. with the other. Similarly favorable results are reported by Engelmann from the Dortmund Clinic.

Delivery by vaginal cesarean section is undoubtedly a very rapid method of extracting a living child, but ought we to be satisfied with such a procedure in view of the fact that eclampsia often comes on before term and that therefore the child frequently perishes within a short time after delivery, as it is poisoned by the same toxins which have affected the mother? It would seem advisable therefore that the radical treatment of this condition be modified and a middle course pursued, which means a combination of sedative and eliminatory measures with a resort when necessary to delivery by those methods which will do least to increase the shock to the mother. In most instances, however, we can disregard the life of the child for the reasons already stated. Delivery by gradual dilatation would seem preferable in most cases therefore to the more extreme operative measures.

I may in this connection quote a case which occurred recently in my own experience. A young primapara, not quite seven months along, had several severe eclamptic seizures when brought to the Lying-In Hospital. There was no dilatation present. The patient was given morphine and chloral and twelve ounces of blood were abstracted from a vein in the arm. Clearing out the fecal matter from the rectum by enemata, followed by irrigations with normal sugar solution, hot packs, several doses of nitroglycerin, rest in a quiet room and no further examinations, were included in the method of treating this particular case. No further convulsions occurred after the venesection, the blood pressure subsided gradually, the patient perspired freely, the urinary secretion increased, and within a few days the woman seemed perfectly well. She was carefully watched and within two weeks delivered herself spontaneously of a dead baby.

What would we have gained in this case by the performance of a vaginal cesarean section or a resort to an *accouchement forcé?* We would have been favored with a small baby that probably would have perished within a short time after its birth and the mother unnecessarily exposed to a severe operative procedure. Vaginal section in such cases has repeatedly been found not to be the simple operation which many of its enthusiastic adherents would have us believe.

A final obstetrical condition to which I desire to direct your attention, in which the choice of radical or conservative measures is most important, is that of puerperal sepsis. Prophylactic measures to guard against this complication are so well known that it is needless to refer to them here, but notwithstanding this general knowledge puerperal sepsis is unfortunately all too common. The question as to whether or not it is always due to the doctor has not been fully settled, and recent investigations seem to show that in a certain number of cases we are dealing with an endogenous process. There is nothing which demands greater care and judgment than the proper handling of cases of pueperal infection. In the first place we must be careful in attributing a rise of temperature during the puerperium to its proper source; the bowels, the breasts and other organs must be eliminated in every in-

stance before referring this to the genital tract. An instance of infection during the puerperium is usually productive of much worry on the part of the attending physician, and in view of this he is very likely to resort to unnecessarily radical measures in its treatment. Nowhere is this better expressed than in the desire for making an intrauterine examination with the possible employment of intrauterine douches, and I have repeatedly observed cases both in private practice and in the hospital where a patient's chances for a rapid recovery were very greatly invalidated by the institution of such radical methods of treatment. In our service at the Lying-In Hospital, where we naturally come in contact with a great many cases of puerperal sepsis which are sent in by outside physicians or midwives, we have had excellent results with a most conservative method of treatment, which I will briefly outline.

A woman who develops a temperature which cannot be traced to any other source, who presents a profuse and foul lochia, or even a scant discharge, associated with distention, abdominal tenderness, headache, coated tongue, and the other well-known symptoms of puerperal sepsis, is kept in bed, the head of which is elevated for the purpose of securing better drainage both from the uterine canal and the vagina. The bowels are cleared out with a dose of castor oil or calomel and the patient put on liquid diet. In order to limit the absorption of septic material from the uterus, contractions of the latter are secured by the administration of small doses of ergot and the application of an ice coil in the lower abdomen. A cleansing vaginal douche is sometimes given, but no intrauterine manipulations are resorted to except in the presence of some particular indication. For example, if an examination shows the presence of a sharply flexed uterine canal that causes retention of the lochia, this may be dilated with the finger in order to secure a better discharge of the secretions; but intrauterine douches and packing are not resorted to as a general rule. If lacerations or stitch abscesses are present these, of course, are treated antiseptically. We have tried various sera, but with doubtful success, and in following this conservative method of treating our puerperal septic cases have been singularly favored with good results. Later on if pelvic exudates are present the women are likewise treated along the same lines, no operative interference being resorted to unless distinct abscesses are present.

In conclusion, there are a few points in the treatment of the new-born child to which I would like to call your attention. In my opinion resuscitation of the newly born infant is often conducted along lines that are entirely too radical, especially if the mother has been subjected to some operative procedure. Forcible slapping, bending and swinging, removal of mucus from the respiratory passages with dry gauze sponges, etc., need not be resorted to as a routine procedure; they are very often productive of irreparable damage to the child, which can be much more effectively resuscitated by stimulating the action of its chest muscles by means of artificial respiration, and hot and cold tubs. In the presence of depressed fractures of the skull in the new-born, produced by the forceps or the sacral promonotory, an immediate elevation seems preferable to following a waiting policy, as we never know in these cases what permanent damage may result to the child's head by leaving this deformity without treatment. It is a very simple matter with a proper instrument to lift the depressed fragments of bone without danger to the child and then we can be sure of comparative freedom from future complications.

There are many other aspects in this important question, namely, whether we should follow a radical or a conservative method in treating obstetrical conditions, which I cannot take up within the limits of this brief paper. I hope to have shown, however, that we must be prepared to take a stand on either side, depending on the particular indications in the individual cases. Extreme conservative or radical measures must not be insisted upon, and care, deliberation and good judgment invariably exercised before deciding on the method of treatment. Insistence on one line of attack is also to be deplored, and the obstetrician should always be ready to swing over from one line of treatment to another if the indications demand the same. In obstetrics perhaps more than in any other branch of medicine quick judgment is desirable, but this should always be governed by expediency and experience, and not according to the rule of thumb.

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## THE TREATMENT OF LIME STARVATION.

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Rickets, tuberculosis, scurvy (infantile and adult), and many disorders accompanying pregnancy and lactation, may all be traced to lime starvation. My experience in the treatment of these diseases is restricted almost wholly to tuberculosis, the exception being a few cases of rachitic children and a few pregnancies. This restriction explains the prominence given in these pages to the dispensary curative treatment of tuberculosis in the work of which I have had large experience and which I regard as of first importance among the measures for the ultimate control of the disease.

The successful management of the tuberculous requires confidence, firmness, and that familiarity with detail commonly called skill. The physician is a leader and a necessary quality of a leader is confidence. Confidence arises from conviction, and conviction and skill are both acquired by observation and study. Discipline is necessary in the treatment of the tuberculous, and discipline calls for firmness. Every now and again patients appear who rebel at discipline, to whom routine is irksome, and who, for a time, attempt various infractions of the rules. The management of such cases becomes a kind of benevolent persecution which in the majority of instances ends quickly and happily.

In other words, for those who desire to practise the treatment described in the following pages, the best course to pursue is to come to the Thompson street rooms, and study the patients and their management long enough to reach a decision as to the value of the method, as well as to gain the necessary skill in conducting the treatment to a successful conclusion. That this is the wisest plan there can be no doubt, but so many physicians who wish to employ the treatment write that they cannot come to New York and follow the plan suggested, and yet ask for details, that I have decided to publish this paper with the hope that it will be of some service and possibly in the end lead to a closer study of the treatment and its application to the diseases other than tuberculosis which are primarily due to lime starvation.

The theory upon which the treatment is based is briefly as follows:

The necessity for lime in the food of animals and plants has long been recognized. Without this element both plants and animals sicken, and, if the poverty continues unrelieved, develop diseases which finally produce death. The farmer ordinarily supplies his land with inorganic lime salts, but has learned that to obtain the best results phosphate of lime in organic combination must be employed. He uses bone meal for this purpose. Hens are furnished oyster shells ordinarily, but if ground green bone is added to their food egg-laying is greatly increased. Physicians, on the other hand, have attempted to relieve lime starvation, rickets, and the anemia of nursing women, for instance, by the administration of mechanical mixtures of lime salts. It is but simple justice to admit that the farmer has succeeded better in meeting his obligations than the physician. The reason for this is clear. The farmer's problem is to supply necessary food alone. He can rely upon the ability of healthy plants and animals to assimilate it. The physician ministers to subjects whose food may contain an abundance of lime, but who have lost the power to render it assimilable.

Lime salts appear to be of special physiological importance. The formation of cells, the clotting of blood and milk, nervous and muscular equilibrium, depend upon their presence. Phosphate of lime forms a part of the normal structure of every organ in the body. Lime is being constantly discharged from the body as physiological waste material. It is, therefore, an essential plastic element of food. Three results must then follow an insufficient supply of lime: (1) Imperfectly developed organs; (2) lowered resistance to disease; (3) lack of power to repair physiological waste; lack of power to repair injury. Imperfect structure of an organ leads to impaired function. Resistance to disease is a physiological function, therefore, imperfect organs must exercise imperfect resistance. Growth and repair are dependent upon cell formation. Cell formation will not take place in the absence of lime phosphate. If there is a deficiency of lime phosphate and disease has already been established, its extension is unobstructed because no plastic effusion is possible in the absence of lime phosphate. Injuries are healed by plastic effusion, and phosphate of lime is the element which makes such effusions plastic. Lime does not act as a poison to the bacillus in the treatment of tuberculosis, but serves to restore the normal protective function of the cells in producing a fibrosis, the result of plastic effusion, at the point of irritation caused by the growth of the bacillus.

Certain preliminary changes are necessary before lime phosphate is ready for absorption by the tissues. Everybody understands that protein, starches, and sugars must first be changed by digestion before they can take part in physiological processes. So it is with phosphate of lime. It must first be combined, and after this digested. Even should this salt reach the blood unchanged and circulate as an inorganic salt, it is useless in this state as building material, and would be discharged. To be utilized by the tissues as food it has been found that lime phosphate must be presented to them in chemical union with protein. The presence of many of the mineral salts is necessary for the performance of physiological acts merely in order to give the particular reaction, acid, alkaline, or neutral, without which the acts cannot take place. The function of phospate of lime is much higher, and preparation is required before its purpose can be achieved. For here is an inorganic, inert material which is to be incorporated into and become a part of living matter. A stone is to be endowed with the attribute of life.

It has been discovered further that nature has provided an enzyme in the stomach, the action of which combines lime phosphate with casein, viz., rennet. The clot produced by rennet in milk is caseate of lime, a chemical union of lime with protein. Normally this is the first change produced in milk when it reaches the stomach. The combination is further acted upon by pepsin and finally absorbed in a form suitable for assimilation by the tissues. Lime phosphate in the blood serum is found in combination with albumin, and circulates as lime albuminate. Two things are essential, therefore, that the body may receive its necessary supply of phosphate of lime, viz.: First, a supply of suitable food; second, the action of rennet. In the majority of cases of lime starvation the food previously eaten has been suitable, so that the commonest cause of the trouble must be absence of the active ferment. This brings us to a consideration of rennet and the causes which interfere with its presence in the stomach.

Rennet occurs in the stomach either in an active free state (as in calves and sheep), or in the form of an inactive zymogen which is transformed by acids into the active form. In man it occurs in the form of zymogen. Its presence is never wanting in sucklings. The formation of the ferment from the zymogen is entirely dependent on the presence of free acids, so that in the absence of the latter from the gastric juice the free ferment is invariably wanting, even though the zymogen is present. Almost all acids may be used for converting zymogen into the active ferment. The best is hydrochloric acid; the least effective, acetic acid. In the stomach lactic acid and other organic acids also act as zymoplastic agents, in the absence of hydrochloric acid. Rennet zymogen is never absent from the stomach of man, even in pathological conditions, unless the secreting glands are destroyed, as in carcinoma. It is evident, therefore, that insufficiency of free acid is the cause of deficiency of free rennet in the stomach. So, in the last analysis, the presence of acid in the gastric secretion is the factor which brings about the combination of lime and proteid.

Attention is directed to the fact that rennet and pepsin zymogen are never absent from the stomach, either in health or disease, so long as the glands have not been destroyed. It is obvious, therefore, that the administration of either rennet or pepsin is wholly unnecessary under any circumstances except possibly the later stages of gastric carcinoma. The administration of acid is all that is necessary to produce the active ferment.

While it has not been demonstrated that proteins other than casein are combined with lime by the action of rennet, all analogy points to such combinations as certain. Rennet is found in muscle, liver, blood clot, and testicles. The gizzard of fowl, the stomach of fish, different parts of many plants and flowers, contain rennet. Its presence in all these situations points to a wider range of usefulness than would be the case if casein alone was the only protein which it could combine with lime. The gizzard of chickens is particularly rich in rennet. Milk forms no part of the natural food of

these fowl, and yet their demand for lime for egg shells is enormous during the laying season. The daily need of lime for human adult males is comparatively small, though even this small amount is essential for health. There are many perfectly healthy adults who rarely if ever drink milk. In these instances protein other than casein must be combined with lime.

The acid of the stomach, in addition to the activation of the stomach enzymes, has another important function. It has been found that the secretion of pancreatic fluid is started by a hormone secretion, which is itself developed by the action of the acid from the stomach, after it escapes from the pylorus, upon the upper part of the duodenum.

Many conditions of ill health check the secretion of hydrochloric acid in the stomach. The commonest are fever and gastrointestinal diseases. The secretion may be entirely checked, or it may only be diminished. A diminished secretion is probably the usual fault in cases which finally end in tuberculosis. In the majority of instances lime starvation is brought about slowly. The explanation being that if the diminished amount of hydrochloric acid is not entirely neutralized by the salts of the food eaten, and if the diet contain, in addition to lime-bearing foods, organic acid enough to bring about the combination of a small though still insufficient quantity of lime, evident symptoms of lime starvation will be delayed for a long time. The exacerbations and remissions observed in the course of tuberculosis are accounted for in much the same way. The remissions are due to some change of diet by which it includes lime-bearing foods and sufficient organic acid to insure the combination of lime with protein. The exacerbations, on the other hand, point to the absence of either the one or the other, or both. During prolonged fevers the secretion of hydrochloric acid is probably at its lowest ebb. This circumstance, together with the usual restricted diet, particularly if convalescence is delayed by complications, causes lime starvation and encourages successful infection with tubercle bacilli.

Acute dry pleurisies occurring in the course of pulmonary tuberculosis are plastic effusions, and are evidence of an attempt at healing. It is a mistake to regard them as extensions of disease. Plastic effusion is the normal means of cure in tuberculosis, and is similar in purpose to the callus thrown about the fragments of fractured bones in the process of their repair. Plastic effusion must always precede spontaneous recoveries. Spontaneous recoveries occur when the subjects of disease regain the power of assimilating lime. It can readily be understood how this may take place quite accidentally so far as conscious effort is concerned. A tuberculous individual might take foods containing lime without benefit for a long period, and then, because of change of season, or change of climate, caprice, or from any imaginable cause, acid, in the form of fruit, beverage, condiment, or fermented dish, was added to the diet, thereupon the assimilation of lime would be resumed and improvement follow. The administration of hydrochloric acid, casein, and lime phosphate is an orderly plan to restore the missing essentials by means of which the suspended natural forces in every patient are again put in motion and plastic effusion assured. If the lesion is extensive enough plastic effusion produces symptoms sufficiently marked to be recognized as acute dry pleurisy. If the lesion is small the symptoms may be so slight as to pass unrecognized. Serous effusion is evidence of lack of lime because the effusion is not plastic.

The symptoms of plastic effusion are the symptoms of acute pleurisy, and vary in intensity in different patients. They begin with pain, temperature, and physical signs of pleurisy. Pain may be slight or severe, temperature may be only slightly elevated, or in some cases reach 102° and higher. The acute symptoms may last a week, more or less. Physical signs vary in intensity. As a rule the more marked the lung lesion the more marked the physical signs of pleurisy. After the acute symptoms subside and the effusion begins to organize, creaks and dry rubs are marked. Moist râles gradually disappear.

As the original lesion heals the most marked signs of effusion may either disappear altogether or persist for some time after. The more extensive the original lesion, the longer the signs of organized effusion remain. This is true particularly over and about cavities. Serous effusion has so far never been noted. The time at which these symptoms first make their appearance varies. I have known the effusion to appear witin three weeks after beginning treatment, and in other instances to be delayed for more than five months. Broadly speaking, the time of its occurrence may be put for the majority at between the sixth and sixteenth week after beginning treatment. During the past two years there has been a small number of patients who reached apparent cure without physical signs of plastic effusion. The extent of disease was small and the effusion produced no signs.* Plastic effusion occasionally occurs in situations where no lesion had previously been noted. It may occur more than once in the same patient.

Eighteen cases have been observed in which plastic effusion was accompanied by extensive consolidation, involving a part, and in two instances a whole lobe, unaccompanied by rise of temperature, quickened pulse, or other rational symptoms of pneumonia. These consolidations in seven cases persisted for months, and finally cleared after being treated by a lessened amount of milk and eggs and the omission of dilute hydrochloric acid. This modification arose from the idea that the consolidations might be due to excessive amounts of plastic effusion having been poured into the air vesicles. The correctness of this conception can be confirmed only by autopsy, and I have no observations of such examinations to report.

To insure the absorption of lime in an assimilable form it is necessary to supply lime phosphate, casein, and dilute hydrochloric acid together. No one alone will answer. They should all be present in the stomach at the same time. The administration of milk and eggs to which dilute hydrochloric acid has been added, to be described later, fulfils this requirement.

Treatment based on the theory outlined in the foregoing was begun in September, 1906, at the Thompson street rooms, and has continued ever since. Two reports have been published. A final report cannot be made until the few remaining patients of the group selected for observation have either recovered, died, or stopped treatment for any cause. Comparisons can, however, be made between the results so far obtained from this treatment, and results obtained from treatment based on other theories. No comparison can be made between results obtained at the Thompson street

*These patients were not among the group selected in 1906 for observation of results of treatment.

rooms and those obtained at other dispensaries, because, so far as I am aware, there are no other reports of the results of systematic curative dispensary treatment in existence. The only reports available for comparison, therefore, are those from sanatoria. Such comparison on the whole is fair because by far the greater number treated at sanatoria are ambulatory cases. Ambulatory cases only can be properly treated at a dispensary.

Treatment at sanatoria is based on the theory that rest, pure air, an outdoor life, and good, wholesome food are cardinal factors in the cure and prevention of tuberculosis. To obtain this treatment all patients must give up their work and live in an institution which is situated in the country. Carried to a logical conclusion, the practice of this theory means, if it means anything, that all consumptives and those predisposed to the disease should live in such institutions at least until cured, for all the essentials for cure can be obtained nowhere else. Those who are uncured should certainly stay, and those who are apparently cured should remain in order to prevent a recurrence. It requires years of treatment to bring about a cure. As a matter of fact, the great majority of patients remain at sanatoria but a few months, after which, whether apparently cured or not, they return to their original surroundings—surroundings which, according to the theory, present insurmountable obstacles to both cure and prevention. Does not this practice stultify the theory? What hope does this belief afford an incompletely cured wage-earner after his return home from a sanatorium where he can neither rest, breathe pure air, nor lead an outdoor life? If it is urged that any stay in a sanatorium, even if short, is of benefit in delaying the inevitable end, then it would naturally be supposed that this benefit would be extended first to those whose need was most urgent and that, in the selection of patients for admission to sanatoria, the advanced rather than the early stage cases would be given preference. Such is not the practice. Early stage cases are always selected when possible.

Treatment at the Thompson street rooms is based on the theory that a specific diet and fresh air are the chief factors in the cure and prevention of tuberculosis. Wage-earners with uncomplicated pulmonary tuberculosis in any stage of the disease are admitted for treatment so long as they are properly ambulatory cases. All patients live at home, their labor is uninterrupted, and they can remain under treatment or observation for the remainder of their lives if necessary.

The percentage of apparent cures reported from six well-known sanatoria, the result of treatment of patients in all stages of the disease, averages 20 per cent. The percentage of apparent cures obtained at the Thompson street rooms to date, the result of treatment of patients in all stages of the disease, is 61.7 per cent.

The Thompson street rooms are kept perfectly clean. Floors, benches, chairs, and tables are gone over daily; walls and ceilings once a week. Damp cloths only are used, and are burned at the end of each day. Two women are employed for cleaning, and do their work between the morning and evening dispensary hours. Rules for the care and disposal of sputum are printed and a copy given each patient at the first interview. These rules are carefully explained, and their importance emphasized. Paper napkins are furnished for expectoration and to hold before the face when coughing or sneezing. Drinking vessels are sterilized after each dispensary hour. The number of patients is limited to fifty, and every patient is required to report twice daily in all weather, Sundays and holidays included; in the morning after breakfast, on the way to work, and again after the last meal in the evening. The hours are 7 to 8.30, morning and evening. Once a week all patients are weighed and the men and women examined and notes made of their condition on alternate Sunday mornings. Sunday is selected for weighing and examination, because it is not a work day, and no time is lost from labor. Individual supervision is one of the highly important details, hence the advantage of having patients report twice daily and limiting the number to fifty. During these visits patients drink the milk-egg-acid mixture to be described later, and the emulsion of mixed fats, and are instructed.

The importance of the coming of patients to the dispensary twice each day and their drinking the prescribed foods in the presence of the nurses is patent. Under these conditions there can be no deception or wastefulness on the part of the patient, or uncertainty on the part of the physician that each patient obtains these indispensables, that they are properly prepared, and that they are imbibed at the proper time. These visits lead to complete knowledge of the life and habits of the patients, thus discovering faults which call for correction, and besides, occupying, as they do, practically all of their leisure time, evil associations, if such exist, are destroyed. Having one member of the family in such long and intimate association has a very direct bearing upon the prevention of tuberculosis in that it enables the dispensary to reach the whole family, particularly the children, who are the oncoming recruits of the disease, and to direct their regimen.

The nurses, three in number, are present at all dispensary hours to distribute food, interview patients, and carry out the practical instruction. They are former patients. The physician is present three evenings a week to examine new patients, receive reports of nurses, issue instructions, and correct errors. This requires about one hour for each visit. Sunday morning, when patients are weighed and examined, occupies about one and one-half hour additional of the physician's time. One of the nurses visits the home of each patient at least once, after which it is usually necessary only to send for some member of the family to come to the rooms in order to correct errors that may be discovered. The physician never visits the homes of patients. For the care of intercurrent troubles patients are instructed to call their family physician.

As stated before, ambulatory cases only are accepted for treatment. The majority are working people, and they continue to work while under treatment. The dispensary hours are arranged with this end especially in view.

No patient is admitted whose sputum does not show tubercle bacilli.

Patients are considered apparently cured when physical signs of disease are no longer heard and tubercle bacilli have disappeared from the sputum. Six examinations, two weeks apart, are required.

The treatment of dispensary patients may be considered under three heads, viz.: First, education and management; second, general details, and third, diet and care of digestion.

Education and Management.—All patients should clearly understand that their disease is consumption, and that in the great majority of cases ap-

parent cure and cure are accomplished only after years of treatment. Unless taught otherwise, it seems to be a natural tendency for the average patient to assume that he or she is cured after gaining weight and strength, even though the cough and expectoration containing tubercle bacilli remain undiminished. They have little idea of the length of time required to bring about apparent cure, and education in this regard prevents disappointment and strengthens control. They are taught that after gaining proper weight and strength continuance of treatment in no way interferes with rational enjoyment and the reasonable pursuits of life. It is made clear that the hope of cure rests upon their faithfulness in carrying out the prescribed rules of correct living. They are held to a strict accountability, and if found weak and persistently obstinate, dismissed. This sometimes becomes necessary. It is folly to allow looseness in discipline. Beyond a reasonable point toleration works serious injustice to the faithful and produces discontent. The great majority of patients are reliable.

General Details.—Clothing: The commonest fault in the matter of dress among the tuberculous, during cold weather, more especially, is overclothing. Heavy underwear, all neck wraps, chest protectors, and corsets are forbidden. The patients are directed to wear heavy soled shoes, and in wet weather overshoes, and always to keep the feet dry and warm. Most houses are overheated, and patients are taught that the best safeguard against colds in winter is to wear light underclothing, in order to avoid sweating while at rest, and, on leaving the house, a heavy outer garment which can be removed on again reaching shelter. Instead of neck wraps they are taught to bathe the neck and chest in cold water on rising in the morning.

Exercise: Exercise undertaken solely for the purpose of influencing health is forbidden. As stated before, these patients work, and are encouraged to continue their occupations except in instances when it is known that the work is injurious. In such cases a change is advised. Occupation is considered desirable, even though it involves a good deal of exercise. The use of dumb-bells, chest-weights, Indian clubs, and breathing exercises is forbidden.

Fresh Air: Fresh air, being a form of food, all patients are instructed to obtain as much of it as possible. Because they work and cannot in the great majority of cases control the supply of fresh air during the day, stress is laid upon the necessity of having the bedroom windows open wide in all weather. They are told that they are expected to keep comfortably warm in bed, but must be sure to breathe the cold, fresh air; they are also advised to occupy a sunny room and preferably alone.

An interval of at least five hours between meals is insisted upon. Breakfast at 7 or 7:30, mid-day meal at 12 or 12:30, and the evening meal at 6 or 6:30 o'clock. No food is eaten between meals, excepting the extra milk allowed new patients prior to the appearance of plastic effusion. They are directed to avoid crowded places of amusement, and remain eight hours in bed at night. All medicines excepting those prescribed are forbidden.

Special Symptoms.—Cough, pain, night sweats, and hoarseness receive no special treatment. Patients are taught to ignore and, when possible, suppress cough. No medicines are given for the relief of this symptom. Diarrhea and looseness of the bowels are treated with castor oil and other cathartics, if necessary. Nausea and vomiting are caused by incomplete emptying of the bowel, and are relieved by cathartics. Blood-stained sputum and small hemorrhages are ignored. When severe hemoptysis occurs the patient is advised to keep quiet for a few days. In such case some member of the family comes to the dispensary daily for the milk-egg-acid mixture, which the patient continues while absent. No special treatment is employed for this symptom.

Weight.—Gain in weight is insisted upon in all cases until in the judgment of the physician the total amount gained is sufficient. This weight is then maintained. The greater number of patients are much under normal upon beginning treatment, but occasionally a patient appears in whom the required gain is small. Increase in weight is an indication of improved nutrition. The fact that individuals and various members of their family have always been under normal weight is not a good reason for failure to gain. Most patients who have been under treatment for a long time are forbidden to increase their weight because the maximum amount has been achieved. Long experience has taught that those who fail to gain, unless undergoing an exacerbation, are either disobedient or too poor to provide proper food. Regular weighing (once a week, at least) is absolutely necessary if the treatment is to be carried on intelligently. The patient should always weigh at the same hour, dressed in the same clothing, or, better still, without clothing, and use the same scale. At my rooms women are weighed in their night dresses and men in trunk-hose.

Food and Care of Digestion.—In arranging the diet for dispensary patients very explicit directions are given concerning the kind and quantity of a few articles of food and only the most general regarding others. The reason for this is obvious when it is remembered that these patients live at home, and necessarily purchase and prepare their own food. It is all important that they receive a sufficient quantity of phosphate of lime, casein, and other protein, and fat. The necessary daily amounts of foods containing these constituents in quantity are customarily replaced by other articles of food which may be more palatable, but are less important. Vegetables, with the exception of wheat and the pulses, are usually thought of as sources of carbohydrates and salts, and the daily amount consumed is left to the discretion of the patient so long as progress is satisfactory.

The main sources of phosphate of lime are milk and eggs; of protein, milk, eggs, bread, and meat; of fat, milk, eggs, and emulsion. Excepting wheat and corn meal (as bread) no directions are given for eating cereals. If patients are fond of bread, butter, and milk, they invariably do well, but if they do not eat bread and butter from choice, as commonly happens, they are directed to eat one or more generous slices of bread liberally spread with butter, with each meal. The pulses, peas, and beans are recommended in the form of soups, but are practically ignored as sources of protein, though very rich in this constituent. Ordinarily no special instructions are given in regard to the consumption of meat.

Practically then specific directions for the consumption of a daily amount are confined to the following foods: Milk, eggs, bread, butter, and fat emulsion. With the exception of milk and fat emulsion, the amounts of which remain fixed after

a certain period, the daily quantities of these foods are determined by the gain or loss of weight of each individual. It will be understood, therefore, how necessary it is that patients should be weighed regularly.

These are, of course, merely general principles. No one rule of feeding will apply to all patients, or to the same patient under all circumstances. The individual must be studied. The need for large quantities of food is passed. Since the use of dilute hydrochloric acid the compulsory daily amounts are not burdensome, and no one has difficulty in meeting requirements.

Alcohol in all forms, tea, coffee, chocolate, cocoa, and thin soups are forbidden.

No change in diet is made the first week of treatment except that all receive fat emulsion and abstain from forbidden articles of food. Cough mixtures and all other medicines are stopped. Cathartics are freely administered, and an effort is made to clean the intestinal tract thoroughly. Patients are not expected to gain the first week, and frequently lose weight. Beginning with the second week, the milk-egg-acid mixture is begun. Both men and women drink a quart of this mixture at the dispensary daily, a pint at the morning hour, and a pint at the evening hour. In addition the men carry home and drink during the day a quart of milk to which has been added four drachms of dilute hydrochloric acid, and the women one pint of milk to which has been added two drachms of hydrochloric acid. This extra milk is employed until the patient develops plastic effusion, when it is stopped. The milk-egg-acid mixture, one quart, which is taken at the dispensary, is continued until the end of treatment.

Preparation of the Milk-Egg-Acid Mixture.—At the dispensary two eggs are beaten, strained, and mixed with sufficient milk to make one quart. To each quart of this mixture four drachms of dilute hydrochloric acid (U. S. P.) are added and stirred until thoroughly mixed. The mixture is then bottled and put in the ice chest. The appearance of the curd varies. The warmer the milk and egg mixture when hydrochloric acid is added, the thicker the curds. The curds are, therefore, sometimes thicker and more noticeable than at others, but are always soft, rather fine, and in no way disagreeable to drink. The taste of raw egg is much improved by the acid. When hydrochloric acid is added to milk it is, of course, largely combined by the various constituents contained therein, and as some free acid is necessary in order to activate rennet zymogen, the proper amount to be added is of moment. The amount given above was adopted after long experimentation, and has not been changed since June, 1909.

Eggs.—Two of the whole number of eggs are taken in the milk-egg-acid mixture at the dispensary. The remainder are swallowed immediately after meals. If a patient fails to gain weight when the daily number of eggs is six, care should be taken to see that a sufficient quantity of bread, butter, and vegetables, particularly the former, is eaten before increasing the number of eggs. This is a matter of consequence. Eggs are uncooked and patients are allowed to swallow them with or without milk (yolk unbroken), as preferred.

Fat.—An ample supply of fat in the diet of the lime-starved is essential. The beneficial results following the administration of fat in rickets, scrofula, and tuberculosis are mentioned by all observers. There is some important physiological relation, as yet unexplained, between fat and lime. In this connection it is interesting to note that studies in pathological calcification show that the presence of fat is necessary for the deposition of lime. Caseation of the tubercle, therefore, affords suitable soil for deposition of lime salts and the formation of lime soaps, and leads to healing by calcification. Fibroid limitation of the tubercle is, of course, the result of plastic effusion. To supplement the fat contained in milk and eggs I employ an emulsion of mixed fats. Beginning with one-half ounce, dissolved in a whole glass of hot water, night and morning, and adding one-half ounce every three days until two ounces are taken with each dose, in the same amount of water. This is the maximum dose, and is continued throughout treatment.

Cathartics.—With very few exceptions all these patients are constipated, or have insufficient daily evacuations. This causes lack of appetite, nausea, often vomiting and so-called bilious attacks, and occasionally an increase of temperature. Diarrhea is not uncommon as a result of constipation and many suffer from hemorrhoids. The relief of these disorders alone is reason for the systematic administration of cathartics, but when it is remembered that these patients are suffering from a wasting disease and, in order to combat it, must of necessity consume more food than is actually needed for their daily physiological requirements, it is evident that some provision must be made for getting rid of the extra amount of waste material resulting from the extra amount of food consumed. It is a rare exception when a patient is able to keep the large bowel empty without the aid of laxatives. The systematic use of cathartics increases digestive capacity, hastens absorption, aids the removal of circulating poisons, and reduces fever. All patients are taught that daily movements are essential, and each patient is especially studied in order to learn the amount and kind of medicine necessary to accomplish the desired result. With the exception of castor oil, no point is made of any particular medicine. Castor oil, two tablespoonfuls, is always administered to new patients the first night and as a rule all patients take it at least once a week. A cathartic of some kind is taken every day. In addition to castor oil I employ compound rhubarb pill, cascara, licorice powder, salines occasionally, and, when the use of calomel is desired, compound cathartic pill.

Treatment of Children.—Seven children of patients undergoing treatment at the dispensary have been treated. Oldest, seventeen years; youngest, five years. These children were anemic, most of them under normal weight, and all showed signs of previous attacks of rickets. Physical inactivity was most noticeable, and one child in particular was dull mentally. The special treatment consisted in adding daily one quart of the milk-egg-acid mixture and the emulsion of mixed fats, in doses not exceeding one ounce, to the diet. Two drams only of dilute hydrochloric acid were added to the quart of milk-egg-acid mixture prepared for the youngest child; the remainder were given the usual mixture containing four drams of acid. All the children were greatly benefited. The improvement consisted in color, increase in weight (small in the majority), height, and vigor. The latter most marked.

These children were selected for treatment because the parents were trustworthy and intelligent,

and the treatment could be managed from the dispensary. I at one time attempted to treat all the children of all the patients, but had to abandon the attempt because I found that, in most cases, without special nurses to visit the homes, instruct the household, and establish a routine, no exact work was possible. This involved more outlay of money and time than I felt could properly be added to my present work. Enough experience was gained, however, to convince me that with efficient aid this feature can be made a most important part of dispensary work.

*Treatment of Pregnancy and Lactation.*—Large quantities of lime are furnished by the mother for the development and growth of the fetus and later, during lactation, for the further growth and development of the infant. The importance for both mother and child of preventing lime-starvation during pregnancy and lactation is obvious. Tuberculosis following pregnancy and lactation is often observed. Rickets is the commonest disease of childhood.

Six cases were treated. Two of the women were cured dispensary patients, each of whom was treated through two pregnancies. The special treatment consisted in the daily administration of one quart of the milk-egg-acid mixture and the emulsion of mixed fats. Cathartics were employed as described above. The benefits observed were no decayed teeth, more comfort and well-being during pregnancy. Lactation was normal with less than the usual loss of strength. The chief result noted, however, was the very unusual vigor and activity of the children and their general good health.

*Treatment of Private Patients.*—The treatment of private tuberculous ambulatory patients is conducted in the same manner, with few modifications, as the treatment of dispensary patients described in the foregoing pages. If the physician and patient together undertake this or any other treatment as an experiment the probabilities are that the experiment will end in failure. The physician alone should direct the treatment and he should dominate the patient. Some member of the family had better be instructed by the physician to assume responsibility in the preparation and administration of the milk-egg-acid mixture, emulsion, and cathartics, and in establishing a routine. After this has been accomplished the physician need see his patient but once a week, when he or she is weighed, examined, and instructed. If it is found convenient to do so it will be more agreeable for these patients to make the milk-egg mixture in the morning without the dilute hydrochloric acid and, when about to drink, to each eight ounces of this mixture add sixty minims of acid and stir thoroughly.

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## FURTHER EXPERIENCE WITH THE HIGH CALORY DIET IN TYPHOID FEVER.

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It is not my aim to write an exhaustive treaty on this subject, which is occupying so much space in medical literature, but merely to present a few interesting features of this method of treatment, contrasting them with the various methods of feeding which have been, and still are in vogue.

First, it may be said, that until a few years ago the percentage mortality of typhoid fever had remained practically the same for many years; the percentage of complications had remained the same for an equal period. The prevailing picture of typhoid patients was one of dry leathery tongue, characteristic apathy, low muttering delirium, subsultus tendinum, emaciation, sometimes furunculosis, asthenia and incontinence; this picture was characteristic, was not infrequent, and gave promise of dissolution which was averted, seemingly, by the hand of Providence alone. My contention is that this state of affairs has changed since the greater feeding of patients has been in vogue.

It is interesting to note the various changes promulgated in the diet from time to time, seemingly regardless of the loss of nutrition entailed, hence the lessened resistance so caused. Poor nutrition means lowered resistance, inability of phagocytes to contend with the invasion of bacteria, inability of the constructive to cope with the destructive processes of metabolism. The whole situation was sacrificed to the fear of intestinal ulceration, anticipated hemorrhage and perforation, and the danger was enhanced to the greatest extent by a continued refusal on the part of the profession to build up reduced material by increasing the dietary. As a result, the loss of weight was great, convalescence prolonged, and inanition temperature sometimes present; the hunger of the patients was pathetic; in hospital practice they would beg food from their friends, or steal it from their neighbors.

In past years there have been (and there still are) those who have advocated entire elimination of milk from the dietary, "because it forms a good culture medium for typhoid bacilli, because of its difficulty of digestion and its proneness to cause digestive disturbance."[1] This total cutting out of milk from the dietary has not been thought necessary by the majority of practitioners, because its rôle as a culture medium is of little importance when we remember that typhoid fever is a bacillemia; also milk is indigestible to only a few individuals, and if found to be so it can be peptonized or even stopped. Other writers advocating a gruel or a broth diet have said that emaciation occurs independently of taking food, suggesting that but little food is assimilated, and that what the patient loses in food is more than compensated for by diminished toxemia: they claim that fasting reduces the temperature, brings rest to the intestines with lessened danger of hemorrhage and perforation, and enhances the effect of hydrotherapy; also that recrudescences are due to dietetic errors.

In refutation of the non-assimilation and non-absorption of food in typhoid fever, Du Bois' experiments[2] have proved conclusive. He has shown that with an intake of 65 to 118 grams of proteid, the loss was usually under 10 per cent.; the normal loss on the same diet being 7.9 per cent. The fat loss in the second week when the temperature was high, with an intake of 147 to 200 grams, averaged 8.8 per cent.; in the third and fourth weeks, with an intake of 150 to 200 grams, the loss was 4.15 per cent.: the normal loss with an intake of 164 grams, was 2 per cent. (Rubner found that a normal man taking 79 grams daily, in milk, lost 7.1 per cent. in the stools, and a man taking 214 grams a day, in butter, lost 2.7 per cent.) The carbohydrate loss in patients taking from 215 to 567 grams was only 0.1 to 0.3 per cent.; the control, on 249 grams, lost 0.1 per cent.

A trial with liberal feeding will soon convince anyone that emaciation is not independent of taking food, but on the contrary, weight is very dependent upon the amount of food taken; of course, a certain loss of weight will occur anyway, due to the toxemia, or the toxogenous destruction of proteid, but weight is certainly better sustained by a liberal diet; that the taking of food increases the toxemia is not true, and that starvation decreases the temperature is not true: experiments[3] have shown that during starvation, heat production remains constant until near the end, when a great output of nitrogen occurs. While recrudescences may at times be due to dietetic errors, they are reinfections, and occur independently of taking food. Von Hoeslein has shown that during typhoid fever, digestion is not more than 10 to 15 per cent. below normal.

There is less diarrhea with high ealory diet, than with fluids alone, and the stools present a more normal appearance than do the stools of other methods of feeding, and contain practically a normal quantity of nitrogen, which is not true of the stools of starvation. It must be conceded that cases with gastroenteritis are apt to do badly; the gastritis is a sign of toxicity; they are hard to feed and if milk disagrees, recourse must be had to some substitute.

Six hundred cases fed on a liberal diet have been analyzed by Kinnicutt,[4] who concludes that relapses were not increased and that hemorrhage and perforation were diminished.

Coleman, in his 111 cases fed on high calory diet, finds that relapses are not affected, while hemorrhage and perforation are lessened.

Shaffer[5] found that a patient with typhoid fever rarely received more than 50 per cent. of his dynamic needs, and that this contained proteids far in excess of the normal proportion.

With a purely milk diet 4,000 grams, or four quarts, would be necessary to satisfy a daily requirement of 2,800 calories; this is far too great a quantity to take, and besides, furnishes 140 grams of proteid, or about twice as much as is necessary; our aim must be to reduce the bulk of milk to a normal quantity such as one and a half to two quarts, and increase its fuel value by the addition of fat and carbohydrates. Knowing, as we do, by the experiments of Von Noorden, Rubner, Voit, and others, that during fever the metabolism of the body is increased, that the fat reserve of the body is called upon, after which a loss of proteid occurs, it becomes incumbent upon us to protect the body from this threatened destruction. This can be done by increasing the carbohydrate and fat intake, in order that the proper fuel value of 2,800 calories be given. Folin[6] showed that in starvation, nitrogen metabolism can be reduced one-third by the use of carbohydrates. Chittenden thinks that 60 grams are enough to maintain nitrogen equilibrium; the German authorities, however, place it higher, 80 to 100 grams.

Carbohydrates then, being the best sparers of proteids, it is with this ingredient chiefly that we attempt the caloric increase; we must also attempt to give the usual amount of protein[7] of 60 to 100 grams a day, for this is as important as the total fuel value. Fat fed alone retards the loss of body proteid comparatively little, but spares an equivalent amount of fat.

*Carbohydrates* are best supplied in the form of milk sugar, cereals, bread, toast, crackers, baked or mashed potatoes, and proprietary foods; they are the best proteid sparers available, and milk sugar is preferred because of its lesser bulk and high caloric value. Milk sugar is best dissolved in hot water ounce for ounce, brought to the boiling point and immediately removed, otherwise the sugar will crystallize; it is best administered by adding 10 grams, or 2½ drams of this sugar solution to each feeding, increasing to 20 grams or 5 drams in the course of a few days; it is usually well borne, but some people object to its sweetness and it may have to be increased more slowly than the above; patients who object to its sweet taste in milk will often take the same amount in custard, lemonade, or ice cream. Its ill effects are shown chiefly in distention, also to a lesser extent in nausea and vomiting, and it should be cut down or stopped for the time being; when resumed it should be done with care. Two hundred and fifty grams, or 8 ounces by weight, equals 100 calories.

*Fats* are best given as cream, butter, and cocoa; a good beginning is by adding one ounce of cream to each milk feeding, after a few days increasing it to 2 ounces; 200 grams in the twenty-four hours is a good quantity, and equals one ounce to each three-hourly feeding. Five hundred grams or one pint equals 1,000 calories. Fat tolerance varies considerably in different individuals; most people can take fats if fed gradually and with care, but there are those in whom fat causes distress, eructations, nausea and vomiting, and diarrhea; in this case they must be reduced, and then tried again cautiously. Acidosis resulting from high fat feeding has not been observed.

*Proteins.*—The attempt should be made to give food of as high protein content as is possible under the circumstances; this means from 60 to 100 grams of protein a day; while more than this is often taken in health, the excess is not necessary, and becomes burdensome. Although fats and carbohydrates are protectors of proteid during the increased tissue waste brought about by the pyrexia, bacteriemia, and under-feeding, the surest way of making good the protein loss is by protein intake; Voit's experiments in starvation showed that some of the animals used had a considerable amount of fat even after death, proving that the fat was not entirely used as a sparer of proteid. In health, nitrogen equilibrium is maintained by an intake of 100 grams of protein per diem, and is represented by a urinary output of 16 grams of nitrogen per diem, and a fecal output of about 1.1 grams per diem (Hammarsten).

| | Protein Intake | Nitrogen Intake | Nitrogen Output | |
|---|---|---|---|---|
| Fat[8] | 100 grams | ..... | Urine | 14.4 grams |
| Sugar | 250 grams | ..... | Feces | 1.1 grams |
| Protein. | 100 grams | 15.5 grams | | 15.5 grams |

Coleman[9] contends that though these figures (100 grams) are enough to maintain nitrogen equilibrium in disease, there may be an increased demand for proteid intake during convalescence to repair the damage already inflicted.

The most available food for maintaining proteid equilibrium are milk, eggs, and the protein containing carbohydrates. One and a half quarts of milk equals 53 grams of protein; two eggs equal 14 grams of protein; 90 grams, or 3 ounces, of cereal equal 3½ grams of protein; 33 grams of bread (one slice) equal 1.5 grams protein. Here, then, are 72 grams of protein which can be utilized for an arbitrary working basis, and can be diminished or increased, as the case demands. Beef broths and beef juice are of such low protein content and low

caloric value, that they are not of much consequence from this point of view, but may be used for variety, and to stimulate appetite. Meat itself may disorder digestion and prove irritating to the kidneys owing to its purine content.

From a series of experiments by Coleman and Du Bois on total metabolism by means of the Benedict respiratory apparatus, I quote briefly from Coleman's article, "The greatest amount of heat produced by any patient was 48 calories per kilo a day, the majority giving off about 35 calories per kilo a day. On this basis the high calory diet gives 1,000 or 2,000 more calories than are expended in twenty-four hours, and if the patients do not receive this they lose both nitrogen and weight; later in the disease the excess is used in storing fat."

*Milk* forms the basis of high caloric feeding; for while it may be supplemented later in the disease, it forms the fundamental element of the dietary in the beginning; it is usually well taken and liked; but its continued use becomes irksome, and there are some persons who can not take it at all, though among many of these the distaste is purely imaginary. The average quantity which can be handled by patients is from 1½ to 2 quarts a day; but there is a definite limit to the power of digesting it, and that limit is shown by abdominal distention and curds in the stools; if undigested it should be cut down in quantity or peptonized, or stopped, as indicated. If necessary it may be supplanted by malted milk, malt soup, other proprietary foods, and broths; this, however, is unfortunate, for without milk and its derivatives such as zoolak, koumyss, etc., and the foods made from milk, as junket, custard, cocoa, etc., it is difficult to provide variety in feeding, difficult to provide an appetite, difficult to give high fuel values, consequently more difficult to maintain weight.

One liter of milk consists of 40 grams of fat, 45 grams of carbohydrate, and 35 grams of protein; its fuel value is 700 calories as shown by Rubner's table.

| | | |
|---|---|---|
| Fat | 4 %x1000 gm. 40 gm.x9.3 (cal. value 1 gm.) | 732 calories |
| Sugar | 4.5%x1000 gm. 45 gm.x4.1 (cal. value 1 gm.) | 184.5 calories |
| Protein | 3.5%x1000 gm. 35 gm.x4.1 (cal. value 1 gm.) | 143.5 calories |
| Total value one liter of milk | | 700 calories |

The following table gives the necessary values for making up a standard milk dietary:

| | Grams | Ounces | Calories | Grams Protein |
|---|---|---|---|---|
| Milk | 1000 | 32 | 700 | 35 |
| | 250 | 8 | 170 | 8 |
| | 30 | 1 | 20 | 1 |
| Cream | 500 | 16 | 1000 | 18 |
| | 30 | 1 | 60 | 1 |
| Milk sugar | 250 | 8 | 1000 | ..... |
| | 30 | 1 | 125 | ..... |
| | 18 | 1 (vol.) | 75 | ..... |
| Cane sugar | 50 | One flat tablespoon | 100 | ..... |
| | | One lump | 16 | ..... |

Patients in hospital practice are usually seen about the fourth or fifth day, having often been neglected, and having lost considerable weight, perhaps 10 or 15 pounds.

The first day a milk diet is ordered, 6 ounces every three hours, which is about 1½ quarts in the twenty-four hours, having a caloric value of 1,000.

The second day a diet is given of approximately 1,500 calories, consisting of:

| | | | |
|---|---|---|---|
| Milk | 1500 c.c. | 1½ qts. | 1050 calories |
| Cream | 120 c.c. | 4 ounces | 240 calories |
| Milk sugar | 40 gm. | 1½ oz. sugar sol.* | 200 calories |
| | | | 1490 calories |

*The sugar solution is one ounce of milk sugar dissolved in one ounce of water.

This makes eight feedings, each of:

| | | |
|---|---|---|
| Milk | 180 c.c. | 6 ounces |
| Cream | 15 c.c. | ½ ounce |
| Milk sugar | 5 gm. | 1½ drams sugar sol. |

The third day about 2,000 calories, consisting of:

| | | | |
|---|---|---|---|
| Milk | 2000 c.c. | 2 quarts | 1400 calories |
| Cream | 120 c.c. | 4 ounces | 240 calories |
| Milk sugar | 80 gm. | 2½ oz. sugar sol. | 312 calories |
| | | | 1952 calories |

This makes eight feedings, each of:

| | | |
|---|---|---|
| Milk | 210 c.c. | 7 ounces |
| Cream | 15 c.c. | ½ ounce |
| Milk sugar | 10 gm. | 2½ drams sugar sol. |

On the fifth day approximately 2,200 calories:

| | | | |
|---|---|---|---|
| Milk | 2000 c.c. | 2 quarts | 1400 calories |
| Cream | 250 c.c. | 8 ounces | 500 calories |
| Milk sugar | 80 gm. | 2½ oz. sugar sol. | 312 calories |
| | | | 2212 calories |

This makes eight feedings, each of:

| | | |
|---|---|---|
| Milk | 210 c.c. | 7 ounces |
| Cream | 30 c.c. | 1 ounce |
| Milk sugar | 10 gm. | 2½ drams sugar sol. |

At this point the milk dietary is supplemented by other feedings, and articles are added one by one, the attempt being made to find things agreeable to the patient's taste. The dietary will be resumed following the ensuing table, which gives the caloric values, and protein content of the extra foods which can be used:

| | Ounces | Grams | Calories | Grams Protein |
|---|---|---|---|---|
| Egg (one) | 2 | 60 | 80 | 7 |
| Bread (ordinary slice) | .... | 33 | 80 | 2 |
| Toast | .... | 33 | 80 | 2 |
| Crackers | 1 | 30 | 118 | .... |
| Butter (one pat) | ½ | 15 | 100 | .... |
| Cereal cooked (one serving) | 3 | 90 | 100 | 3.5 |
| Potato (one medium) | .... | .... | 85 | .... |
| Junket (one serving) | 6 | 180 | 200 | 3.5 |
| 1 ounce milk sugar<br>5 ounces milk<br>½ junket tablet<br>1 ounce cold water<br>Vanilla to flavor | | | | |
| Cocoa with milk | 6 | 180 | 315 | 4 |
| 1 rounding teaspoon cocoa<br>1 ounce milk sugar<br>4 ounces milk<br>1 ounce cream | | | | |
| Coffee | .... | .... | 300 | 2 |
| 2 ounces cream<br>1½ ounces sugar | | | | |
| Ice cream | 5 | .... | 520 | 7 |
| Cane sugar (one flat tablespoon) | .... | .... | 100 | .... |
| Baked custard | .... | 50 | 360 | 7 |
| 1½ ounces milk sugar<br>6 ounces milk<br>One egg<br>Vanilla | | | | |
| Soft custard | .... | .... | 500 | 7 |
| 8 ounces milk<br>1 egg<br>2 ounces milk sugar<br>Vanilla, salt, caramel | | | | |
| Bread pudding | .... | .... | 560 | 7 |
| 1½ ounces of milk sugar<br>6 ounces milk<br>1 egg<br>1 slice bread<br>½ ounce butter | | | | |
| Lemonade | .... | .... | 480 | .... |
| 4 ounces milk sugar | | | | |
| Applesauce | 3 | 90 | 90 | .... |
| Rice boiled | 3 | 90 | 360 | 3.5 |
| Malt soup (Loefflund's) | 32 | 1000 | 720 | .... |
| Malted milk (in 1 quart water) | 4 | 1000 | 495 | .... |
| Broth | 8 | 250 | 64 | .... |
| Beef juice | 3 | 90 | 25 | .... |
| Buttermilk | 32 | 1000 | 350 | 32 |
| Whey | 32 | 1000 | 450 | 20 |
| Zoolak | 32 | 1000 | 620 | 39 |
| Koumyss | 32 | 1000 | 400 | 20 |
| Whiskey | 1 | 30 | 85 | .... |
| Alcohol | 1 | 30 | 210 | .... |

Alcohol is isodynamic with 23 grams of fat, and with 52 grams of carbohydrate.

Fruit may be given except when diarrhea exists.

To revert then to the standard dietary; on the sixth day about 3,000 calories are given:

| | | | |
|---|---|---|---|
| Milk..... | 1500 c.c. | 1½ qts. | 1000 calories |
| Cream..... | 125 c.c. | 4 ounces | 250 calories |
| Milk sugar.... | 125 c.c. | 4 ounces | 500 calories |

In seven feedings, at 9 A.M., 1, 3, 7, 9, 12 P.M., and 4 A.M., each feeding consisting of:

| | | | |
|---|---|---|---|
| Milk..... | 180 c.c. | 6 ounces | |
| Cream..... | 15 c.c. | ½ oz. | |
| Milk sugar.... | 15 c.c. | ½ oz. | |

At 7 A.M.:

| | | | |
|---|---|---|---|
| Toast (one slice) | | | 80 calories |
| Butter..... | 15 gm. | ½ oz. | 100 calories |
| Egg (one)..... | | | 80 calories |

At 11 A.M.:

| | | | |
|---|---|---|---|
| Egg (one)..... | | | 80 calories |
| Bread (without crust) | | | 100 calories |
| Butter..... | 15 gm. | ½ oz. | 100 calories |
| Junket..... | 180 gm. | 6 ounces | 200 calories |

At 5 P.M.:

| | | | |
|---|---|---|---|
| Toast..... | | | 80 calories |
| Butter..... | 15 gm. | ½ oz. | 100 calories |
| Cereal..... | 90 gm. | 3 oz. | 100 calories |
| Cream..... | 60 gm. | 2 oz. | 120 calories |
| Milk sugar.... | 15 gm. | ½ oz. | 60 calories |
| Total calories..... | | | 2950 |

By the gradual addition of different foods the fuel value is raised after a few days to 4,000 calories, as follows:

| | | | |
|---|---|---|---|
| Milk..... | 1500 c.c. | 1½ qts. | 1000 calories |
| Cream..... | 420 c.c. | 16 oz. | 480 calories |
| Milk sugar.... | 70 gm. | 2⅓ oz. | 280 calories |

In seven feedings at 9 A.M., 1, 3, 7, 10 P.M., 1 and 4 A.M., each feeding to consists of:

| | | | |
|---|---|---|---|
| Milk..... | 180 c.c. | 6 oz. | |
| Cream..... | 60 c.c. | 2 oz. | |
| Milk sugar.... | 10 gm. | 2½ drams sugar sol. | |

At 7 A.M.:

| | | | |
|---|---|---|---|
| Egg (one)..... | | | 80 calories |
| Toast (one slice) | | | 80 calories |
| Butter..... | 15 gm. | ½ oz | 100 calories |
| Coffee..... | | | |
| Cream..... | 60 c.c. | 2 oz | 120 calories |
| Lactose..... | 15 gm. | ½ oz. | 60 calories |

At 11 A.M.:

| | | | |
|---|---|---|---|
| Egg (one)..... | | | 80 calories |
| Toast or bread | | | 180 calories |
| Butter..... | 15 gm. | ½ oz | 100 calories |
| Mashed potato | 15 gm | ½ oz. | 15 calories |
| Custard..... | 120 gm. | 4 oz. | 250 calories |
| Coffee..... | | | |
| Cream..... | 60 gm. | 2 oz. | 120 calories |
| Lactose..... | 15 gm | ½ oz. | 60 calories |

At 5 P.M.:

| | | | |
|---|---|---|---|
| Egg (one)..... | | | 80 calories |
| Cereal..... | | | 100 calories |
| Cream..... | 60 gm. | | 120 calories |
| Applesauce.... | 30 gm. | | 30 calories |
| Tea..... | | | |
| Cream..... | 60 gm. | | 120 calories |
| Lactose..... | 15 gm. | | 60 calories |
| Total calories..... | | | 3770 |

For still higher values we give the following 4,500 calories:

| | | | |
|---|---|---|---|
| Milk..... | 1260 c.c. | | 860 calories |
| Cream..... | 420 c.c. | | 840 calories |
| Milk sugar.... | 105 gm. | | 440 calories |

This is given in seven feedings, 9 A.M., 1, 3, 7, 10 P.M., 1, and 4 A.M. By doubling the bread, butter, cream, and milk sugar in the foregoing table, 4,500 calories may be given.

In the majority of cases 4,500 calories is a sufficient quantity, but higher feedings may be used if thought best. In private practice the hours for feeding will be changed, as it is not necessary to get started so early as in hospital routine work.

In private practice, also, circumstances may be such that we find it impossible to give solid food; owing to refusal on the part of the patient, or perhaps on the part of the family, we must confine ourselves to fluids, and high values may be given according to the foregoing tables. Where milk disagrees, as it sometimes does, or where it appears as curds in the stools, values may be kept up upon some such diet as the following:

| | | | | |
|---|---|---|---|---|
| Malted milk..... | 7 oz. | 4, 8 A.M., 8, 10 P.M. | 28 oz. | 300 calories |
| Cream..... | 1 oz. | | 4 oz. | 240 calories |
| Malt soup..... | 7 oz. | | 28 oz. | 600 calories |
| Cream..... | 1 oz. | 11 A.M., 6, 9, 12 P.M. | 4 oz. | 240 calories |
| Milk sugar..... | ½ oz. (10 gm.) | | 40 grams | 160 calories |
| Milk peptonized. | 7 oz. | 10 A.M., 4 P.M. | 14 oz. | 280 calories |
| Cream..... | 1 oz. | | 2 oz. | 120 calories |
| Milk sugar..... | ½ oz. (10 gm.) | | 20 grams | 80 calories |
| Coffee: | | | | |
| Cream..... | 2 oz. | | | 120 calories |
| Lactose..... | ⅓ oz. (10 gm.) | | | 40 calories |
| Beef juice..... | | | | |
| Junket..... | | 12 M. | 3 oz. | 200 calories |
| Coddled egg..... | | 1 P.M. | | 80 calories |
| Ice cream..... | | 2 P.M. | 5 oz. | 520 calories |
| Barley jelly..... | | | 3 oz. | 100 calories |
| Cream..... | | 5 P.M. | 2 oz. | 120 calories |
| Lactose..... | | | 10 grams | 40 calories |
| Eggnog..... | | | 7 oz. | 140 calories |
| Cream..... | | 3 P.M. | 1 oz. | 60 calories |
| Lactose..... | | | 10 grams | 40 calories |
| Beef broth..... | | 2 P.M. | 8 oz. | 60 calories |
| Total calories..... | | | | 3540 |

I have collected twenty-nine cases occurring on the Second Division of Bellevue Hospital, during the summers of 1911 and 1912, and my results are based on an analysis of these cases.

The *quantity* of food taken is of great importance, and depends upon the requirement of each individual case; every patient should be given as much as he will take and digest without being forced; aversion to food is often dependent upon lack of variety, and a person will often be tempted by liberal feeding when milk would be declined; nausea, vomiting, distention, diarrhea, undigested milk in the stools, all call for a change of feeding if they are present. Considerable skill is required for the successful feeding of high fuel values, for all patients can not be fed alike, and the prejudices of health remain in disease; feeding can be best done by a skilled nurse who is constantly at the bedside, who prepares the food, who knows the likes, dislikes, and whims of the patient, and who can provide the proper fuel values; if a skilled nurse is not available, the physician must himself oversee the feedings, and reckon daily the caloric value of the food taken.

*Weight.*—The loss of weight depends, generally speaking, upon the amount of food taken; under the old period of fluid diet, patients lost from 15 to 25 or more pounds during their illness; but with sufficient food the loss is rarely more than 10 pounds in severe cases; in moderately severe cases the loss is slight, and not infrequently patients will gain weight. As examples of this maintenance of weight, one patient lost 5 pounds in a febrile period of forty-four days; another, during the relapse of a fifty-three-day period gained 3 pounds; another lost 2 pounds in the relapse of a fifty-five-day period; one gained 6 pounds during a febrile period of thirty-eight days; another lost 3 pounds in a twenty-one-day period; these losses are all insignificant. Most patients will show considerable loss before coming under observation, but after the diet is established the weight can be held within a few pounds in practically all cases, and when allowed out of bed, all patients weigh considerably more than on admission.

*Vomiting* seldom proves a contraindication to the feeding of high fuel values; if any article prove to be distasteful, the patient will soon complain of it and it can be stopped; if vomiting continues the diet is to be stopped until the stomach is quiet and

then resumed; one of my patients took and enjoyed 3,500 calories after suspension of food for vomiting. Severe and persistent vomiting from intoxication makes a different complication, as patients vomit frequently, either everything taken, or else vomit often and seemingly regardless of any particular article. We had one man severely ill and of prolonged course, who vomited frequently but not always the same article of food, and was as apt to vomit water as anything else; this patient was vomiting before admission and it was not due to indiscretion in feeding but to toxicity; he finally died after an illness of fifty-three days, vomiting until the end. Toxic vomiting is always a bad sign and augurs trouble.

*Diarrhea* is not common; it may be due to an excess of fat which can be easily stopped.

*Distention,* if due to milk sugar, is not relieved by the ordinary means, so the sugar can be reduced; these conditions are not common, however, as patients get accustomed to fat and milk sugar and take and handle them well.

*Hemorrhage.*—In the twenty-nine cases cited here there were four cases of hemorrhage, two of which were large and fatal; one of these was an alcoholic subject who had delirium tremens on admission. Hemorrhage occurred in 11 per cent. of Coleman's cases, only one dying, however; to quote Coleman's opinion of hemorrhage, "If the patient be in good nutrition the loss of blood affects him no more than it does a healthy man."

*Relapse.*—Rudisch[10] found the number of relapses to be 8.4 per cent. among 974 cases, prior to the time of high calory feeding. Kinnicutt, in an examination of 600 liberally fed, found relapse no more common than with a low diet which is variously estimated at from 8 to 12 per cent. Coleman[9] had 20 per cent. of relapses among his 111 cases from the Second Division of Bellevue Hospital, but upon investigating the number on the other divisions of the hospital for the same time found these to be 26 per cent., so he concludes that high caloric feeding has but slight influence on the incidence of relapse. My own feeling is that it makes but little difference; cases liberally fed and those lightly fed, seem to relapse equally; there were four relapses in my twenty-nine cases.

*Perforation.*—I had no cases. Crohn reported none in the Mt. Sinai cases. Coleman had one in 111 cases.

*Convalescence.*—Crohn[11] reports that the cases treated at Mt. Sinai Hospital, New York, were allowed to sit up in bed the day the temperature struck normal, and that one or two days after this they were allowed up in a chair; that ten to fourteen days after reaching normal they were discharged from the hospital. I have had no experience with such short periods of convalescence as this, but I do know that the time is shortened and the tedium much relieved. I can not see that liberal feeding makes any difference in the duration of the illness; we had cases of thirty-eight, forty-four, forty-six, fifty-three, and fifty-five days' duration, fed from 3,500 to 4,500 calories.

Of complications other than those named above, there was one phlebitis and one cholecystitis.

*Mortality.*—In speaking of this subject I can do no better than quote Coleman's figures of the cases occurring in Bellevue and allied hospitals from 1907 to 1910 inclusive. There were 102 cases liberally fed with a mortality of 10.7 per cent., there were 773 cases fed otherwise with a death rate of 16.5 per cent. These cases all occurred during the same years and were taken from the same institutions, drawing the same class of society. Of my twenty-nine cases, three died, approximately 10 per cent.; of these one died of hemorrhage, one other also died of hemorrhage who was alcoholic and who was on a low calory diet only; one died who had persistent vomiting both before and after admission, and who had but little feeding of any kind.

*Conclusions.*—The feeding of high fuel values show a cleaner, moister tongue, more comfortable mouth, less offensive breath, less emaciation, less nervous exhaustion which was shown by continuous muttering and constant picking at the bedclothes, a cleaner, healthier skin, greater comfort, less diarrhea, probably lessened mortality, and fewer complications. The most evident features of the high calory feeding, are the sustenance of weight and nutrition, and the amelioration of hunger, and the lessened tedium of convalescence.

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616 MADISON AVENUE.

## GRADUALLY DEVELOPING HEMIPLEGIA DUE TO A CEREBRAL NEOPLASM.

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THE focal symptoms of brain tumor usually develop gradually. This may occur even when the cardinal symptoms are all absent. The following case illustrates a little-known symptom complex, frequently diagnostic of brain tumor.

The patient, M. M., about six weeks before her admission to the hospital complained of numbness and loss of power in the middle and ring fingers of her left hand. This was followed one week later by a spasm in the left arm and some loss of power, which gradually increased. A little later she complained of pain in the thigh and weakness in the lower limb. At the time of admission to the hospital the left arm was paralyzed and the left leg was weak, though she could drag the limb in walking around the ward. The paralysis gradually increased in the lower limb until she was compelled to remain in bed.

One week previous to her admission she complained of headache. The eye grounds were normal. Her previous medical history showed that she had had a complete hysterectomy one year before.

*General Examination.*—Well-nourished woman, no enlargement of the glands, heart dullness normal, no murmurs; lungs normal. Pupils equal, react to light and accommodation, no palsies of the ocular muscles. The left side of the face is smoother than

the right. Does not draw up the corner of the mouth so well on the left. There is no anesthesia of the face. The left arm is completely paralyzed. She can move the left leg but very slightly. Biceps and patellar tendon reflexes are exaggerated on the left side. Babinski sign is obtained on this side. There is slight analgesia of the left arm and leg. Patient is somewhat drowsy and complains of her head.

Repeated examinations extending over a month failed to reveal any other symptom save that the left-sided paralysis was more complete. The eye grounds remained normal.

She was trephined over the right Rolandic area. No sign of a tumor could be found. Following the operation the patient gradually became emaciated and died several weeks later. An eye-ground examination during this time showed some choking of the discs.

At necropsy the brain showed no evidence of tumor in any portion of the surface of the right hemisphere. The dura at the site of the operation was widely separated and the tissue beneath showed some softening and exudate.

After the brain had been hardened in formalin solution no changes were noted on the horizontally cut surface, with the exception of a small area of softening near the lateral ventricles on the occipital lobe. Portions were taken for microscopical study from this area and from the right Rolandic area just beneath the site of the operation. These areas showed epithelial cells arranged in nests sharply defined from the brain tissue. The diagnosis was adenocarcinoma; probably secondary from the fact that it was multiple.

In a study of this case we find that the chief feature was a gradually developing hemiplegia, extending over a period of several months. In its onset the sudden involvement of the various portions of the upper extremity resembles a thrombotic process.

The cardinal symptoms of tumor, choked disc, and vomiting were absent during the first months. Headache occurred only late in its course, while choked disc did not come on until after operation, and about one month before death.

T. R. Williamson, in 1904, first called attention to the fact that progressively developing hemiplegia was an important sign of brain tumor. In his paper he states that it is well known that when hemiplegia is produced by a brain tumor situated in the motor cortex or white matter of one cerebral hemisphere, the onset of the paralysis is gradual. The movements of one portion of a limb becomes weak, the weakness increases steadily. It may be weeks or a few months before the paralysis is complete. "Headache, vomiting, and double optic neuritis are also present. In such cases, provided there are no indications of suppurative disease in any part of the body and no indication of cerebral abscess, the diagnosis of cerebral neoplasm is certain. But it is not so well known that progressive hemiplegia of the nature just described is an almost certain sign of cerebral tumor, even in the absence of optic neuritis, headache, and vomiting, provided there are no indications of abscess." He reported three cases. In the first case, the person suffered with headache and vomiting for six months previous to her admission in the hospital. The paralysis began in the leg and extended to the arm. Three months elapsed before the paralysis was complete. Optic neuritis was absent. Drowsiness was present.

In the second case vomiting and headache were absent until a month before death. Optic neuritis was absent. The mental condition was peculiar.

The third case showed no headache, vomiting, or optic neuritis. Drowsiness was marked. Only one case of the three showed an absence of all the cardinal symptoms.

In 1908 Souques reported a case of gradually developing hemiplegia with absent cardinal symptoms.

This symptom complex may be present in several other conditions, according to Spiller, who believes that Williamson has expressed his opinion too forcibly. In 1909 he called attention to this syndrome and commenting on it, he states, "A gradual developing hemiplegia I have seen as a symptom of polioencephalitis. Cortical meningitis may cause a gradually developing hemiplegia, and the meningitis may be purulent or of other type." He also reported three cases of gradually developing hemiplegia due to tumor.

Spiller has also seen thrombosis of the middle cerebral artery cause a gradual increase in the symptoms as seen in tumor, but usually when thrombosis is the cause, the development of the symptoms is more rapid.

One of us has recently seen a case of gradually developing hemiplegia in which the hysterical manifestations obscured the diagnosis. It was not until several months after the onset of the symptoms that a slight blurring of the eye grounds presented evidence of increased cerebral pressure.

Slight clouding of the consciousness or drowsiness seems to be present in most of the cases which showed a gradually developing hemiplegia. Of pathological interest was the fact that no tumor could be detected grossly, and that only after microscopical studies were made could the diagnosis be confirmed. The presence of two nodules in separate areas of the brain indicated the metastatic character of the growth. The carcinoma cells were arranged in nests which were sharply defined from the surrounding brain tissue. The nodules were subcortical, which explained the absence of any surface changes.

## STATE CARE FOR MENTAL DEFECTIVES.

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At a recent meeting of the pediatric section of the Academy of Medicine, the subject of the care of mentally defective persons was discussed. Dr. Charles L. Dana presented the plan of a State Commission for Defectives, similar to the Commission in Lunacy of the State of New York, having powers which shall enable it to bring about suitable care and segregation for defectives, thus preventing the increase of the defective by reproduction. It was stated that the number of mentally defective persons to be found in New York State alone at the present time is about 30,000, of whom 4,000 are under proper supervision. After several interesting papers had been read the subject was discussed, Commissioner of Charities Hebberd and Mr. Angus Thorne, of the Department of Charities, entering into the discussion. These gentlemen advocated care of defectives by the Department of Charities of city and State, saying that the matter could be best handled in this way, with the assistance of special legislation to aid in obtaining legal control of these unfortunates.

It appears to the writer that such control could

be exercised by the Department of Charities and the State Board of Charities only in so far as the mentally defective children, or adults were from the poorer classes, whose relatives are unable to care for them in their homes, and are obliged, however unwillingly, to place them in institutions. The first great obstacle to the care of mentally defective children would be presented in the fact that the words "Department of Charities" or "State Board of Charities" would be a sufficient reason among most taxpayers for a refusal to place their children under such care. The writer has been a medical school inspector under the New York Health Department for some fourteen years, meeting these children during all of that time, and having studied the question for over two years with reference to two ungraded classes in the public schools of Woodhaven and Richmond Hill. These towns are located in the Borough of Queens, just outside the Brooklyn city line. Richmond Hill is occupied by the families of business men who travel daily to Manhattan for their business. It is not at all uncommon when the medical inspector of the Health Department employed in the schools sends home a note requesting treatment for some physical defect, or some contagious skin disease, to receive a note stating that the parents have no need of the services of the medical inspector, and will thank her to mind her own business. Should the words "Randall's Island" or "Department of Charities," with reference to the care of a mentally defective child in Plublic School No. 90, where one ungraded class is located, be so much as spoken it would call forth a storm of protest from the parents, and the statement that they are taxpayers, abundantly able to support and care for their children, and would scorn to accept assistance from city or State. This statement would be quite true. It would seem that the gentlemen who are constantly employed in administering the city charities have forgotten the attitude of the mass of citizens of New York, with reference to "the Islands," and the acceptance of city money as a charity. However much the citizens may be desirous of obtaining those moneys in the way of graft, they are not desirous of accepting them as charity. This is simply an example of the condition which obtains in all towns outside of our great metropolis. Except among the very poor, a family having a mentally defective child will strain its resources, if need be, to place the child in a private institution rather than in a public one. A few examples personally known to me will show the social position of some mental defectives. I have a personal knowledge of two such persons maintained in private institutions who are children of professors in prominent colleges, one the son of abundantly wealthy parents. Neither of them could be allowed at large without peril to themselves and the community. Imagine an attempt to place these two boys under the care of the State Board of Charities! Nor would it be just to so place them. The care which their parents are able to obtain for them in private institutions is far better and far different from that which could be given them under a board of charities. Thus, it would seem at once that we must have a board that has not the hated word "Charities" in its title, if we are to secure the cooperation of the mass of the public, either in city or country. In a small town care by a board of charities is generally administered by the overseers of the poor, or at the almshouse. It is considered a public disgrace to get into the hands of either class of officials.

Another reason for not placing these unfortunates under the care of a board of charities is that it is the manifest duty of such a board to care for the poor only, allowing the better off "taxpayer" to maintain at his own expense the unfortunate members of his own family. The State should not be burdened with such an expense as the care of 30,000 mental defectives would entail. The greater part of the expense outside the large cities should be borne and would gladly be borne by the private individual. But it is necessary that we have some central authority which will be able to use authority and legal force where it is necessary to bring the mental defective under proper care. It takes the parents of some high-grade defectives, and they are the defectives who are dangerous to society, several years of schooling for the child in a graded class to convince him that mental defect exists, and that the special care of an ungraded class is necessary to develop his mind at all. I have in mind two mentally defective children of a very intelligent member of the city detective force, attached to the Brooklyn central office, who were passed for an ungraded class more than a year ago, and who are still sitting in graded classes because the father cannot be convinced that they need, and would be benefited by transfer to an ungraded class in a public school. It is the opposition of the parents that must be overcome by a centralized authority before we can have even proper education for the mentally defective child, much less custodial care or sterilization.

It appears to the writer that we have need of a much wider campaign of education of public opinion in this matter of the care of mental defectives than is at present being carried on. The expert who has studied this matter, the intelligent physician and neurologist, the advanced social worker are alive to the necessity of custodial care and the desirability of preventing reproduction of the unfit. But the average citizen understands nothing of this and resents any interference in the matter. To him it seems an unwarrantable trespass on the prerogatives of a free citizen of our great democracy to even suggest custodial care for the weaker members of his family. Anyone who has ever worked under a city department knows how hard it is to secure even the most simple changes in the direction of increased hygienic facilities or sanitary reforms in the most enlightened communities without a wide educational propaganda, and sometimes a costly epidemic to point the moral.

For the care of mental defective in the State of New Jersey, Mr. E. R. Johnstone, of the Vineland school, has suggested the following plan: 1. All feeble-minded children from 6 to 12 years of age, except idiots, should be placed in ungraded classes in the public schools the parents thus bearing the expense of feeding, housing and clothing them. 2. In each important city an institution should be established to care for those between the ages of 12 and twenty, which should be under the care of the educational authorities. Here the expense is borne by the municipality. 3. Those over 21 should be cared for at a State institution. 4. All idiotic cases should be cared for in such State institution or in almshouses. This seems to me a feasible plan for the State of New York as well. First of all a State commission to exercise the necessary authority over parents. Then the establishment of an ungraded class in every town, or in every school in a city. If the principals and teachers will educate themselves

in this matter and will carefully sift and classify their pupils, they will generally find material for an ungraded class in any good sized school. Where there are several small schools under one school board, one ungraded class may be enough among them all. From 12 to 20 years of age each municipality can establish a home under the educational authorities in which the remaining young people can continue their educational training. Next, State institutions, Letchworth Village, Craig Colony, or a newly established institution for mental defectives can care for the older ones and the idiots.

New York City, with its well established system of ungraded classes in schools, due to the untiring work and zeal of Miss Elizabeth Farrell, can well take care of all but the very low grades, those being sent to Randall's Island. The writer saw in an ungraded class this week a Mongolian idiot of some six years growth who was quite unable to enter into any of the class work, and was simply a burden to the teacher. State control could have forced his parents to place him on Randall's Island and thus have made a vacancy in the class for one of the three children on the waiting list of that ungraded class.

For the reasons here elaborated the writer would submit that no satisfactory control over mental defectives can be exercised by boards of charities, and that a central authority, such as a State commission, is absolutely necessary to exercise the desired authority over the parents. The expense of such care should be borne by the parents, the municipality and the State jointly, according to the age and degree of mentality of the patient, and the financial standing of the parents. All that can be done in the way of education can be done by the regular school authorities. Lastly, let us at once begin, through public health education committees, medical societies, social clubs and other agencies, a widespread campaign of education of the public in the line of educational and custodial care and segregation of mental defectives.

15 Halstead Place.

## THE MEDICAL TREATMENT OF APPENDICITIS.

By BEVERLEY ROBINSON, M.D.,

NEW YORK.

The following is an earnest plea for great conservatism, as opposed to the prevailing, and as I believe, erroneous judgment of frequent operations almost as soon as the diagnosis is made. The rules of medical treatment given by me are, in my opinion, eminently judicious and safe, but especially so, for all travelers in localities in which experienced surgeons and modern hospitals are not found.

Rest on back in bed. Liquid food; enemas of warm water and sweet oil to move the bowels. (Mix oil with yolks of egg, add water and stir.) Use plenty of oil—6 to 8 tablespoonfuls not too much. Give enemas with fountain syringe (preferably) or Davidson's syringe, with the patient on the left side, near the edge of the bed, the knees drawn up; retain the enema a little while unless there is much griping or increased pain. In that case let the enema come away and repeat later. Give from a pint to a quart, or more, of liquid with each enema, to wash out the lower bowel thoroughly. It is desirable to attach to the metal or hard rubber tube of the syringe a short soft rubber tube about six inches long and half inch caliber for enemata. Before introducing the tube into the bowel see that the air is expelled and that liquid is coming out of tube.

Apply locally over the belly, warm flannels wet and wrung out with alcohol and water (one part alcohol, three parts warm water). Cover the wet flannel with rubber tissue. When the flannel is dry wet it again with alcohol and water.

Give codeine tablets, grain 1/10, every two hours until the pain is notably less; then less frequently.

There must be no transport from the bed or sitting up, so long as pain in the belly continues and even if there be little or no fever.

Give cracked ice and the best brandy for nausea or weakness, a teaspoonful frequently. Give the best and most nutritious liquid foods, *i.e.* strong broths or milk alternately or mixed together. Of these, one or more ounces every two hours should be given, when prostration is present. These would preserve life for many days.

Operation is absolutely forbidden during the acute period, unless a good surgeon is present and the conditions for operation are favorable. In the vast majority of cases a "cure" will be established in several days. Later on, in the interval or quiescent period, operation may be indicated, when the patient seems practically well, except for the experience of the acute attack. Operation may be done then at home or in a modern hospital.

42 West Thirty-seventh Street.

## Medicolegal Notes.

**Provision for City Bacteriologist.**—The Washington statutes provide for the creation of city boards of health, but the provisions are not to apply to any city in which a board of health is organized and a health officer appointed under a special charter. The charter of Spokane provided for a board of health, and an ordinance of February, 1910, provided for the appointment by the board of a bacteriologist. One was appointed. In December, 1910, the city adopted a new special charter, not providing for any board of health. The mayor then notified the bacteriologist that his services as such were at an end. He commenced an action to compel his reinstatement. It appeared that a new bacteriologist was appointed by the city to succeed him, employed, it was presumed by the court, by the board of health subsequently organized under the general laws of the State. It was held that the new charter repealed the old charter provisions for a board of health, and that the ordinance providing for a city bacteriologist was abrogated. Two judges dissented, on the ground that the appointment of a bacteriologist to succeed the complainant precluded the city from asserting that the office did not exist under the new charter.—State v. Hindley, Washington Supreme Court, 121 Pac., 447.

**Insurance—Proofs of Death.**—In an action on a policy of life insurance it appeared that the application for insurance contained a representation that the deceased had consulted no doctor or had any ailment within five years of the date of the application, except that she had consulted a physician for grippe three years before. After the death of the insured, the beneficiary filed as proof of death a certificate from the attending physician stating that the immediate cause of the death of the insured was chronic nephritis and chronic hepatitis. After this certificate was filed, the insurance company sent the beneficiary a blank certificate, also entitled "Proof of Death," with the request that she have it executed by a certain Dr. Chapman, who, it appeared, had previously attended the insured. The beneficiary requested Dr. Chapman to execute this certificate, and the latter filled in the blanks, verified the certificate, and returned it to the beneficiary, who filed it with the insurance company. The certificate contained the statement that the affiant had on two occasions treated the insured for nephritis within two years of the signing of the application, thus contradicting the statement in the application. It was held that the beneficiary by her action had not only made Dr. Chapman her agent, but had ratified his authority by filing the certificate. His statement was, therefore, binding on her.—Leonard v. John Hancock Mut. Life Ins. Co., 135 N. Y. Supp. 564.

MEDICAL RECORD.

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## THE THERAPEUTIC DILEMMA AND ITS PSYCHOLOGICAL BASIS.

WITH the increasing precision in diagnosis and treatment characteristic of modern medicine, there is a correspondingly diminishing reliance on the expectant method of combating disease. The doctrine of *laissez faire* in political economy has furnished a seductive analogy to the passive attitude of those who would place an undue emphasis upon nature's own curative powers. The secret of therapeutic success lies in appreciating when to interfere and when not to interfere in the natural evolution of a pathological process. The problem, in brief, is one of individual judgment. Upon this supreme mental faculty success in the practice of the healing art ultimately depends. The wealth of knowledge gleaned from the stores of a world's literature cannot take the place of that practical experience which is valuable in proportion as it develops the power of discrimination.

In spite of the exercise of this rare gift, the clinician is frequently compelled to halt in the presence of a problem which even his ripe experience will not enable him to solve. Two courses of action may be open. Yet different decisions will be rendered by men of similar experience and professional standing. This difference of opinion may be attributed to the imperfection of medicine as a science. Nevertheless, there are instances in which two different sets of indications may be present in an individual case. A consultation between men of nearly equal eminence may lead to the discovery of one or more facts which will throw added weight on one side of the dilemma and this course of action is then decided upon.

Instances of this duality of therapeutic indications will readily suggest themselves to every practitioner. They arise in the practice of general medicine, of surgery, and of the specialties. Thus, during the course of an acute otitis media, the drum membrane may be highly inflamed though not bulging, and there may be evidence of the presence of fluid in the tympanic cavity. Yet there may be a difference of opinion among otologists of equal experience as to whether it is necessary or not to perform myringotomy. Some will advocate early incision of the drum membrane as a safe measure in miminizing the possibility of complications. Others will counsel waiting, at the same time that the patient is closely watched so that if the inflammatory symptoms do not subside under local and constitutional revulsive treatment, or if bulging of the tympanic membrane occurs, there can then be no question as to the necessity of performing paracentesis. Similarly the problem may arise whether in a given case of mastoiditis it is wise to wait for spontaneous recovery or whether it is safer to operate. Fortunately with the newer methods of laboratory and *x*-ray examination this problem is not as difficult as it was several years ago, nevertheless, one may cite instances of mastoid operations needlessly performed and at the same time instances of fatalities that might have been avoided by a timely operation. In general, the dictum: "When in doubt, operate" holds true here as in other branches of surgery.

The circle of those who counsel waiting in the presence of a case of appendicitis is fortunately growing smaller and smaller. The insidious nature of this disease and the fact that clinical signs may fail to reveal the exact condition of a morbid appendix, point to the operative treatment as the only safe one. Nevertheless, this need of surgical intervention increases the responsibility of the surgeon in ruling out other causes of pain in the right iliac fossa, for the instances are not few in which a case of Henoch's purpura or of pneumonia has been mistaken for one of appendicitis.

The obstetrician is confronted with his own set of dilemmas. One may cite an example in the two attitudes with respect to the management of a case of occipito-posterior presentation of the vertex. There are many accoucheurs of experience who will give the natural forces of the patient an opportunity to rotate the occiput to the front. On the other hand, there are those of equal eminence who counsel early interference—who advocate a forcible manual rotation of the child's head as soon as the cervix will admit the hand of the obstetrician. Which course shall be pursued is dependent largely upon the skill of the latter in accomplishing what may be an extremely simple procedure in experienced hands. Nevertheless, the average general practitioner will prefer to give nature a chance in effecting, at least in some of these cases, a spontaneous delivery.

It is unnecessary to multiply examples of the dilemma in therapeutics. There are certain psychological elements that must be understood if one would correctly gauge the difficulties in these cases. It is impossible to eliminate from the discussion of this subject the question of the personal factor of the physician himself. A recent disastrous result of the so-called expectant treatment may be the cause of an attitude of timidity on the part of the physician or may determine an early operative interference on the part of the surgeon. There are alarmists in the healing art who look on the darkest side of every case, and there are, at the same time, those whose optimism may blind them to important danger signals. The happy mean between the conservative and the radical is, after all, the rarest attainment in the mental equipment of the physician.

It is important that every one who aspires to treat his fellow man should know his own limitations. These may be a lack of scientific knowledge or manual dexterity, a natural timidity or daring, an unreliability of judgment, an overweening self-reliance, or a lack of confidence in one's own powers. With this realization of the personal factor, the solution of the therapeutic problems that present themselves is greatly facilitated, for the ultimate decision may then be tempered or modified by the knowledge of the personal bias that influences the judgment, if only to a slight extent.

The most important means of narrowing the circle of the therapeutic dilemmas is the extension of scientific knowledge. In the treatment of disease there can be only one "strictly right" method. So-called alternative methods either are identical or of different degrees of merit, or they may all be wrong. The last is more apt to be the case when the methods of treatment are particularly numerous. The sharper demarcation of the etiological factors in disease causes a corresponding limitation of the methods of treatment. However exact one's knowledge of disease may be, this knowledge cannot take precedence over good judgment. "Knowledge comes, but wisdom lingers."

## THE ROLE OF WOMAN.

In these days woman is very much in evidence. In this country, more than in any country, she has taken a definite place in industrial and professional life, and there are now few pursuits in which she does not compete with man. In Great Britain, although women are not so conspicuous as wage earners, they are more prominent by far in the field of politics, and have become a force to be reckoned with by statesmen. Some think that they have gone out of their proper sphere, and that they and the race at large will suffer by the departure from long-held customs and habits, while others are of the opinion that it is beginning to be recognized that they were not intended for domestic life alone, but have the right to be put on the same plane as men. The actions of the suffragettes in Great Britain certainly seem to favor the view that they are not altogether fitted for the responsibilities of life, but be this as it may, it is obvious that we must revise our views as to the rôle of woman. In America, at any rate, the rôle of woman is surely entirely different from what it was comparatively few years ago. In industrial pursuits, in numbers women almost rival men, and from the economic standpoint the change has brought about radical results, whether for good or evil it is hard to say.

In a medical journal it is from the point of view of health and of the good of the race that the question is to be considered, and here we appear to stand on fairly firm ground. Considered from this aspect, the wholesale employment of women is an unmitigated evil. It goes without saying that if women refuse to bear and bring up healthy children they will not fulfill their physiological duty, and the nation must suffer. Woman's participation in industrial occupations has during the past decade effected great transformations, which have not tended to the advantage of her productive and reproductive strength. In short, industrial and professional work, to a great extent, unfit a woman for motherhood and domestic life, as is plainly shown by the unwillingness of the present generation of women to undertake the duties of motherhood and home. In addition it is distinctly against the interests of the race, mentally and physically, that a mother should engage in outside work. Infants should be breast fed, which is impossible if the mother is working away from home; when young they should be constantly under the eye of the mother for the sake of their physical, mental, and moral health, and if this is not done they, and ultimately the race, will suffer harm. At the present time a lamentable waste of women is going on, and the matter requires immediate attention. The fact must be recognized that the rôle of woman has changed, that this change is not for the better—at least, not from a medical point of view, and while allowing that the old state of affairs has gone, never to return, at the same time steps should be taken to endeavor to deal with existing conditions in such a manner that the race will suffer as little as possible. A necessary movement in this direction is to find out exactly how matters stand by initiating measures for the compilation and publication of national and international statistics relating to the participation of women in industrial pursuits.

## A CIVILIZATION-WIDE WARFARE.

For several years past fly extermination has been essayed, on the basis of this insect's now well understood germ-conveying proclivities. Americans, being a people much moved by slogans, "Swat the Fly" is one which has excited a vast deal of industry, with somehow not very appreciable diminution in the number of flies. With a better understanding of the conditions the wiser slogan "Starve the Fly" has supplanted the other. As we have repeatedly said, it is vastly more to the purpose to destroy the breeding places of flies and their filthy pabulum than to kill individual insects while the filthy lying-in chambers of mother flies are permitted to exist.

This year the antifly campaign is already on, it being recognized that hibernating mother flies, which may be fecundated, must be destroyed before April, when they would have an opportunity to lay the season's initial batch of eggs. To begin thus early would seem to be a logical step, since it has been computed that one over-wintering mother fly could (mathematically at least) found a tidy genealogical tree which would, by the end of the fly season, amount to several billions of branches, twigs, and budlets.

The Bureau of Entomology in the Department of Agriculture at Washington is ready to furnish to all citizens detailed information as to the procedures which should obtain. The Fly Fighting Committee of the American Civic Federation, in New York City, is also ever ready to be of service, and its literature has been requested and sent not only throughout these United States but also to France, England, Italy, Ireland, India, Egypt, the Philippines, Korea, Australia, Hawaii, Singapore,

Venezuela, and other regions. This association has for years worked for agitation, education, and organization against the fly. Mr. Edward Hatch, Jr., its president, arranged for the manufacture of the gruesomely-fascinating film entitled "The Fly Pest," which has been shown in moving picture halls and "nickelodeons" throughout the country. Lantern slides illustrating the subject are loaned to responsible persons applying to the committee in New York. A traveling exhibit, consisting of photographs and placards warning against the fly, is also to be had of this committee by local organizations. It urges the individual worker against the fly to interest his neighbors, so that they may cooperate with him in the antifly propaganda. The lay press will no doubt, as heretofore, give support. Fly ordinances should be framed. Civic societies, labor organizations, women's clubs, granges, and churches should become active in this good work. Prizes may be offered under the auspices of boards of education to school children uniting on "The House Fly as a Carrier of Disease." Hotel and restaurant keepers and factory owners should certainly become interested.

The part which the fly plays in the transmission of the bacteria of tuberculosis, typhoid fever, "summer complaints," and infectious dysenteries, has now long been known, and need not be dwelt upon here. With regard to the filth, it should be recalled that upward of ninety per cent. of fly-breeding takes place in horse manure; this fact should of course not lead to the neglect of the spittoon, the garbage can, the unclean dairy, the putrescent animal in the public streets and gutters, and the privy.

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### "Isolated" Mental Inferiority.

No subject is more puzzling to-day than the great variability of type of psychopathic children. While the superior imbecile or debile, the degenerate, and others are tolerably constant in their characteristics, there are many types of childhood in which some one peculiarity stands out strongly as the chief evidence of psychasthenia, while of more or less prominence are minor aberrations. We may select the case of a boy with harmless imperative concepts and tendency to the formation of useless habits, who is also obsessed with the idea that certain people look down upon him because he works with his hands. The same individual is unable to eat some of the most natural of food substances. "Odd," "notional" children and adolescents very often outgrow all these peculiarities or at least become able to suppress them; and in general unless the mental state shows a progressive tendency to retrograde we should not be in haste to class these individuals as defectives. It is otherwise when a normal subject shows a positive defect along a single line, and at a recent meeting of a Wisebaden medical society (*Berliner klinische Wochenschrift*, February 17) Vogt described one of these rare examples who was technically neither debile, degenerate, nor psychasthenic. The age was but eleven years and the boy was unusually bright, yet had never mastered reading or writing. He drew well, and had a good notion of mechanical draftsmanship. Some organic defect might be suggested, but "soul blindness" in the ordinary sense of the term could be absolutely excluded. The boy was simply unable to commit letters into words. All other tasks suitable to his age he mastered easily.

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## News of the Week.

**State Health Bill.**—On March 12, Governor Sulzer of New York transmitted to the Legislature with a special message, a bill providing for the reorganization of the State Department of Health in accordance with the recommendations of the Commission appointed by the Governor last January. The bill gives the State Commissioner of Health the power to take charge of local affairs when no health officer is chosen, provides for the abolition of town and village boards of health and the transfer of their duties to town and village boards of trustees, divides the State into sanitary districts under the supervision of sanitary officers paid by the State, extends the power of the department over tenement houses in all cities, requires the health commissioner to inspect all State institutions at least once a year, and lays down stringent regulations for the care and disposition of patients with tuberculosis. The Governor in his message says: "This bill is a justice-promoting measure. By its enactment the State would perform in a more nearly adequate degree the imperative duty resting upon it to protect the health of its citizens. This measure, if enacted, would place the State of New York in the front rank of those States in which the people, through their duly constituted representatives, have taken wise and far-sighted action to promote health, vigor and efficiency.

**Experimenting on Insane.**—A bill recently introduced into the New York State Legislature authorizes the appointment by the Governor of a commission to investigate the extent of the alleged practice of experimentation upon human beings, especially children, without their consent in hospitals and other public institutions by inoculations and other treatment or tests not undertaken for the benefit of the individual and having no relation to his individual necessity. It is claimed by the sponser of the bill that at a recent hearing on the antivivisection bills evidence was produced showing that insane patients are often subjected to experiment with serums for the prevention of typhoid fever and other diseases without their knowledge, and that it is necessary to protect these persons by law from injury or interference with their personal rights.

**Medical College Transfer.**—The College of Physicians and Surgeons of Chicago on March 6 became again a part of the University of Illinois, by the formal transfer of the college property to the trustees of the University. The present staff of instructors will be retained at least until the end of the present academic year.

**Inspecting the Canal.**—Under the auspices of the Illinois State Medical Association, a large party of physicians and their families left Chicago on March 2 for a trip to Panama, going by way of Florida with stops at Kingston and Havana.

**Hospital Sold.**—At the sale of the property of the New York Nursery and Child's Hospital held by order of the City last week, the sum of $446.100 was realized, of which 60 per cent. will go to the hospital and 40 per cent. to the City.

**Hospital for Deformities and Joint Diseases.**—Plans were filed recently with the Building Depart-

ment of New York City for the new structure of the Hospital for Deformities and Joint Diseases which will be erected on 123d Street between Madison and Park Avenues. The building will be six stories high, with a frontage of thirty-four and depth of ninety feet, and will be fireproof. It will contain gymnasiums and Zander rooms for both men and women, a room for electric treatments, and an *x*-ray room. The architects have estimated the cost at $90,000.

**New Railroad Hospital.**—The Santa Fé Railroad on March 1 opened a new hospital at Mulvane, Kan., which was built at a cost of $100,000. Dr. Herman W. Goelitz, formerly of Las Vegas, N. M., has been placed in charge.

**Hospital Fire.**—Presumably from defective insulation a fire started in a small storeroom on the top floor of the Har Moriah Hospital, New York, on the morning of March 10, but was extinguished with no results more serious than the filling of the hospital with smoke and the consequent alarm of the patients in the wards.

**Smallpox in Capital.**—The State, War, and Navy Department building in Washington was invaded by the surgeons from the Public Health Service on March 11, and some hundreds of employees of the War and Navy Departments were vaccinated. The discovery of two cases of smallpox in the building was responsible for the wholesale procedure.

**Harvey Society.**—Prof. Franz Knoop of the University of Freiburg, Germany, will lecture before the Harvey Society at the Academy of Medicine, New York, on Saturday evening, March 22, on "Modern Problems of Nutrition."

**Death Rate Up.**—For the week ending March 8, the death rate in New York City was 16.73 per thousand, the total number of deaths being 1,723, while for the corresponding week of last year the rate was 16.21 and the number of deaths 1,608. Pneumonia is given as the cause of death in 375 cases and influenza in 21, these two causes of death being chiefly responsible for the increase. The death rate for the first ten weeks of the year was 15.57 as against 15.63 for the same period of 1912.

**Hospital for Diseases of the Chest.**—The Trustees of Jefferson Medical College have purchased the premises formerly occupied by the Henry Phipps Institute for Tuberculosis at Third and Pine Streets, Philadelphia, and which will be devoted to the treatment of diseases of the chest. There will be accommodations for 52 bed patients and a complete dispensary service will be organized under the direction of the professor of medicine, Dr. Thomas McCrae.

**Canal Zone Report.**—During the month of January, 1913, there occurred 51 deaths among the employees of the Canal Commission in the Canal Zone, of which 32 were due to disease and 19 to violence, giving an annual death rate per thousand of 11.74. This is the highest rate recorded for the month since 1908, when the rate was 12.72. The lowest rate recorded for January was in 1912, when it was 8.10. The death rate per thousand among the civil population was also higher than during the same month last year, being 23.24 as compared with 17.67. Among employees 2 deaths were due to hemoglobinuric fever, 5 to lobar pneumonia, 2 to malarial fever, 2 to organic disease of the heart, 8 to tuberculosis, and 1 to typhoid fever. "No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month."

**American Museum of Safety.**—A children's safety crusade has been carried on in the New York public and private schools since last December by the American Museum of Safety under the direction of Dr. William H. Tolman, and nearly twenty thousand children have enlisted as members of the Safety League. The children are taught by illustrated lectures how to avoid injury in the public streets and are given simple rules for their guidance on the street, in case of fire, and in other dangerous situations.

**Gifts to Charities.**—St. John's Hospital, Brooklyn, receives $1,000, and the Thanksgiving Hospital, Cooperstown, N. Y., $500, by the will of the late Mrs. Mary A. Taffe of Brooklyn.

By the will of the late James H. Sternberg of Reading, Pa., the sum of $10,000 is bequeathed to the Reading Hospital.

By the will of the late Mr. Ferris S. Thompson of New York, who died recently in Paris, the sum of $200,000 is left to the Mercy Hospital, Chicago; the New Bedford, Mass., Tuberculosis Sanatorium receives $10,000, the Woman's Hospital, New York, $25,000, and the American Hospital, Paris, $25,000, all in memory of the testator's mother, while two-fifths of the latter's residuary estate, the value of which is not given, are left to the New York Skin and Cancer Hospital. In addition the will provides that trust funds amounting to $155,000 go to St. Luke's Hospital, New York, and other trust funds amounting to $70,000 to the Woman's Hospital, on the death of the beneficiaries.

St. Joseph's Hospital for Consumptives and St. Vincent's Hospital, New York, receive $1,000 each, and St. Rose's Home for Incurable Cancer and the Hospital for the Blind in the Bronx receive $500 each by the will of the late Thomas S. Bardon of this city.

In the adjudication of the estate of the late Anna H. Carver of Philadelphia the following charitable bequests have been awarded by the Orphans' Court: Trustees of the University of Pennsylvania, for hospital beds; trustees of the German Hospital, for hospital beds; trustees of Jefferson Medical College, for hospital beds, each $50,000; Hospital of the Protestant Episcopal Church, $10,000.

**Medical Society Elections.**—Story County (Ia.) Medical Society.—The following officers were elected at the meeting in Ames on March 6: *President*, Dr. H. Dewey Chamberlain, Nevada; *Vice-President*, Dr. E. B. Bush, Ames; *Secretary*, Dr. Frank S. Smith, Nevada.

Hart County (Ky.) Medical Society.—At the regular meeting held in Munfordville on March 4 the following officers were elected for the ensuing year: *President*, Dr. James William Craddock, Bonnieville; *Secretary*, Dr. Dodson, Rowletts.

Lane County (Ore.) Medical Society.—At the annual meeting held at Eugene on March 1 officers for the ensuing year were elected as follows: *President*, Dr. Omar R. Gullion, Eugene; *Vice-President*, Dr. Beniah R. Job, Cottage Grove; *Secretary-Treasurer*, Dr. Grant S. Beardsley, Eugene.

Llano County (Tex.) Medical Society.—The following officers were elected at the annual meeting held in Llano on February 28: *President*, Dr. Henry S. Selman, Llano; *Secretary*, Dr. Charles F. Darnell, Llano.

**Obituary Notes.**—Dr. Roland G. Curtin died at Philadelphia on March 14 at the age of 74 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1866. Subsequently he served as resident physician in the Philadelphia Hospital and at a later period he was for many years visiting physician to the same institution and for a time president of its Medical Board. He was for eleven years assistant physician to the Philadelphia Lying-In Charity; for ten years chief of the medical dispensary of the University of Pennsylvania, and for six years physician to the throat and chest department of the Howard Hospital. He was also for a time physician to the Hospital of the University of Pennsylvania and to the Presbyterian Hospital, and consulting physician to the Rush Hospital for Consumptives. He was a member of the Philadelphia County Medical Society (and for a term also its president), of the Medical Society of the State of Pennsylvania and of the American Medical Association, a Fellow of the College of Physicians of Philadelphia, a member of the American Climatological Association (also at one time vice-president and later president). He was assistant medical director at the Centennial Exposition held at Philadelphia in 1876 and honorary president of the Medico-Climatological Division of the World's Congress at Chicago in 1893. He received in 1871 the degree of Doctor of Philosophy from the University of Pennsylvania and in 1883 the degree of Master of Arts from Lafayette College. He was naval storekeeper at the Philadelphia Navy Yard during the Civil War.

Dr. John A. Mueller of Dyersville, Ia., a graduate of the State University of Iowa, College of Medicine, in 1892, was almost instantly killed on March 1, when the carriage in which he was driving was struck by an Illinois Central train near Schermer's crossing. Dr. Mueller, who was forty-one years of age, was for several terms mayor of New Vienna, where he formerly resided.

Dr. James F. Lamb of Shelbyville, Ind., a graduate of the Eclectic Medical College, Cincinnati, in 1878, died at his home from locomotor ataxia on February 26, after a long illness, aged 59 years.

Dr. Price W. Atkins of Marion, Va., a graduate of the College of Physicians and Surgeons, Baltimore, in 1875, and a member of the Virginia State and Smyth County Medical Societies, died at his home on March 2, aged 57 years.

Dr. Thomas H. Doyle of St. Joseph, Mo., a graduate of New York University Medical College in 1865, emeritus professor of medicine in the Ensworth Medical College, St. Joseph, a member of the American Medical Association and the Missouri State and Buchanan County Medical Societies, having been first president of the last, and formerly mayor of St. Joseph and a member of the police board, died in St. Joseph's Hospital on February 25, aged 73 years.

Dr. Saul Brock Angle of Windsor, Va., a graduate of the University College of Medicine, Richmond, in 1901, and a member of the Virginia State and Isle of Wight County Medical Societies, died in St. Andrew's Hospital on February 23, aged 32 years.

Dr. Henry William Brown of Waterloo, Ia., a graduate of the Geneva Medical College, New York, in 1867, and a member of the American Medical Association and the Iowa State and Blackhawk County Medical Societies, died at his home on February 27, after a long illness, aged 68 years.

## Obituary.

### JOHN SHAW BILLINGS, M.D., LL.D., D.C.L.

NEW YORK.

Dr. John Shaw Billings, Lieutenant-Colonel, U. S. A., retired, died at the New York Hospital, New York, on March 11, aged 74 years. Dr. Billings was born in Switzerland County, Indiana, and was graduated from Miami University, receiving the degree of A.B. in 1857 and of A.M. in 1860. In the latter year also he received the degree of M.D. from the Medical College of Ohio, Cincinnati. In the following year he enlisted in the Federal army as an assistant surgeon, and after the war was put in charge of vital statistics and made curator of the Army Medical Museum and Library. Here he did much to increase the size and importance of the library of the Surgeon-General's office which now ranks as the third largest medical library in the world, being surpassed only by the library of the Medical School in Paris and that of the Imperial Military Medical Academy of St. Petersburg. He founded the "Index Catalogue" of the Library of the Surgeon-General, editing the first sixteen volumes of the first series. In 1894 he was made a lieutenant-colonel and Deputy Surgeon-General.

From 1894 to 1896 he occupied the chair of hygiene at the University of Pennsylvania, Medical Department, and in the latter year came to New York as director of the New York Public Library, an office which he held up to the time of his death. He was a member of the National Academy and of the American Surgical Association, and was the author of many works on sanitation. He received the honorary degree of LL.D. from Edinburgh in 1884, from Harvard in 1886, from Yale in 1901, and from Johns Hopkins in 1902, and the degree of D.C.L. from Oxford in 1889.

### PRINCE ALBERT MORROW, M.D.

NEW YORK.

Dr. Prince A. Morrow, who died suddenly at his home in this city on March 17, was born in Mt. Vernon, Ky., December 19, 1846, and was a graduate of the New York University Medical College in 1874. He was one of the older generation of dermatologists in America. From 1884 to 1904, he was attending surgeon at the City Hospital. He was first clinical professor of venereal diseases; then lecturer on dermatology, and finally, clinical professor of genitourinary diseases at the University and Bellevue Hospital Medical College. He was consulting dermatologist to St. Vincent's and the City Hospitals. He was a member of the County and State Medical Societies, of the New York Academy of Medicine, American Academy of Medicine, and of the New York Dermatological Society, having served as president of the latter in 1890-91. Dr. Morrow was the founder of the American Society for Sanitary and Moral Prophylaxis, and had served as president since the organization of the Society in 1905. He was an honorary member of many dermatological societies in this country and abroad. Among his numerous contributions to medical literature are "Drug Eruptions," "Atlas of Skin and Venereal Diseases," "A System of Genito-Urinary Diseases," and "Syphilology and Dermatology." At one time Dr. Morrow made a special study of leprosy, visiting the leper colony in the Island of Molokai in order to make personal observations of the disease.

# Correspondence.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

APPENDICITIS; WHEN TO OPERATE — "DISSECTING VARIX," CASE OF THE LATE DR. W. RIVERS POLLOCK—DEATHS FROM ELECTRICITY—KEITH ON THE UPRIGHT POSTURE—HOSPITAL MEETINGS—OBITUARY.

London, Feb. 28, 1913.

Since the part played by the appendix in abdominal inflammatory cases has been fully recognized and the toleration of surgical interference established operative measures have been extended to nearly, if not all, varieties of attack. At present the question the surgeon asks in a serious case is not so much is operation required as at what period to intervene. There is indeed a small minority of practitioners who hold, more or less confidently, that as many cases of appendicitis recover under simple treatment, the risks of operation should not be run except in urgent cases. Some have even asserted that if all were left to nature the recoveries would be as numerous as if all unquestionably grave cases were subjected to operation. A larger minority are for holding a watching attitude when called to what they consider a mild case. This is a natural view for the family attendant to take considering the position he holds toward the patient and his friends to whom he has to communicate the condition of the sufferer, and to suggest, if he thinks proper, calling in further advice. The surgeon accustomed to operate has, in such cases, only to decide on the prospect of a successful result. This being good, he is ready for the responsibility, knowing that at the best temporizing leaves the probability of recurrence.

A discussion on the subject at the Medical Society of London was opened on the 10th inst., and a full representation of surgical opinion was anticipated. There was, however, no debate, for Sir George Beatson, who had undertaken to defend the temporizing plan, was unable to attend. All the speakers accordingly favored immediate operation. Mr. Edmund Owen, who was to open the debate, is a thoroughgoing advocate of this, and has no hesitation in pronouncing many of the deaths that have occurred as quite unnecessary, inasmuch as if an early operation had been resorted to they would probably not have taken place. He does not believe in a "quiet stage." It has been said that on the fifth or sixth day operations are apt to be unsuccessful, but that he holds it is because by that time abscess may have been formed. Precious time has been lost. To wait for a quiet stage may be waiting for the silence of death. There is, he admits, apt to be "Fool's Paradise Stage," for which he would not wait, as his time to operate is as soon as he suspects the appendix is inflamed. It is urged that if this course be pursued cases may be operated on in which no disease of the appendix is found. This he would not regard as a great calamity—a clean cut into the abdomen can do no harm, and in extreme doubt he would follow his surgical instinct to "look and see." An exploratory incision might well become a routine procedure. As regards other methods of treatment, Mr. Owen declared there is no place for general measures "until after the inflamed appendix is out."

As already stated, the speakers all supported Mr. Owen, though perhaps with less enthusiasm. Mr. Battle urged that early operation was not only life-saving, it shortened the period of illness, obviated the danger of hernia and to a degree the necessity of drainage. Still he did not advocate it indiscriminately in every case and at every stage. Mr. Childe considered any attempt to discriminate as putting back the clock, and he has had 700 cases. Mr. Grey Turner agreed and gave his experience of 681 operations with a total mortality of 5.13 per cent. Mr. George R. Turner, in his last 100 cases, had only one death. Mr. Renton said early operation was the only proper course in acute cases; it gave a mortality of 2 per cent. against 20 to 40 if delayed. Major Hull said if all could be operated on before pus was formed there would be no mortality. Mr. Clayton-Greene said high mortality was due to delay. Mr. Burgess confirmed this, as did Mr. Connell, of Sheffield, and the president, Sir Watson Cheyne, who said he always removed the appendix unless the patient was moribund.

Unusual interest was felt by many in a communication to the Pathological Section of the Royal by Mr. S. G. Shattock. It was the history of the case of the late Dr. W. Rivers Pollock, obstetric physician to Westminister Hospital, who bequeathed to the Royal College of Surgeons for dissection the parts concerned in his twenty-five years' struggle with an illness brought on by a race when he was twenty-four years of age, in perfect health and training. He won for Cambridge against Oxford the 120-yard hurdle race in 16 seconds. He said he held his breath all the time. At the end of the race he lay down on the grass and complained almost immediately of pain in the lumbar region. Put to bed, the superficial veins began in a few days to dilate and slowly progressed for six months, during which time he kept his bed. When he got up the distended veins were supported by specially made elastic parts reaching up to the thorax, and these he had to wear for the rest of his life—a period of twenty-five years, during which he had to bear his infirmity. This he did with quiet courage, the admiration of his friends. Of late years he suffered from attacks of phlebitis and thrombosis in the enlarged saphenous veins. Such attacks would be brought on by the pressure of crease in his clothing. He died on September 29, 1909.

The dissection showed the inferior cava, except the highest part, converted into a flat, impervious ribbon, most contracted and thinnest opposite and below the renal veins for 2½ inches distance. A portion cut away from the front of the vessel below the renals showed its lumen completely occluded. The common iliacs and portions of the external and internal preserved are also flattened and obliterated. The tributaries and trunks of the renals are pervious, but entrance into cava closed, as tested with probe. The upper divided end of inferior cava is pervious, but reduced in size. The hepatic veins were not occluded.

Mr. Shattock suggested that, as a consequence of the extreme distention of the inferior cava by holding the breath in the race, a localized rupture of the intima, or of this and the media, took place, followed by forcible extravasation of blood into the walls during the exertion; in short, that the lesion in its initial stage was the counterpart of a dissecting aneurysm of the aorta. Since the word aneurysm is confined to arterial dilatation while swelling of the veins is termed varix, Mr. Shattock thinks "dissecting varix" suitable for the initial stage of the condition supposed, though very soon the two lesions would lose their resemblance, as the internal pressure is maintained in the aorta but not in the cava.

At the Royal College of Physicians on Tuesday the first of the Goulstonian lectures was given by Dr. Arthur J. Jex-Blake on deaths from electricity, which he found on the increase. In this country there were twenty-five in 1901-3, twenty-five in 1908 and twenty-six in 1910. In Europe about two hundred occurred annually, and as many in America. The conditions of electrocution, he thought, did not throw much, if any, light on the causes of death in accidental electric shock. Death, he considered, was not due to interference with the cardiac nervous mechanism, and probably to the direct stimulus to the muscular tissue of the heart, applied suddenly with such force that the whole of the muscular fibers contracted simultaneously, each at its maximum force.

The upright posture—a characteristic of man—has been the subject of lecture by Prof. Keith at the Royal College of Surgeons. Anatomists and others have often drawn attention to the adaptations of the skeleton, trunk, and limbs required to maintain the upright position in rest and in motion. But functional adaptation is equally or even more important. Muscles are dependent on nerves and these on the circulation of the blood, in all of which differences can be traced between quadruped and biped. Prof. Keith's investigations convince him that the shape of the lungs and the mode of respiration are adapted to the postural mechanism, and that various disabilities and deformation are caused by failure on exhaustion of that mechanism. The supporting muscles are brought into action by their automatic nerves at the moment of taking the upright position. Hence the lecturer pointed out the importance of keeping them in health by exercise and other means, especially for persons leading sedentary lives. The subject is continued in another lecture this evening.

The Middlesex Hospital's annual report may be called encouraging. At the meeting yesterday Prince Alexander of Teck, chairman, stated the total income was higher than the previous year. The new entrance hall affords greater comfort to friends of patients on visiting days. It also adds considerably to the appearance of the building, and thanks are due to Mr. Edmund Davis, who made himself responsible for the cost. The chairman had also to announce a gift of £10,000 from a benefactor who wishes to remain anonymous for the present. This is to be devoted to a new pathological block and institute of hygiene. There was some decrease in the income of the cancer charity of this hospital, but it is hoped this fund will soon retrieve its success.

The annual meeting of Kings College Hospital was held yesterday—the final one in the old building, as it is hoped to open the new hospital in September. A sum of £150,000 is still required to allow the new buildings to be opened free of debt.

The Central Ophthalmic Hospital also held its annual meeting yesterday. The new buildings occupy an area of 10,000 square feet and have cost £20,000. It was stated that the whole had been spent on necessaries, ornamentation having been sacrificed to utility. There had been a decrease in subscriptions due, it is believed, to the insurance act. But a gift of £3,000 and a legacy of £2,000 had been received during the year.

Professor M. M. McHardy, of Kings College and Hospital, one of the most eminent ophthalmologists, died on the 8th inst., age sixty-one. You will remember his self-registering perimeter, invented in 1882, and still in constant use. His valuable contributions to ophthalmic literature must also be known to you. Though not robust, having sustained some damage to the heart in an early illness, he was full of life and delighted in work, laboring in his hospital appointments with a devotion that surprised those who knew how much he did. He was obliged to retire, however, two or three years ago, to the regret of all who knew him. He was greatly admired for his remarkable skill as an operator and esteemed for his genial personal qualities.

Major F. D. Browne, I.M.S., has died in India at the age of forty-two. He graduated at Durham in 1893, entering the Indian medical service (Madras) 1896, and reaching the rank of Major in 1908. He was medical officer of the 112th regiment.

The death is reported from New Zealand of Dr. G. A. Harrison, B.A. Cantab. 1888, who took the diplomas of the two Royal Colleges of London in 1893.

Surgeon-General Bidie, C.I.E., formerly professor of materia medica at Madras, Hon. Surgeon to Queen Victoria, King Edward and the present King, died on the 19th inst. During his Indian service he passed through the mutiny. He discovered the cure, or rather preventive, of the coffee disease which had prevailed in Southern India.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*March 6, 1913.*

1. A Collection of Facts, Ideas and Theories Relating to the Diverse Elements that Contribute to Success in Treatment of Joint Diseases. H. W. Marshall.
2. Diverticulitis. J. Stanton.
3. A Case of Infection with *Hymenolepis Nana*, the Dwarf Tapeworm. I. Gerber.
4. Pathology of Typhoid Spine. M. H. Rogers.
5. Autotherapy in Acute Articular Rheumatism. C. H. Duncan.
6. Tuberculosis of Mesenteric Glands Simulating Gastric Ulcer. M. V. Tyrode.

1. **Arthritis and Visceral Ptosis.**—H. W. Marshall states that enough observations have been made by surgeons to show that operations which overcome stasis, and those which sidetrack or completely remove from function certain defective portions of the gastrointestinal tract by anastomoses, resections, and colostomies, are followed in some instances by the subsidence of aggravated arthritic lesions. Visceral ptosis is so frequently an accompaniment of such defective conditions that by some it is considered the dominant feature of them. Equally well established also is the fact upon which certain internists lay emphasis, namely, that most marked degrees of visceral displacement may be present without symptoms of arthritic disease.

2. **Diverticulitis.**—J. Stanton concludes that this is not a rare disease. Recurrent attacks of left-sided abdominal pain, with tenderness and tumor formation, in the absence of any active urinary disturbance, are usually due to inflamed diverticula. As a focus of chronic irritation this condition may be a starting point of cancer of the sigmoid. Surgical removal affords the only perfect cure.

3. **Infection With the Dwarf Tapeworm.**—J. Gerber reports a case of this condition in a boy aged 17 years. Symptoms pointing towards the gastrointestinal tract were practically absent, the only important one being nausea. On the other hand, the chief disturbances were those referable to the nervous system, namely, severe headache, dizziness, and later convulsions and unconsciousness. The diagnosis is usually difficult, as there are ordinarily no symptoms pointing to an intestinal parasite. Sometimes there are gastrointestinal symptoms: diarrhea alternating with constipation, colicky abdominal pains, vomiting, and severe nausea. Frequently nervous symptoms greatly outweigh

the others. These are usually very severe, and may consist of headaches, disturbances of vision, dizziness, convulsions, spasms, fainting-fits, and pains in various regions. Often a very severe secondary anemia develops. The diagnosis can be made only by finding in the stools the characteristic ova, or more properly speaking, "onchospheres," as they contain an embryo. These have a thick double capsule, within which is found the embryo containing six hooklets. At either pole is a so-called "mamilate" tip, from which several filamentous appendages go off into the surrounding protoplasm. It is the possession of these filaments that distinguishes the *Hymenalepis nana,* or *Tenia nana* as it is more commonly called, from other members of the same genus. The dwarf tapeworms themselves are too small to be noticed in the stool with the naked eye, unless present in very large numbers, as after treatment. In the adult stage they measure only from 5 to 45 mm. in length, although they contain 100 to 200 segments. This is the smallest tapeworm known for man. It is usually a parasite of children, about 70 per cent. of the reported cases being in children under the age of 15.

## New York Medical Journal.

*March* 8, 1913.

1. Infant Feeding. J. L. Morse.
2. Urethral and Periurethral Lithiasis. V. C. Pedersen.
3. Scleroderma Inusitatum. W. P. Cunningham.
4. Indurative Headache. A. Maverick.
5. The Metamorphosis of the White Blood Corpuscle. T. Powell.
6. Teething as a Cause of Disease in Infancy. C. Herrman.
7. The History of Bloodletting. F. H. Garrison.
8. Postoperative Dilatation of the Stomach. H. A. Duncan.
9. Cultivation of *Bacillus typhosus* from a Spot in a Luetic Typhoid Subject After the Fastigium. P. G. Skillern.
10. Infection of the Genitourinary Tract by Micrococcus Catarrhalis. E. H. Siter.

1. **Infant Feeding.**—J. L. Morse states that the average well baby thrives better during the early months on foods in which the natural relation of the fat, sugar and proteid are retained. Many infants are given too much fat in their food. Under normal conditions lactose is preferable to maltose in the feeding of infants and there is no indication for the use of saccharose in the place of these sugars. The reasons for this belief are that lactose undergoes lactic acid fermentation, which is the normal one in the infant's intestine, more readily than the other sugars and that it is more suitable for the development and maintenance of the normal infantile intestinal flora than the other sugars. It favors especially the development of *Bacillus bifidus,* which is normally the predominant organism in the large intestine. There is a kind of intestinal indigestion in infants which is due to the fermentation of milk sugar and the dextrin-maltose mixtures are most useful in the treatment of this condition. In the acute diarrheas due to bacterial infection the sugar given should be determined by the nature of the infection. In the type caused by the gas bacillus and other organisms of its class large amounts of any sort of sugar are contraindicated, maltose being more harmful than lactose because it undergoes butyric acid fermentation more readily. This type of diarrhea yields most rapidly to treatment with lactic acid bacilli. The average well infant thrives better during the early months on mixtures containing relatively high percentages of fat and sugar and relatively low percentage of proteins. There is a tendency to give higher percentages of proteins, on the average, than was the custom some years ago. However, if the proteins are increased too much beyond the protein needs, an unnecessary strain is thrown on the protein metabolism and on the organs of excretion. There is a protein indigestion in the same way that there is a fat and a sugar indigestion. Protein indigestion is more often overlooked than the others because it is harder to recognize, and when its symptoms are better known, it will be found to occur far more frequently than many at present suppose.

2. **Urethral Lithiasis.**—V. C. Pedersen notes that the symptoms of lithiasis of the anterior urethra with impaction in young children are objective only, and consist in outcries of pain and straining to pass urine which is voided, if at all, only in drops. In adults, however, the cases fall into two groups: First, patients who give little history until the urethral obstruction suddenly appears; and, second, patients who present a logical and consecutive story of varying degrees and forms, separated by widely uncertain lapses of time, brief in some, longer in other individuals, of renal disorder, with pain, pus, blood, ureteral colic during the migration of the stone into the bladder, vesical irritation from its presence in the bladder, and finally the urethral obstruction, absolute or relative in degree. Sometimes such patients have noticed the passage of urinary sand and stones, too small to cause obstruction. The immediate results of the obstruction provide the next set of symptoms alike in character, but more severe in children than in adults, namely, shock, anuria, retention of urine, distended and tender bladder, rupture of the urethra, and extravasation of urine, especially in children. These are variously related with absolute obstruction. Slight or partial obstruction may give few symptoms so that sometimes stones may be retained with little inconvenience for years.

4. **Indurative Headaches.**—A. Maverick finds that the diagnosis of indurative headache is easy when its frequency is kept in mind. It is possible to mistake the natural roughness of the occipital bone for indurations. Periodical attacks of indurative headache are often mistaken for migraine. In migraine, however, there are no sensitive muscular nodules, and between attacks the scalp is not apt to be sensitive to touch; furthermore, the pain when severe does not radiate down the back out to the shoulders, and painful stiffness of the neck does not usher in an attack. The pain of indurative headache is not preceded by a sensitive aura, nor terminated by vomiting. Migraine almost invariably begins in early youth, but indurative headache usually arises in adults. The commonness of unilateral headache and of ocular symptoms in migraine is also to be remembered. The final test is the treatment; the massage which cures most cases of indurative headache has no such influence on true migraine, and the cases of migraine that are reported as cured by massage are usually all cases of indurative headache. The two conditions may be associated, and muscular indurations may attack victims of migraine as well as others. These indurations (*Muskelschwielen*), as the name indicates, are composed of fibrous tissue thickenings; in early stages they are edematous and feel soft or elastic, but as the fibrous tissue contracts they become hard and dense. They arise in the muscle sheath and its proliferations into the muscle substance, also in the subcutaneous connective tissue, the condition being really more of a fibrositis than a myositis, strictly speaking. The underlying cause is apparently some nutritive change in the muscles involved, possibly an insufficient blood supply caused by the lack of exercise, or what some writers speak of as a rust of the tissues or premature senility of the muscles. The pressure caused by the contracting fibrous tissue on entangled nerves is apparently responsible for the pain.

7. **Bloodletting.**—F. H. Garrison quotes Haviland and Hall, who in a recent study of the subject, sum up the modern indications for bloodletting as follows: (1) Cases of an apoplectic nature, especially when associated with coma and cyanosis. (2) Cases of high tension and granular kidney in connection with arteriosclerosis. (3) Cases of convulsions in the status epilepticus. (4) Cases of uremia. (5) Cases of sunstroke with asphyxia. (6) Cases of polycythemia. (7) In hemoptysis, if there be engorgement of the right ventricle of the heart. (8) In aneurysm for relief of pain. (9) In cases of dilatation of the right ventricle of the heart from whatever cause aris-

ing. (10) In cases of pneumonia, for relief of pain and dilatation of the right ventricle.

10. **Urethritis and the Micrococcus Catarrhalis.**—E. H. Siter points out that a great many of the so-called cases of chronic urethritis are in reality infections caused by the *Micrococcus catarrhalis*, and if this is not recognized, the patient is treated vigorously, either with sounds or local applications, and the case drags on indefinitely. If many of one's so-called chronic prostatic and chronic urethritis patients were subjected to a careful bacteriological examination the absence of gonococcus could be determined, and if one went a step further and took a culture the *Micrococcus catarrhalis* would be revealed.

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### Journal of the American Medical Association.

*March* 8, 1913.

1. Some Features of the Theory and Practice of Medicine During the Seventeenth Century. A. M. Chisholm.
2. When Is Operative Treatment Indicated in Chronic Dyspepsia? W. H. Wathen.
3. Results with Tuberculin (Dixon's) in Advanced Chronic Ambulatory Tuberculosis. A. P. Francine and H. J. Hartz.
4. Hemorrhage Controlled in Two Cases by Local Application of Horse Serum. C. G. Levison.
5. A Case of Poisoning by Lithium, Presenting Some New Features. S. A. Cleaveland.
6. Report of a Case of Fecal Impaction in the Ileum for Fifty-three days with Recovery. R. H. Harris.
7. Treatment of Acute Dacryocystitis. F. H. Verhoeff.
8. A Case Showing Restoration of the Entire Nose by Rhinoplasty and Bone Transplantation. W. W. Carter.
9. Rhinoplasty. C. A. McWilliams.
10. Intestinal Obstruction. A Clinical Study of One Hundred and Eighty-one Cases. A. McGlannan.
11. Illuminating Gas Poisoning. M. Fishbein.
12. Dispensary Abuse and Its Elimination by Organization and the Application of Sociologic Methods. A. R. Warner.
13. A Suggestion on Phenoland lothyol in External Otitis. R. M. Nelson.

2. **Surgical Treatment of Chronic Dyspepsia.**—W. H. Wathen classifies the causes of chronic dyspepsia as follows: (1) In 90 per cent. of the cases of chronic dyspepsia there is no trouble in the stomach. In about 30 per cent. the stomach trouble is caused by cardiac and kidney insufficiency, tuberculosis, arteriosclerosis, tabes dorsalis, etc. Another 30 per cent. of cases are caused by congenital or acquired defects in the viscera of the abdominal and pelvic cavities, plus gastrointestinal neuroses—gastroptosis, enteroptosis, atonic dilatation of the stomach, etc. Dyspepsia is often cured by the removal of gallstones or of the appendix. There is but one treatment that can cure inveterate dyspepsia due to calloused gastric or duodenal ulcer, and that is surgery. Temporary cures may be obtained, but the symptoms will return.

3. **Tuberculin Treatment of Tuberculosis.**—A. P. Francine and H. J. Hartz report the favorable results attending the use of Dixon's tuberculin in the treatment of advanced cases of tuberculosis, which all belong to the fibroid type, moderately or far advanced with little or no fever. The patients had developed a fair resistance to the disease but yet showed a very gradual deterioration in weight and strength in spite of all that had been done. The tuberculin was put up, not unlike the diphtheria antitoxin, in ten different dilutions, the weakest representing 0.001 and the strongest 0.09 mg., and was injected into the interscapular tissues of the back, in small doses at the beginning, which were gradually increased as tolerance was established. Care was taken to avoid even slight reactions. The authors report eleven cases in detail. In all the deterioration was checked. The patients were able to resume their occupations and remain at regular work during or after the injection, which seemed to be the sole factor in the improvement. The patient with glandular tuberculosis was apparently cured. Tubercle bacilli disappeared in the sputum in several of the cases during the treatment, but were still found in the majority at the close of the treatment. The local condition of the lungs showed a distinct improvement, as evidenced by the disappearance of râles. The authors conclude that in advanced tuberculosis, when there is fair resistance and little or no fever, tuberculin is unqualifiedly a therapeutic measure, or at least proved to be such in this series. The reactions with Dixon's tuberculin (tubercle bacilli extract) were uniformly mild and without unfavorable influence on the treatment. The authors believe that, for general use at least, particularly in ambulatory cases, it is better to select a mild and little toxic preparation, and Dixon's they consider a safe and effective tuberculin of this type.

4. **Local Application of Horse Serum in Hemorrhage.**—C. G. Levison cites two cases of persistent hemorrhage, one from the bladder after cauterization and the other from the exposed gall-bladder after an exploratory operation for carcinoma, both of which were relieved at once by local applications of horse-serum instead of by the usual hypodermic injection or transfusion. In each case a flask of horse-serum was poured into the open bleeding surfaces, causing prompt and permanent cessation of the hemorrhage.

6. **Fecal Impaction in the Ileum.**—R. H. Harris notes that cecostomy may be complicated (a) by contraction of the opening, requiring dilatation from time to time; (b) by fecal impaction, necessitating irrigation through the artificial anus, and (c) by prolapse of te cecum through the cecostomy fistula. Fecal impaction in the ileum in the case reported by the author was due principally to the ingestion of fruit seeds and imperfectly masticated vegetables, such a trong bean, which became impacted at the ileocecal orifice. Mere fecal accumulation does not cause urgent symptoms as long as the intestinal gases have opportunity to exit. The distention may produce displacement of the liver and stomach without marked interference with their functions. The urine became dark red from the elimination of bile pigments and hematin reduced to urobilin in the intestine, and the urine contained a few hyaline casts but no albumin. Röntgen-ray examination of the digestive tract after bismuth meals and bismuth enemas was valuable in enabling one to confirm the extent of the changes which resulted from the impaction and estimate the exact location of the tumor. Treatment to be effective must be persevering and should be conducted with full knowledge of the probable existence of stercoral ulceration in a greatly distended intestine and of the possibility of separating the bowel from the colostomy opening by any undue violence. Prolapse of the cecum through the artificial anus may prove fatal unless skilful surgical attention is promptly available.

10. **Intestinal Obstruction.**—A. McGlannan presents a clinical study of 181 cases of intestinal obstruction, undertaken to find the clinical picture that will enable one to recognize obstruction in its early curable stage and to determine what extent of operation should be performed when the condition is complicated by toxemia and gangrene. The reports include twenty-seven varieties of obstruction, exclusive of strangulated hernia, taken from the records of the Johns Hopkins and St. Agnes' hospitals, Baltimore. The patients were operated on by fifteen surgeons during a period of twenty years. The early characteristic symptoms are pain, constipation, diarrhea and vomiting. The association of pain and constipation at the onset occurred in 30 per cent. of the cases, though vomiting may be an initial symptom. The secondary symptoms are due to the efforts of the intestine to force its contents beyond the point of closure and the effect of these efforts on the size and shape of the bowel and the effects on the blood-vessels involved in the obstruction. In the third or last stage there occur toxemia gangrene, peritonitis and alterations of kidney function. Thirty-four patients were treated in the first stage, twelve by enemas and purgatives and thirty-two by operation—resection, simple enterostomy, enterostomy with short circuiting, division of bands, and reduction of hernia, intussusception, and

volvulus. All recovered. Sixty-five persons were operated on in the second stage. Ten died from the operation and eleven from a second operation or some complication occurring more than a week afterward. In both first and second stages, therefore, operative relief of the obstruction seems the best treatment. Eighty-two patients were operated on in the third stage, with fifty-two deaths. Five of those who survived the operation died as a result of complications. In the third stage enterostomy should be done either alone or in connection with other measures. It is necessary when toxemic symptoms appear to remove the toxic accumulations above the obstruction. Whether or not one should do more depends on the general or special condition of the patient.

## The Lancet.

*March* 1, 1913.

1. Surgery of the Thyroid Gland, with Special Reference to Exophthalmic Goiter. J. Berry.
2. Elements of Prognosis in Pulmonary Tuberculosis. J. M. Bruce.
3. Typhoid and Paratyphoid Vaccination with Live Attenuated Vaccines; Mixed Vaccines. A. Castellani.
4. Should a Man with Miners' Nystagmus Work? S. Riseley.
5. Perforation of Gastric or Duodenal (Pyloric) Ulcers. Inferences on Modern Treatment Drawn from Histories of Patients Who Have Recovered. E. M. Corner.
6. The Contraction Ring as a Cause of Dystocia, with a Description of a Specimen Removed by Hysterectomy During Labor. C. White.
7. A Summary of 340 Cases of Pulmonary Tuberculosis Treated During 25 Years' Practice. J. C. Voigt.
8. Functional Aphonia: A Method of Curative and Preventative Treatment. C. Macmahon.

1. **Exophthalmic Goiter.**—J. Berry states that the most striking naked-eye feature of the thyroid gland in cases of this condition is the very marked diminution in the amount of colloid, often amounting to complete absence. The gland, instead of presenting the vesicular appearance so characteristic of the normal gland, or of the ordinary parenchymatous goiter, presents a solid, almost homogeneous, appearance. Instead of looking like a sponge or a honeycomb, as does the socalled parenchymatous or colloid goiter, it resembles a solid organ like the salivary gland or the pancreas. There is another group to which the name of secondary Graves' disease may be given. These are cases in which the symptoms and pathological appearances of the disease are engrafted upon a previously existing simple goiter, either a cyst or an adenoma, a parenchymatous or an adenoparenchymatous goiter. There is another type which is quite common clinically, but which in the author's opinion, should not be classed as Graves' disease nor even as hyperthyroidism. These are cases of ordinary goiter, generally a deeply seated cyst or adenoma, with dyspnœa and tachycardia, and often, too, some degree of tremor and even emaciation. They do not present the characteristic morbid appearances of hyperthyroidism. But if left alone they show no tendency to develop exophthalmos, they do not run the ordinary course of Graves' disease, and they are not attended by the grave risks of that disease. With regard to the exophthalmos, which is so striking and remarkable a feature of Graves' disease, there can be little or no doubt that it is due solely to local accumulation of fat within the orbit. A condition of heart, to which the name of "kropfherz" (goiter heart) was given years ago by continental surgeons, is in its severe and later stages a serious cause of anxiety to the operating surgeon, and the author has had to deal with only too many of these cases. The condition is due to long-continued mechanical pressure upon the trachea and veins at the root of the neck. There is, however, another kind of goiter heart in which the rapidity and irregularity of the heart are probably due to chronic poisoning by thyroid secretion. Such is the heart of Graves' disease.

3. **Live Attenuated Vaccines in Typhoid and Paratyphoid Fevers.**—A. Castellani records the results following the use of live attenuated vaccine prepared according to the method introduced by him in 1904. In preparing the vaccine the strain used should be non-virulent but rich in antigen, as found out by animal experiments. Such vaccine in the lower animals, and probably in man too, gives rise to a higher degree of immunization than obtainable with dead vaccines. In man, however, the immunization obtained by two inoculations of this vaccine or any of the dead vaccines is never complete; it is only partial. Cholera and dysentery attenuated live vaccines can be obtained by using a somewhat similar method as that for preparing the typhoid vaccine; but for the dysentery vaccine peptonewater cultures and not broth cultures should be used, as these give rise to an extremely painful infiltration at the site of inoculation. The author refers to the sensitized live vaccine prepared in 1911 by Metchnikoff and Besredka, but their results seem to be extremely good, as shown by Alcock. The experimental work of these observers on live vaccines is of great importance, having demonstrated that chimpanzees can be rendered immune to typhoid fever only by the inoculation of living vaccines, either sensitized or non-sensitized. Various mixed vaccines can be prepared, either dead or live attenuated vaccines. The inoculation of such mixed vaccines is harmless and apparently in the lower animals they induce a degree of multiple immunization, the blood developing protective substances for each of the germs inoculated. In countries in which paratyphoid A and B are endemic besides typhoid fever, a mixed vaccine of typhoid, paratyphoid A, and paratyphoid B should be used. If a live mixed vaccine should be objected to, a dead mixed vaccine can be used with satisfactory results. The inoculation of such vaccines as shown is harmless, and it is probable that they give a certain degree of immunization for all three infections.

4. **Miners' Nystagmus and Working Capacity.**—S. Riseley states that when a man claims to be and is admitted to be incapacitated by nystagmus, after a reasonable period during which he has been under constant observation, if his condition warrants his being employed, he should eventually resume work under ground, but as a commencement occupation above ground should be provided. For there is no doubt that a man with bad nystagmus can work and do good work, and is no worse for doing it.

## British Medical Journal.

*March* 1, 1913.

1. Death by Electric Currents and by Lightning. A. J. Jex-Blake.
2. The Use of Physical Constants in Toxicology. O. C. M. Davis.
3. The Intramural Spread of Rectal Carcinoma. P. P. Cole.
4. Dislocation of the Metatarsus, with an Account of Three Cases. A. Young.
5. The Application of Fungi as Styptics. E. Knight.
6. After-history of Gastroenterostomy for Peptic Ulcer. A. W. Bourne.
7. A Method of Performing Gastrojejunostomy. K. Black.

1. **Death by Electric Currents.**—A. J. Jex-Blake notes that when one comes to look into a number of both fatal and non-fatal instances of accidental shock by industrial electric currents, it becomes apparent that the part of the body through which the current flows is extremely important in determining the result of the shock. Practically speaking, there is not the smallest danger of sudden death if the current enters one foot or leg and leaves it by the other or by the lower part of the trunk, however high the voltage and however great the current thus forced through the lower part of the body and the legs. But there is a danger, even with electric currents of as low a voltage as 65 volts, when the current travels through the thorax, and so has the chance to pass through the substance of the heart. The degree of danger here depends upon two factors—first, the resistance presented to the flow of electricity by the skin at the points at which the current enters and leaves the body, and, secondly, upon the voltage of the current. The resistance of the

skin varies very widely in any given case, being high when the skin is greasy or dry, or when the area of contact with the electric conductor is small, and relatively low when the skin is wet or the area over which it comes into contact with the conductor is great. To give a single example illustrating the author's meaning, one may handle a bare wire carrying, say, an electric lighting current at a pressure of several hundred volts with complete impunity, so long as the hands by which the current enters or the feet or boots by which it leaves the body are dry, because in these circumstances the amount of current flowing through the body is too small to be dangerous. But if the hands and feet are damp or wet, the electrical resistance of the skin at the points of entry and exit of the current may be so much lowered that a relatively strong current will flow from the hands through the body to the feet; and if the proportion of this current that passes through the heart is strong enough to paralyze it, then sudden death will occur.

**5. Application of Fungi as Styptics.**—E. Knight states that several species of fungus were largely used in former times as applications for arresting hemorrhage, both by surgeons and the common people. One of these is agaric. But the giant puffball, *Lycoperdon giganteum*, has had a far more lasting reputation as a styptic. The pulp consisting of powdery spores has been used by the peasantry for centuries to stop hemorrhages. The giant puffball was used in surgery as early as 1560. Within recent times it has been recommended as a useful styptic when applied locally in cases of hemorrhoids, in epistaxis, in uterine hemorrhage, and in troublesome bleeding after the extracting of a tooth. Heating the puffball in an oven to render the dressing aseptic does not appear to impair its hemostatic properties.

**6. Gastroenterostomy for Peptic Ulcer.**—A. W. Bourne discusses the after-history of cases of peptic ulcer in which gastroenterostomy has been performed. The results of treatment by gastroenterostomy are generally either excellent cures or complete failures. The immediate mortality of 92 cases is 7.6 per cent., but of the last 53 cases it is 0. The general results are: 43 per cent. excellent; 38 per cent. bad. Prognosis is much better when the patient is over 40. According to sex, 69 per cent. of males are cured; 28 per cent. of females are not improved. The duration of symptoms is of no assistance in forecasting the result of operation. The length of time elapsing between the meal and the onset of the pain is of great importance; the longer it is the better the outlook. Duodenal ulcers yield very much better results than gastric ulcers; the gastric give 38 per cent. of cures, duodenal 70 per cent. of cures. Cases of pyloric stenosis yield the best results. The degree of hyperchlorhydria is of importance, cases showing a total acidity of over 0.2 per cent. reacting well, cases with a normal acidity doing badly. The improvement effected by the operation is probably due to the relief dilatation, pyloric spasm, and hyperacidity by the drainage of the stomach. Failures may follow the closing of the anastomosis. The position of the anastomotic opening on the posterior wall of the stomach may be of great importance. Failures may be due to recurrence, or failure to heal of the original ulcer, or to the formation of jejunal ulcer. Apparent relapses are due to adhesions causing pain, vomiting, etc, or to carcinomatous degeneration. Cases in which an ulcer is not found at operation do badly.

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### Berliner klinische Wochenschrift.

*February* 24, 1913.

**Pancreas, Liver and Carbohydrate Metabolism.**—Wohlgemuth, after commenting on the work in this field by von Mering and Minkowski and other investigators, introduces new data from his own studies, as follows: The diastase of the pancreas and blood is active in carbohydrate metabolism. The pancreatic juice is absorbed into the blood in enormous amounts after ligation of the pancreatic duct, the diastase being recognizable therein in greatly increased proportion. Experiments with dog's blood show that the percentage of diastase increases twenty to thirty fold after the juice has been poured into the intestine. Such an augmentation cannot be without influence on the carbohydrate and glycogen metabolism. In an auxiliary series of experiments animals were fed abundantly on glucose, and in certain of them the pancreatic duct was ligated. In about three days the animals were killed and the livers investigated for glycogen. The amount of the latter in the livers of animals with ducts not ligated was tenfold that of their fellows, a condition foretold by the weight and texture of this organ. In several of the operated animals there was barely a trace of glycogen left. But the pictures changes if the time set for death is prolonged to a week or ten days, for in that case the intact animal appears nearly to have lost its glycogen values. Furthermore, Bernard's sugar puncture does not cause any essential variation. In other words, ligation greatly accelerates the disappearance of the stored-up glycogen. Another discovery was as follows: If the duct was tied before the glucose cramming was begun the glucose at once appeared in large quantities in the blood, or, in other words, a severe sugar intolerance developed. Numerous other finds were obtained, and the author concludes as follows: A saturation of blood with pancreatic diastase causes a revolution in carbohydrate metabolism. Glycogen may nearly vanish from the liver, so great is the diminution of its content. The tolerance for sugar is disturbed, the percentage of blood sugar notably increased—the blood sugar and blood diastase fluctuating together. The increase in the former has no absolute connection with increased combustion of sugar, *i.e.* is not parallel with it, but the latter is disturbed. Increase in sugar content of blood never leads to glycosuria. The facts still remain, however, that under normal conditions an increase of blood sugar should either be oxidized or escape by the urine. That neither result occurs in the author's animals appears to be due to the fact that something in the absorbed pancreatic juice interferes with the renal functions.

**Corneal Anesthesia from Quinine Derivatives.**—Morgenroth and Ginsberg have produced with a series of quinine synthetics an anesthetic action on the cornea which is far more intenstive than that of cocaine. This discovery, made some months ago, appeared at first to be invalidated for practical purposes by the concomitant initiating action sometimes in evidence, which was of a kind even to cause blindness. Further study of the group has shown not only an enormous anesthetic action—for isoamylhydrocuprein is from 20 to 25 times as active as cocaine—but positive therapeutic properties. The isopropyl combination produces an anesthesia lasting several days. While some members of the group are non-irritating to the rabbit's eye, others—and these the most powerfully anesthetic—may cause chemosis and opacity of the cornea. The future promises a synthetic in this series which by its prolonged anesthesia may be of special value in treating painful affections. In addition, these synthetics are known to antagonize bacteria—notably the pneumococcus—and thus fill two indications at once.

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### Münchener medizinische Wochenschrift.

*February* 25, 1913.

**Against the Endemic or Drinking Water Etiology of Goiter and Cretinism.**—Kutschera cites the 171 authors mentioned by Scholz who hold fast to a belief in the water

borne origin of these two affections. The impetus to the opposing or epidemiologic theory proceeds largely from the teachings of Wagner von Jauregg. The theory of simple primary hypothyroidism has naturally no adherents, although the malady undoubtedly strikes the subject largely through incapacitation of the thyroid body. The author's chief contention is that goiter and cretinism occur *en masse* under circumstances which quite exculpate the drinking water of the community; in other words, they occur in populous territories, in which a water borne disease would attack a greater percentage of individuals. If we plot off two regions, one based on water supply only and the other on habitations, we find invariably that incidence goes by residence and not by common drinking water supply. Goiters and cretinoid states may be established in animals without drinking water standards. To oppose successfully the water borne theory, we can only urge that the incidence is best accounted for by personal transmission through some hypothetical intermediary. The author, having no direct evidence of the latter, concludes from analogy that the two maladies are spread by minute hosts, such as are in full evidence in certain tropical diseases. Very recently evidence has been offered in tropical countries that a cretinoid condition may be set up by the sting of a bug which acts as host for a trypanosome. One of these affections—the so-called Chagaz disease—is no doubt a powerful auxiliary for those who seek to demolish the endemic theory of goiter.

**Occurrence of Tubercle Bacilli in the Circulating Blood.**—The great interest of this subject is shown by the simultaneous appearance of papers by Querner of the Hamburg-Eppendorf Hospital and Rosenberg of Hagen. While most of the recently published articles on the Continent do not allude to the impetus given to this research by American authors—notably Rosenberger—the article by Querner does full justice to the same. Both authors appear to believe fully that our actual information along these lines has become much confused and that no orientation, to say nothing of progress, is possible until we can establish better standards of identity.

**Treatment of Wounds with Sugar.**—Magnus refers to the great antiquity of this usage—even Galen treated fetid wounds with honey. The same idea obtains in amateur domestic practice to-day. On account of the frequent outcropping of this idea in the history of medicine—"school and popular"—the author has investigated the subject anew, being incited in part thereto because of the peculiar reactions of culture media which contain sugar upon bacteria, and also because of the recent use of sugar in intraperitoneal surgery and in other associations in which harmless antiseptics are indicated. He concludes that sugar as an antiseptic in wound treatment requires further attention. Sugar has a disinfectant and antiputrefactive action, dissolves fibrin, and incites secretory activity through violent osmotic action. In other words, it is a harmless, cheap, and apparently sterile medicament for routine wound treatment.

## Deutsche medizinische Wochenschrift.

*February 20, 1913.*

**Detoxication of Tuberculous Foci by Röntgen Radiation.**—Iselin sums up his personal experience as follows along with the results of much collateral effort: Regular determination of weight has shown: 1. That during the radiation period there is a gain in from 70 to 80 per cent. of two pounds or more. 2. As a rule there is a further gain in weight with each sitting, and with the increase in weight comes a parallel shrinkage in the focus, the loss of weight being due to toxin formation in the focus. The increase in weight which follows the radiation is to be conceived as due to a partial detoxication of the focus, and probably consists in improved water retention. The shrinkage in local lesions is doubtless the result of improved circulatory conditions. Thus is explained the initial improvement, but the permanent gain is to be explained only by actual healing of the focus. In surgical tuberculosis of mild type repeated weak radiations may answer the purpose, while in severe types there must be energetic deep radiation, not with the idea of a physiological cure, but a destruction and cicatricial retraction or encapsulation.

**Rationale of Bromine Therapy of Epilepsy.**—Von Wyss mentions the increased bromine retention which always results from prolonged bromide ingestion, with corresponding loss of chlorides. Organic bromine compositions in contrast with the alkaline bromides show less retention, certain organs containing no bromine at all. The expulsion of chlorine from the body during bromine administration may be considerable. If we give an animal large doses of bromides and small quantities of salt we see develop ataxia, and severe psychic alterations. If in such cases we give salts freely the symptoms rapidly yield. This is one of the most interesting phenomena in therapeutics. The introduction of salt drives out the bromine ions and restores to the body its content of chlorine ions. On rational grounds therefore salt starvation is contraindicated. Whenever bromides are given over long periods they must not be allowed to drive out all the chlorine; and when we go to the extreme of cutting salt out of the diet we favor the very worst expression of bromism. Rather we should never give bromides without the simultaneous exhibition of small doses of sodium chloride. But to secure the needed economy in bromide a salt-poor diet is not contraindicated. It is well to keep the patient on the smallest necessary dose in order that the latter may be increased in emergencies. The author admits that his views have to be submitted to the exigencies of actual practice, and hopes that this result will be forthcoming. One important point is that salt-poor diet is not always expedient and that there is a class of epileptics in which the patients may be allowed salt to taste.

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**Action of Atropine and Pilocarpine on the Urinary Secretion.**—D. Cow has found that the chief action of atropine on the excretion of urine is one on the plain musculature of the ureters. Pilocarpine affects the output of urine both indirectly through loss of fluid from other glands and also, and probably to a greater extent, by its action on the musculature of the ureters.—*Proceedings of the Royal Society of Medicine.*

**Edema Neonatorum.**—E. G. Graham Little notes that the distinction between edema and sclerema is carefully made and insisted upon by Radcliffe-Crocker, although often confused by other authors. The variety in a patient reported by the author was difficult to class, for it was essentially an edema, but there was no lividity, and the skin was waxy-white and smooth. The process, however, was transient in duration, and when the swelling was over the skin seemed but little altered, slight desquamation being present. The patient was a female, aged six weeks. The edematous change had been noticed at first in the feet and legs, then in the forearms and hands, but had not become generalized. The child when shown had a white and solid edema of both the forearms, which ceased abruptly at the elbow, where there was a definite ridge separating the healthy tissue from the diseased. The legs had by now regained their usual size and aspect. The child, seen four days later, showed no signs of edema of the forearm or hands, and seemed to be otherwise in fairly good health. There was no reason to suspect syphilis, and she had not had diarrhea. Previous cases seen by the author had invariably ended fatally, but the prognosis in this case seemed favorable.—*Proceedings of the Royal Society of Medicine.*

## Insurance Medicine.

**Prognostic Significance of Albumin and Casts.**—Dr. C. N. M'Cloud says that a most puzzling as well as interesting problem in insurance is the prognostic significance of urinary albumin and casts. A study of the literature on the subject is very confusing for authorities differ a great deal in their conclusions in the matter. The presence of albumin in the urine has been regarded as a sign of kidney disease by layman and physician since the time of Bright, in spite of much evidence to the contrary, for albumin may be absent in kidney disease and be present without it. The following may be included among "innocent" albuminurias: (1) Paroxysmal or cyclic albuminuria; (2) Dietetic albuminuria; (3) Albuminuria after exertion or cold; (4) Simple persistent albuminuria; (5) Postural or orthostatic albuminuria; (6) Climatic changes causing albuminuria; (7) Alimentary albuminuria (Crofton).

1. Paroxysmal albuminuria is marked by a large quantity of urine, few or no casts, and a regular rise or fall in the amount of albumin during the twenty-four hours. Albumin begins to appear soon after rising, increases during the day, falls on going to bed, and disappears at night to reappear the next morning. Young males are most liable to this condition, and are usually anemic, suffer from headaches, neuralgic pains, languor, etc. The differential diagnosis between this form of albuminuria and real nephritis may be very difficult, and doubtful for months.

2. Dietetic albuminuria occurs in children and adults, the amount of albumin being small with few or no casts. It may follow the ingestion of certain foods, eggs or cheese, for instance. If this albuminuria is temporary, the prognosis is good; if it persists, the patient is to be regarded with suspicion.

3. Albumin may appear after severe and prolonged exertion, such as marching, boxing, wrestling, etc. Usually the amount of albumin is considerable and numerous casts are present. Congestion of the kidney is the usual explanation. Repetition of such congestion might be followed by the development of true nephritis.

4. Simple persistent albuminuria means the presence of small quantities of albumin for years, usually not at all hours of the day. Few hyaline casts may be present; both they and the albumin may disappear after rest. One should feel anxious about such persons, as sooner or later they may develop chronic interstitial nephritis or endarteritis.

5. Many writers agree that there is no real postural albuminuria but that this is simply a characteristic of certain albuminurias of organic or functional origin.

6. Sudden changes of temperature have some effect upon the activity of the kidneys and albumin may appear during the extreme temperatures.

7. Alimentary albuminuria. Dr. Crofton has shown that whenever undigested albuminous food remains for a long time in contact with the gastrointestinal mucosa a portion of the native albumin may be absorbed into the circulation and promptly excreted as a foreign proteid. This may occur in motor insufficiency of the stomach, in certain intestinal indigestions, in hepatic insufficiency of marked degree, in rectal feeding with certain proteid foods, after ingestion of large amount of albuminous foods, etc.

Prognosis in all such types of albuminuria is very difficult because but few patients have been followed for years. Barringer has followed 396 men who showed albumin at the time of insurance and found ten years later that of the "albumin group" four died of the "albumin and hyaline casts group" thirteen died, of the "albumin and granular casts group" eight died. Altogether there were twenty-five deaths as contrasted to sixteen that could be expected, if the men were normal and sound in every particular. Barringer also showed that the incidence of tuberculosis among people with albuminuria seems to be very much higher than among the rest of the population. The albuminuria must therefore be looked upon as a sign of lowered resistance, at least, if not a very early accompaniment of an existing tuberculous infection. In determining the prognostic significance of albumin in an applicant, other features must be carefully examined, especially the condition of the heart (enlargement) and of the bloodvessels (sclerosis), and the blood pressure. The amount of urine passed in the twenty-four hours and the specific gravity should be ascertained. These points may help one to exclude cases of chronic nephritis but the significance of albuminuria will not be cleared up until more statistical and clinical knowledge is at hand. Collective investigations of several insurance companies will probably throw much light upon the matter. In conclusion it may be stated that all applicants with albuminuria should be regarded as substandard risks and an increased premium should be demanded from them.—Proceedings of the Second Annual Meeting of the Medical Section of the American Life Convention.

**Malingering in Accident and Disease.**—Sir John Callie states that the cost of insuring against accidents to industrial workers is now far in excess of the actuarial estimates upon which compensation acts are based, and the study of the statistics in relation to non-fatal accidents shows an increase in the number of these accidents which cannot be accounted for even by the speeding up of machinery and the conditions of modern labor. Malingering and dishonesty have an influence in raising the figures to their present abnormal height. The detection of malingering is not always so much a question of scientific knowledge as of the personal equation of the examining medical officer. For a number of years the author has examined annually about 2,000 sick and injured work-people with reference to their ability to return to work, and of these he has certified 25 per cent. as fit to work. The majority of these were not typical malingerers, but they would, nevertheless, from various causes, have unduly prolonged their illnesses. The principal means by which to check malingering are stated briefly as follows: (1) A system of organized lay-inspection; (2) repeated, periodical, independent medical supervision; (3) complete independence of the medical attendant, and (4) some system of registration which shall make apparent the full amount of sick pay and other benefit, if any, of which the patient is in receipt.—*The Lancet*, February 1. 1913.

**Workingmen's Insurance.**—A bill has been introduced into the New York Senate providing for insurance against industrial accidents. The bill permits employers to select any one of four different forms of insurance—self-insurance under restrictions, mutual insurance, insurance through a State fund, or insurance in an authorized stock company.

# Book Reviews.

Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilpray Papin Blair, A.M., M.D., Professor of Oral Surgery in the Washington University Dental School, and Associate in Surgery in the Washington University Medical School. With 384 Illustrations. Price, $5. St. Louis: C. V. Mosby Company, 1912.

The study of the mouth and of its diseases belongs not only to the province of the surgeon and dentist, but also to that of the general practitioner. Many constitutional diseases are revealed by characteristic changes in the mouth, and at the same time pathological conditions in this cavity give rise to constitutional derangements. Parallel with the recognition of these facts, recent years have beheld a phenomenal development in the specialized surgery of the jaws and teeth. The present volume in its thorough presentation of this entire subject adequately mirrors the rapid progress that has been made in this branch of medicine and surgery. The importance to the dental student of a knowledge of the fundamental principles of surgery is emphasized in the chapters devoted to the inflammations, infections, asepsis, hemorrhage, shock, etc. The subject of fractures of the jaws is presented in great detail. The same is true of the subject of congenital clefts of the palate and lips. Among the other topics that are discussed in satisfying detail may be mentioned deformities and malrelations of the jaws; diseases of the temperomandibular joint; infections of the teeth, peridental tissues, and jawbones; septic infections of the floor of the mouth and neck; diseases of the maxillary sinus; diseases and tumor of the lips, floor of the mouth, and tongue; and diseases of the pharynx. There are separate chapters on the ligation and temporary constriction of the arteries, on motor derangement, on tic douloureux, and sphenopalatine neuralgia, on local anesthesia, and on general anesthesia. The illustrations which are numerous and clear add considerably to the value of this volume, which may be recommended as one of the best of its kind that have appeared within recent years.

Mind and Its Disorders. A Text-Book for Students and Practitioners. By W. H. B. Stoddart, M.D., F.R.C.P., Resident Physician and Medical Superintendent of Bethlehem Royal Hospital; Lecturer on Mental Diseases to the Westminster Hospital, the Royal Free Hospital, and the London School of Clinical Medicine; late Educational Secretary of the Medico-Psychological Association of Great Britain and Ireland. Second Edition. With Illustrations. Price, $4 net. Philadelphia: P. Blakiston's Son & Co., 1912.

In the first edition of this work, which appeared about three years ago, the author stated in his preface that his object was to provide the student and practitioner with a succinct account of existing knowledge of mental diseases. This he seemed to accomplish fairly well and the book met with a ready sale. The endeavor was made "to induce the reader to think neurologically of mental processes, normal and morbid." In the plan of the book, normal psychology is first discussed; then the psychology of the insane; and lastly mental diseases. The classification employed is that of Kraepelin, slightly modified. There were 42 chapters in the first edition. Nearly all of these have been revised to bring the subject-matter up to date, and two chapters being on psychoanalysis have also been added for the same purpose. The book is a good step in the right direction and may be recommended as a helpful guide to both the student and the practitioner, in the study of the various disorders of mind.

Internal Secretion and the Ductless Glands. By Swale Vincent, M.D. (Lond.), D.Sc. (Edin.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), F.R.S.S. (Edin.), and Canada), Professor of Physiology in the University of Manitoba, Winnipeg, Canada, formerly Assistant Professor of Physiology in University College, London. With a preface by Professor E. A. Schäfer, F.R.S. Illustrated. Price $3.50. New York: Longmans, Green & Co., 1912.

The literature on the subject of the ductless glands has now assumed such proportions as to make it out of the question for any but special workers to keep pace with it, and information of much importance is steadily accumulating in this field. The present volume not only summarizes what is now known concerning the internal secretions, but also contains adequate discussions of the experimental work which has brought our knowledge to its present point. The author is well known as an investigator of these subjects and the book is therefore doubly valuable not only for the new matter which it contains, but also for the authoritative character of his judgment on the work of others. As is to be expected, the adrenals and the thyroids with the parathyroids receive the most space, and what is said concerning the latter organs will probably arouse much interest on account of the author's conservative attitude toward ascribing functions to them independent of those of the thyroid. In this connection he says, "From the standpoint of comparative anatomy, there are many reasons for believing that there is an intimate relation between the two structures, and the experimental evidence as to a supreme vital importance of the parathyroids as distinct from the thyroids is unconvincing." And further on, "It seems probable that we have to look upon thyroid and parathyroid as constituting one apparatus, and probably the pars intermedia of the pituitary body may have to be added as a third constituent of the apparatus." In view of the work of MacCallum, Voegtlin and others on the parathyroids in relation to the causation of tetany this seems an unnecessarily conservative opinion. Cushing's brilliant results in the treatment of acromegaly by operation on the pituitary also do not receive the recognition they deserve. On the whole, however, the work is remarkably comprehensive and will prove of the greatest value to research workers as well as to those who wish to keep informed as to progress in this very active department of physiology. For the purposes of the general reader especially the book is rather better adapted than the more discursive work of Biedl, which heretofore has been the only really comprehensive summary on the subject.

The Wellcome Photographic Exposure Record and Diary. London: Burroughs Wellcome & Co., 1913.

It is hardly necessary again to point out the many useful features embodied in the Wellcome Exposure Record. For the benefit of those who are not already familiar with it it may be stated that the little book contains blank pages for recording exposures, a diary for 1913, descriptions of all the usual photographic processes with tables and formulas, and the Wellcome exposure calculator. The latter has been improved so that it is now possible at one setting of the instrument to read directly the correct exposure for every lens opening.

The Wassermann Reaction—Its Technique and Practical Application in the Diagnosis of Syphilis. By John W. Marchildon, B.S., M.D., Assistant Professor of Bacteriology, St. Louis University Medical School. Price, $1.50. St. Louis: C. V. Mosby Company, 1912.

In this book the purpose has been to give the reader complete information that will enable him to get the material and to make the Wassermann reaction, providing he has a certain amount of laboratory training and skill. This purpose has been fairly well attained. The directions are exhaustively detailed though at times not as clear as might be desired. As the author states, it is desirable that the reaction be carried out only by trained laboratory workers in immunity and such workers would have but little use for a volume of this kind.

Diseases of the Liver, Gall-Bladder, and Bile-Ducts. By Humphry Davy Rolleston, M.A., M.D. (cantab.), F.R.C.P., Senior Physician, St. George's Hospital; Physician, Victoria Hospital for Children, Chelsea; formerly Fellow of St. John's College, Cambridge. Illustrated. Price, $9 net. London: Macmillan & Co., Ltd., 1912.

This handsome volume contains numerous papers on the subjects mentioned, which have appeared in various publications. Chief among these latter are the Encyclopædia Medica, the transactions of various medical societies, and medical journals. The author is well known as a scholarly writer and able editor; his name appears on the title-page of the new edition of Allbutt's System of Medicine, and he is a contributor to that peerless work as well as to Quain's Dictionary of Medicine. Those who are specially interested in the diseases of the liver will appreciate this volume; it is an admirable example of what such a monograph should be. The whole subject is discussed from the viewpoint of both the clinician and the pathologist; and at the same time, there is an ample bibliography. The work is no compilation, but is a well-planned and orderly treatise which represents a large amount of original work; the personal element is strong, but the views and labors of other workers are both recognized and acknowledged. Throughout, one feels in safe hands, and the value of the book is enhanced by the pleasure with which it can be read.

Life and Letters of Dr. William Beaumont. Including Hitherto Unpublished Data Concerning the Case of Alexis St. Martin. By Jesse S. Myer, A.B., M.D., Associate in Medicine in Washington University, St. Louis. With an Introduction by Sir William Osler, Bt., M.D., F.R.S., Regius Professor of Medicine in Oxford University, England. With Fifty-eight Illustrations. Price, $4. St. Louis: C. V. Mosby Company, 1912.

William Beaumont and Alexis St. Martin are names with which the medical student becomes acquainted very early in his career. Too often, it is to be feared, they remain mere names. Medical biography and medical history are, as a rule, sadly neglected; perhaps the overcrowded curriculum and irksome examinations are largely responsible for this state of affairs. But a similar excuse can hardly be found for the practitioner who, at least in the early years of his practice, has ample time for such reading, and now that we have this handsome volume by Dr. Myer no one need remain in ignorance of the life and work of our pioneer physiologist. The book is based on original letters and documents and represents a large amount of work on the part of its author. Throughout, this work has been done wisely; the author is in sympathy with his subject, and judiciously keeps himself in the background (a point too often ignored by biographers). This is in every way an important book, and the author deserves the thanks of American physicians for this well written biography of one of their number—a most patient and competent observer, whose life and work remain an exemplar and an inspiration.

Brewing. By A. Chaston Chapman, President of the Institute of Brewing, Fellow of the Institute of Chemistry of Great Britain and Ireland, Fellow of the Chemical Society. Price, $0.40 net. New York: G. P. Putnam's Sons, 1912.

Written with the purpose of acquainting the average layman with the principles underlying the various parts of the brewing process, this small volume is an attractive presentation of the subject. It contains a minimum of technicality and a large fund of information. It will prove interesting to any reader.

Serum Diagnosis of Syphilis and Luetin Reaction, together with the Butyric Acid Test for Syphilis. By Hideyo Noguchi, M.D., M.Sc., Associate Member of the Rockefeller Institute for Medical Research, New York. Third Edition. Price, $3. Philadelphia and London: J. B. Lippincott Company, 1912.

It is fortunate that the demand for this work and the size of the editions are such as to permit the issuing of frequent editions. The progress in this particular branch of medicine has been so rapid during the past three years that practically only those who are working in immunology have been able to keep pace with it. In this third edition Noguchi has announced his success in obtaining a pure culture of the *Treponema pallidum* and his application of emulsions of the organism to the diagnosis of syphilis by means of the luetin reaction. The luetin reaction is analogous to the tuberculin reaction in that it consists of the application to the skin of a preparation of dead organisms. It differs from the Wassermann reaction in that it is specific. The reports on this new test have so far been exceedingly favorable and it is likely to find high place among diagnostic methods. The rest of the book is practically unchanged from the second edition which appeared about a year and a half ago. The work is one of the most valuable which we have in this field and can be highly recommended.

Muscle Spasm and Degeneration in Intrathoracic Inflammations (Their importance as diagnostic aids and their influence in producing and altering the well established physical signs; also a consideration of their part in the causation of changes in the bony thorax) and Light Touch Palpation (The possibility and practicability of delimiting normal organs and diagnosticating diseased conditions within the chest and abdomen by very light touch). By Francis Marion Pottenger, A.M., M.D., LL.D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Cal. Sixteen Illustrations. Price, $2. St. Louis: C. V. Mosby Company, 1912.

In this extremely interesting and suggestive book the author points out the diagnostic significance of conditions of spasms and degeneration in the musculature of the neck and chest attending inflammatory intrathoracic lesions. These changes, which may be very slight or may be quite evident, are to be studied by minute inspection and by delicate palpation. By a still further refinement of the art of palpation Pottenger is able to outline organs such as the heart, liver, and spleen without the aid of percussion. The work deserves the careful study of every clinician, for undoubtedly the possibilities of inspection and palpation are seldom utilized as fully as they should be, even though it hardly seems likely that such unusual powers of observation and tactile sense as those possessed by the author will ever become common property.

Grundzüge für die Ernährung von Zuckerkranken. Nebst praktischen Anweisungen für die Diabetesküche. Von Prof. Dr. Albert Albu in Berlin. Price, 4 marks. Halle a. S.: Carl Marhold, 1912.

In most works on dietetics sections are devoted to the preparation of dishes for diabetics, and there are also several books on this subject alone, but in the opinion of the reviewer the present volume is the most satisfactory guide for the regulation of diabetic diets that has yet appeared. Albu states that physicians as a whole have not realized that in treating diabetes it is necessary to have a thorough acquaintance with culinary methods, and that while actual mastery of technical details is not required the medical attendant should at least theoretically be a good cook. Accordingly, we find that the larger part of the volume consists of recipes for a remarkably long list of dishes, together with general directions which should encourage attempts at the invention of new ones. Some of the ingredients naturally appear strange to American eyes and no doubt would prove still more so to American stomachs, but for the most part the dishes seem well adapted to tempt the appetites of every clime. The introductory chapter comprises an excellent discussion of the general principles on which the management of diabetic dietaries must be founded, in which emphasis is laid not only on testing the carbohydrate tolerance in the customary way, but also on the importance of determining the carbohydrate allowance on which the patient best utilizes the food given.

Papers on Psychoanalysis. By Ernest Jones, M.D. (London), M.R.C.P. (London); Associate Professor of Psychiatry, University of Toronto; Secretary of the American Psychoanalytic Association. Price $4 net. New York: William Wood & Company, 1913.

On the title page of this book there is a motto quoted from Freud: "Ein Nichtverstehen ist oft ein Nichtverstehenwollen (A failure to comprehend is often a want of desire to comprehend)." Freud and his exponents are perfectly aware of the credulity with which their novel teachings have been received in many quarters, nevertheless, their zeal in elucidating the principles of psychoanalysis has not abated. The present volume, which views this doctrine from many angles, comes from the pen of one of the foremost protagonists of the Freud theories. Whoever would profit by an enthusiastic and at the same time critical analysis of Freud's teachings will find this book one that admirably answers these purposes. The subject matter is not presented as in the ordinary textbook. It is embodied in a series of papers which were originally read before medical societies or published in various journals. These papers, although overlapping in some of their themes and illustrations, nevertheless present a most complete exposition of the theory and practice of psychoanalysis. The scope of this book can be best gauged by citing the various chapter headings. These are as follows: rationalization in everyday life; Freud's psychology; the psychopathology of everyday life; remarks on a case of complete autopsychic amnesia; a modern conception of the psychoneuroses; the relation between organic and functional diseases; simulated foolishness in hysteria; the pathology of morbid anxiety; psychoanalysis in psychotherapy; the psychoanalytic method of treatment; the word-association method in the treattment of psychoneuroses; the action of suggestion in psychotherapy; reflections on some criticisms of the psychoanalytic method of treatment; the therapeutic action of psychoanalysis; Freud's theory of dreams; the influence of dreams on waking life; the relations between dreams and psychoneurotic symptoms; a forgotten dream; note on the Œdipus saving phantasy; psychoanalysis and education; and the value of sublimating processes for education and reeducation. One of the most interesting of these chapters is that which deals with the psychopathology of daily life. The author discusses in a most entertaining manner the psychology of such common phenomena as forgetting, slips of the tongue, slips of the pen, misprints, false visual recognition, mislaying of objects, erroneously carried-out actions, and symptomatic acts. The rôle of the "complex," the subconscious motive that underlies many of the actions of an individual is discussed in its important bearings. The reader has no difficulty in grasping the principles of the Freudian psychology as set forth so lucidly in this work by one who has studied the subject carefully in its many aspects.

# Society Reports.

## THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Stated Meeting, Held February 24, 1913.*

The President, Dr. Brooks H. Wells, in the Chair.

**Report of the Committee of Fifteen upon Hospital and Dispensary Abuse.**—Dr. William S. Thomas, chairman of this committee, read this report, which was freely discussed by the members present. The results of the investigations of the dispensaries by members of the committee showed the following conditions respecting their compliance with the regulations of the State Board of Charities governing dispensary administration.

I. *Posting the Law.*—The requirement that the law be posted in the dispensary was generally complied with, but not always in a conspicuous manner. They recommended that these notices be printed in several languages and conspicuously posted.

II. *Registrar.*—The regulation governing registrars was as follows: "There shall be an officer to be known as 'The Registrar,' whose duties shall be to supervise the work of the dispensary, and either personally or by a competent deputy selected by him for that purpose, to make and preserve all records, receive all applicants, and see that all rules and regulations are enforced." They had found that all the dispensaries investigated were provided with registrars or deputies, as required.

III. *Admission of Applicants.*—The regulation governing the admission of applicants was as follows:

"Sec. 1. It shall be the duty of the registrar to examine all applicants to determine the question of their admission and the following rules shall guide his action: (*a*) All emergency cases shall be admitted and receive prompt treatment and care. (*b*) Every applicant who is, in the opinion of the registrar, poor and needy, shall be admitted. (*c*) Patients who are received in dispensaries connected with medical colleges, and whose cases are selected for clinical instruction may be admitted without examination as to their ability to pay for the services of a physician. (*d*) Every applicant, either personally, or by the parent or guardian of such applicant, whose personal appearance does not indicate that he is poor and needy shall be questioned by the registrar as to his ability to pay for medical or surgical relief, advice, or treatment, medicine, or apparatus, or either, in whole or in part, and if the registrar is still in doubt with regard thereto, the applicant shall be admitted to a first treatment on signing a card containing the 'representation' of statement of the applicant, but the registrar shall forthwith cause an investigation of his or her ability to pay either personally, or by parent or guardian; the results of such investigation, together with the representation card, shall be filed among the permanent records of the dispensary. Any such applicant who declines to sign the required 'representation' or statement shall be refused admission.

"Sec. 2. Such 'representation' or statement shall be in the following form:

Card of Admission on 'Representation' or Statement of Patient.

Name.....Date.....
Dr.....No. in family.....
Nationality.....Address.....
Occupation, Man.....Woman.....
Income.....Rent.....

This is my ..... application in this Dispensary in the year .....

I have been an applicant to no other Dispensary in the year ..... (or to the following Dispensaries: .....).

The foregoing statement is in all respects true.

Signature of applicant .....

Admitted..... Refused....."

*Comment.*—Inasmuch as this regulation left to the judgment of the registrar the admission or rejection of applicants, according to the personal appearance of the latter, it was essential that the registrar or his deputy be persons of considerable ability and discretion and in sympathy with the spirit of the law. In many instances it was found that the registrar was incompetent, or unable properly to comply with those provisions. The work of Miss Moore, the paid investigator of the 1,000 applicants, had incidentally strengthened the opinion of their committee in this matter. In order to correct this defect when existing in the administration of the dispensaries, the committee respectfully recommended the adoption of the following regulations: 1. That uniform records, preferably a card index system, be required in all institutions licensed by the State Board of Charities. 2. That said application card shall state the name, address, age, occupation, civil condition, personal income, and entire family income of the applicant who must sign his name thereto. 3. That each new applicant for free treatment be required to fill out such a blank before being assigned to any clinical department for treatment, emergency cases excepted. 4. Law fixing a penalty for false representation to be printed on back of patient's card.

The State Board's regulation was as follows: "The registrar shall issue to every applicant who is admitted for treatment a pass card on one side of which shall be printed the usual statement in regard to attendance upon the class to which he or she is assigned, and, on the other side, the card shall be in the following form:

"Penalty for False Representation. Section 296, Chapter 55, Consolidated Laws. Any person who obtained medical or surgical treatment on false representation, from any dispensary licensed under the provisions of this act shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than two dollars and not more than two hundred and fifty dollars." (Imprisonment until fine was paid might be imposed. Criminal Code Pro., 718.)

*Comment.*—The Committee found that in some instances the penalty was not printed on the back of the admission cards and it therefore recommended that this regulation be enforced and that the law be printed in more than one language.

IV. *Enforcement of the Law Against False Representation.*—One weakness of the medical charity law lay in the fact that there was no present adequate means of its enforcement. The Committee recommended that the State Board of Charities be provided with sufficient funds to enable it to cause the enforcement of Section 296, Chapter 55, of the Consolidated Laws which concerned the obtaining of medical charity under false representation.

V. *Regarding Fees in Dispensary.*—The Committee felt that the custom of charging for drugs, appliances and other incidentals to treatment, and not charging anything for treatment, placed the burden of the charity of the dispensary exclusively on the medical profession, in those institutions where medical attendants were not paid salaries. The Committee believed that charitable institutions should dispense charity to the extent of their financial ability, and no more; and that they should not make money for the purpose of extending their work. Therefore, it recommended that there be no charge made for drugs in the dispensaries. The Committee believed that dispensaries should be maintained for the benefit of the poor only. In some institutions the Committee found that patients were charged to the extent of their ability to pay. The Committee recommended that such practice be discontinued by the dispensaries posing as charitable institutions and receiving benefactions as such from State or individual sources.

VI. *Location of Patients' Homes in Relation to the Dispensary.*—Their investigation had disclosed the fact that one of the most serious and, it would seem, the most easily remedied causes of dispensary abuse was the widespread custom of treating patients without regard to the location of residences in respect to the dispensary. Patients flocked to the city from the suburbs and distant regions. Others, dwelling here, roamed about the city from one dispensary to another seeking various diagnoses and trying to find treatment to their personal liking. The result was economic waste and detriment to the interest of the patient and of the medical profession alike. Nothing could be clearer than that the easiest way to reform this abuse would be through association of the dispensaries. They could unite in dividing the city into districts, and each institution could then refuse patients living outside its own sphere, referring them to the charitable institution of their own localities. In many other respects needed reform in dispensary management could best be effected by an association of dispensary authorities. The Committee recommended that the Society give its support to the Associated Out-Patient Clinics. The Committee did not feel at liberty to publish specific instances of the abuse of dispensaries on the part of their authorities, because its investigations were necessarily confined to a few institutions. Unless all the city's sixty-four dispensaries had been investigated it would be manifestly unfair to do so.

It was moved, seconded, and unanimously carried that the above report be accepted by the Society.

*Report of the Subcommittee on Lodge Practice.*—Dr. Samuel J. Kopetzky, Chairman of this Committee, said that this Committee which undertook an investigation into the subject of lodge practice submitted the following brief report: In the first place it was very difficult to get any exact figures. The only source of information available was a mutual friend through whom was reached an official of the Federation of Jewish Orders, and the Committee had every reason to believe the figures he gave were correct and represented the actual conditions regarding lodge practice among the Jewish elements of their population. Furthermore, they might be taken as a typical example of similar conditions among the Italian, German, Hungarian, Bohemian, and Swedish Christian organizations. The figures did not include insurance companies nor commercial corporations who employed doctors. In the State of New York there were 2,000 Jewish lodges. There were, besides these and not included in this report, small independent benevolent societies which employed physicians under contract in each and every one of the smaller towns of the State. Approximately one physician took a contract with three lodges on an average in the Greater City of New York. There were thus employed about 500 physicians under contract with Jewish lodges. No means of ascertaining the number of physicians in contract practice in the State were available. The 500 physicians above referred to receive pay at the rate of from one to two dollars a year per member of the lodge from which they received their contract. The average contract physician thus assumed the care of 500 or 600 members. In a certain number of contracts the physician must look after the wife and children of the members, the children numbering up to eight per member's family. Other lodges permitted an additional fee of one dollar per year for looking after the member's family. The men engaged in this form of practice averaged from ten to fifteen house calls a day, spread all over the Greater City of New York, and at their offices they saw from twenty to forty ambulatory cases. Briefly stated this was the condition prevailing in Greater New York among the Jewish orders, and when one took into consideration the large number of Italian orders, the commercial houses, the construction corporations, and the industrial insurance companies, it demonstrated that contract medical practice was engaged in by many more men than any of the medical societies had any definite knowledge of. The least number of these men engaged in this form of practice were members of the County Medical Society. They had no time for scientific work, no time for self-improvement, and were interested in nothing except to meet the demands of their contracts and make a sort of living. They could not do good work for their employers because they must contract to look after too great a number of persons at these small fees so as to make a living. The custom of fee splitting, to which most of these men resorted to make additional money, was in part the direct outgrowth of this form of contract practice. Averaging only from twenty-five to fifty cents a call, they thus gained a few dollars extra when they found they could call a surgeon or other specialist of their own selection. In the majority of instances, not being members of the organized societies, they were beyond reach of the societies' moral discipline. On the other hand, from personal interviews with some of the grand officers of these orders they learned that the employers of these physicians were aware of the poor character of the services they received and were apparently willing to meet the County Society, or any other regularly organized medical body, more than half way in an effort to effect mutual improvement. The question before them, therefore, became one of control first and correction of abuses second. Should the County Medical Society assume control of this form of practice? The Committee felt that since this form of practice was so extensive and the abuses attending it so great the County Society should further investigate and study this form of practice. There was no way in which it could be abolished. It was moved, seconded, and carried that the Committee be continued for another year.

There was no scientific session at this meeting.

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**Immunization of Guinea Pigs with Nucleoproteins of Cholera Vibrios.**—V. de Bonis and P. Natale have found that the administration per os to guinea-pigs of the nucleoproteins of the cholera vibrio produces in these animals a reaction similar to that associated with the production of specific antibodies. Those animals that resist the toxic action of the nucleoproteins are also endowed with a considerable degree of immunity to cholera infections.—*La Riforma Medica.*

## MEDICAL ASSOCIATION OF THE GREATER CITY NEW YORK.

*Annual Meeting, Held January 20, 1913.*

The President, Dr. Reynold Webb Wilcox, in the Chair.

**Election of Officers.**—The following officers were elected *Recording Secretary*, Dr. P. Brynberg Porter; *Chairman for the Borough of Brooklyn*, Dr. Robert E. Goughlin; *Chairman for the Borough of Richmond*, Dr. William Bryan; *Member of the Council*, Dr. Louis Faugères Bishop.

**High-Tension Electricity as a Remedy with Presentation of Cases.**—Dr. J. Herman Branth, in this paper, said that he spoke as a general practitioner, whose knowledge of this and other subjects was founded not alone upon textbook information, but also upon personal experience. It was known by all who had studied electrical science that electricity, and principally high-tension electricity, is capable of urging metabolism into normal lines, and this would be the chief basis for the arguments presented. All electrical currents, however produced, which would leap through an air-space or "gap" were regarded as of high tension character, and some years ago he had demonstrated before the association that the extremely high tension current passes through every known insulator, either directly or by electric stress of opposite polarity; quantity, of course, being also considered a factor. On the basis that high tension electricity, in its passage, will affect and correct metabolic disorders in an organ, he had applied it with success to glandular tumors of the neck. It was true that the *x*-ray was also used in some instances, but greater reliance was placed on the high tension, high-frequency current, by the bi-polar method, a gentleman of 69 suffering sion current sent through a Leyden jar and on one or more spark gaps, and he had obtained a very high tension current by means of a Tesla coil step up transformer. One of the remarkable facts observed was that the application of a high tension, high frequency vacuum tube will give pain only when this is made to a diseased part; so that as a patient advanced toward normal conditions, the tolerance grew in the same degree. When the vacuum tube of a very high voltage apparatus was applied to the surface of the body there were produced redness and warmth, due to dilatation of the capillaries. More blood was attracted to the part, and this, according to Metchnikoff, meant increased phagocytosis. At all events, there was increased vitality of the tissue cells. Now, if this were a law, what should happen when the current was sent through an organ like the liver or kidney in a subnormal state? It would undoubtedly help or stimulate nature to overcome abnormal conditions if the vitality were not too exhausted to bar repair. So, too, in arteriosclerosis we should expect relief from a remedy acting in this manner. Acting on this hypothesis, he had treated with the high tension, high frequency current, by the bi-polar method, a gentleman of 69 suffering from general arteriosclerosis who a year ago last summer had to be sent home from the country on account of alarming cardiac symptoms. The result had been most gratifying. His general health was now good, his mind was bright, and he was engaged in literary work. Dr. Branth gave a word of warning here, however, in regard to the sending of the current through the heart. The electric force might disturb the rhythm of a weak heart, or might even stop it altogether. Tumors of the female breast, he went on to say, often yielded to this current in combination with the *x*-ray. It was well known that these growths generally, perhaps always, developed malignancy, but the knife was not always a sure remedy. Some two years ago a woman with a small tumor in the left mamma, who was being treated by him with this combined method, became dissatisfied because her case did not improve more rapidly and sought surgical intervention. This led by metastsis into general carcinoma, which terminated fatally last autumn. The treatment by the *x*-ray alone of tumors of the breast, or, in fact, of any deep-seated malignant tumor, had not in his hands been attended with success, though in superficial cancer its success was indisputable. The action of high frequency currents, he believed, was analogous to the methods of nature. In the case of an inflammatory lesion (a cut, a carbuncle, a pneumonia, or any other) nature always supplied fever heat in the process of repair, and a stream of electricity was also a stream of heat in such line as we chose through the body, while, in addition, the proper electrical current would promote in the body cells the throwing off of waste material and the taking in of nutriment. It was by no means his desire to replace internal or external medication by electricity; indeed, the two often admirably supplemented each other. As had been stated, vital metabolism was stimulated by electricity,

and, taking advantage of this fact, he had treated young girls with amenorrhea successfully, where iron medication alone had no effect whatever; the iron passing off in the blackened stools. As soon as static electricity was added to the treatment, however, the stools became lighter in color and the blood richer in hemoglobin. The same principle held good in the administration of arsenic, mercury, strychnine, and other drugs, and only half doses of these should be given when electricity was also employed. The speaker then illustrated the effect of very high tension electricity by a comparison with sounds and their perception. The human ear had a certain register of capacity, but above or below a definite range of sound vibrations we could not hear anything. The lowest note the ear could perceive was the sound of the 16-feet organ pipe: There was, however, an organ pipe 32 feet long which was inaudible if sounded alone; yet if this were sounded with the 16-feet pipe the latter's note was intensified, because its sound wave moved parallel with one-half the sound wave of the longer pipe. All kinds of electricity were the same kind of force; what variation existed was only of pressure (voltage) and quantity of flow (amperage). The voltage might be called the latitude of register. If we used the ordinary induced current with a Leyden jar of large size, the spark produced a painful sting, because it was within the nerves' register. If, however, we drove this same induced current through a step-up transformer until it got beyond the nerve register, we would have a current pressure which was quite bearable. This current reached an immense pressure (voltage), but, the output of the machine being always the same, we got a quantity (amperage) of inverse ratio to the voltage. Dr. Branth said he was perhaps the first to learn (many years ago) that by the interposition of a number of spark gaps an *x*-ray tube of low vacuum could be brought to act like a hard tube and attain greater penetration. Then it seemed to him that a force, like high tension electricity, moving at great velocity was difficult to divert from a direct line, and, if this were a fact, such currents would surely act upon internal organs lying on the line of the current. In high tension, high frequency electricity, as in the case of the *x*-ray, the interposition of multiple spark gaps would also induce penetration. High tension electricity undoubtedly had a field for remedial application, especially as we could apply it locally to a part (even to internal parts) which could not always be reached by internal medication.

The first case of which he gave a detailed report was a well-marked one of hepatic cirrhosis in a man of 59. The patient was emaciated and sallow, and apparently doomed to die. He had been tapped some seventeen times by his physician in Yonkers, 3½ gallons of fluid being removed every twelve days. The treatment instituted consisted of bitter tonics and the use of high tension bipolar electricity, and under this the accumulation of fluid in the abdominal cavity grew less and less rapid; so that tapping was required at increasingly longer intervals. The last tapping was done on November 5, 1911, and shortly after that he went to Florida, where he remained until April, 1912. He then returned to New York in excellent health, and Dr. Branth last saw him early in December, when he expressed the wish to be present at this meeting. Unfortunately, he contracted erysipelas the latter part of the month, and died from that disease on the 30th. His physician, Dr. Padgett, had informed Dr. Branth that not a vestige of the hepatic trouble was observable. Two other cases described were present in person.

Mrs. F., an Italian married woman, who came to America in 1910. Some time after her arrival her abdomen became enlarged. This was found to be due to fluid in the cavity, and it finally became necessary to tap her every seven or eight days, from 16 to 26 pints of fluid being removed each time. When she was referred to Dr. Branth he found the liver so much reduced in size that it could not be palpated even after the abdominal fluid had been evacuated. The same treatment was employed as in the preceding case, and with equally good results. The last electrical treatment was given on May 11, and since then she had remained well.

Mr. F., aged 17, a college student. Nine years ago he was operated on by Dr. Thorner for sarcoma of the left ilium, and subsequently he was treated by means of the *x*-ray by Dr. Branth, with the result of recovery in eighteen months. In February, 1912, a painful tumor appeared over the left lower ribs, a recurrence of sarcoma. He came to Dr. Branth on June 13, when it was found that he also had a lateral curvature of the spine, with rotation and deep depression of anterior and posterior of chest. He was given *x*-ray treatment, combined with the bi-polar high tension, high frequency current, and this afforded him relief much more quickly than the *x*-ray alone in the previous attack. Another and unexpected result was the reduction of the spinal curvature, with the removal of the chest depressions. It was unbelievable that the *x*-ray was a factor in this, but it might well be inferred that the high tension electric current, in passing through the subnormally nourished tissues, stimulated metabolism in them; and thus repair was inaugurated. This would seem like a profitable field for investigation. The patient was still under treatment, but the tumor was now very small and not very painful.

Dr. Frederick de Kraft said that the results which Dr. Branth had obtained by the utilization of high potential, high frequency currents in the cases presented were truly remarkable. In order to understand how he had achieved his success it might be well to consider briefly the method of producing these currents. If we attached a pair of small Leyden jars to each of the two prime conductors of a static machine and had the sliding rods slightly apart, the machine running at fair speed, we noted the rapid passage of sparks at the sliding rods. A pair of electrodes attached to the outer coatings and held the same length apart would also show a shower of sparks. Such an arrangement was shown by Dr. William J. Morton in March, 1881, under the name of static induced current. D'Arsonval interposed a stout copper spiral between the outer coatings, utilizing the same arrangement. Tesla made use of the inductive properties of a D'Arsonval spiral on a secondary spiral of greater length, interposing insulating material between the two for obtaining currents of high potential and high frequency, the D'Arsonval current being of low potential. That these currents can be made to penetrate the tissues could be clearly shown. A pair of electrodes attached to opposite sides of a D'Arsonval spiral were placed against the opposite sides of a potato, and a current of 1500 or more milliamperes was passed for two or three minutes; when steam would be seen to rise very quickly from the potato. On cutting through the potato we would find that the interior was cooked and mealy, while the skin had remained untouched. By the degree of cooking we could clearly trace the lines of current passage. Prolonged cooking would dry out the center in a straight line, while the rest of the potato was still moist and steaming. This principle could be utilized in practice; we could heat an organ to any desired degree. Dr. Branth had employed a Tesla coil energized by a Toepler-Noltz static machine of remarkable efficiency, and this apparatus he constructed himself. The current obtained from it was one of high potential and high frequency. By the use of a glass vacuum electrode attached to one end of the spiral and of a metal electrode attached to the other end he had secured a current of very deep penetrating and marked warming power. The first effect noted at the point of application of the glass vacuum electrode was pronounced anemia of the part, but this was quickly followed by an intense scarlatinaform erythma of long duration. If we applied a powerful irritant (such as this glass vacuum electrode afforded) to the skin we would find that the sensitiveness of the surface was much increased; but the feeling of pain soon diminished. The circulation in remoter organs was influenced, and by reflex action, vasomotor, sensory and motor nerves, glands, and involuntary muscular fiber were stimulated. Organs which were deeply seated were relieved of congestion by the hyperemia of the skin produced. Again, as the result of the heating effect occasioned by the molecular bombardment of this oscillatory current as it rushed through the tissues, we created centers of heat in every vital cell. As a further result we had an intensification of the circulation, arterial in kind. The arterioles became much dilated and the venous engorgement was relieved by a stimulation of the vasoconstrictor nerves, resulting in an attenuation of the abducent vein. The normal cellular activity was aroused as the result of the heightened nutrition made possible by the greatly increased flow of arterial blood, while, in consequence of the altered vascular supply the morbid interstitial tissue was subjected to an altered nutrition and disappeared. The pressure being relieved, especially in these hepatic cases, the flow of blood was guided into normal channels. It was thus that Dr. Branth had achieved his wonderful results, and he certainly deserved the commendation of all for having had the courage to apply these methods to such desperate cases, very few of which character had ever recovered under any plan of treatment.

Dr. Albert C. Geyser said that the cases presented by Dr. Branth spoke for themselves and therefore called for no discussion on his part. The technical portion of his paper, however, afforded much opportunity for elucidating remarks; though time would scarcely permit him to take up any other point than the title of the paper. Much had been said concerning high tension, high frequency, step-up transformers, dielectrics and high and low voltage; terms

which were very confusing to the average listener. The speaker then illustrated upon the blackboard the meaning of these various terms. If, he said, energy were applied to a piece of steel spring fastened to a holder, so as to bend it from its normal upright position to an angle of 45°, and keep it there, we would have, by the expenditure of energy produced in the spring, a form of kinetic or stored energy which, when released, would be turned into dynamic or moving energy. The effect of this dynamic energy would cause the spring to vibrate or oscillate from one side of its center or normal position to the other until, as the oscillations grew smaller and smaller, it would come to rest. The same amount of energy which was originally bestowed upon the spring was now returned to us in the form of oscillations. If this stored energy were released in a vacuum instead of the air, the vibrations would continue longer, on account of the lessened resistance. It was apparent that the farther the spring was originally forced from its normal position, the greater would be the tension or pressure. If a limiting buffer were placed upon either side of the spring, so that it could be bent from its path, say, one inch, we would have only as much tension or pressure as the bending of one inch would create. This, then, was high or low pressure tension in the spring, and we had an exact analogy in electricity. Whenever a current was induced through a non-conductor (dielectric) into some electrical capacity, stress, strain, pressure, tension or voltage was set up in that capacity. The capable voltage or tension depended upon the number of turns and other conditions in the secondary capacity, if that capacity happened to be a coil of wire.

If the primary current emanated from a static machine, the size or the diameter of the revolving plates decided the voltage. As the source, we might have either a transformer coil or static machine, and this source was analogous to the steel spring in which was stored kinetic energy. From it we had two conductors, and connected with each was an adjustable spark gap represented by the two buffers placed upon either side of the steel spring. Just as these buffers created the extent of the tension in the spring, so did the spark gap limit or control the tension or voltage in the electrical circuit. No more voltage could be created within this circuit than was necessary to break down the spark gap resistance. Just as soon as the voltage or tension had risen to the proper height to cross the intervening air gap, that moment a spark or series of sparks passed, and equalization or rest was restored in the tension of the electrical circuit. As we passed further down from the spark gap, the conductor came in contact with the inner lining of the condensers or Leyden jars. One conductor was the plus (+) or positive, and the other the minus (—) or negative pole. This inner side of the Leyden jar became an extension of the conductor, and in this way a capacity charged with the same kind of electricity as the conductor. The inner side of one of the two jars became charged with the positive kind, the other with the negative, while the glass wall acted as a non-conductor or dielectric. The same phenomenon occurred as before. By the process of induction, the same amount and the same stress, tension, or voltage was set up in the outer coating of the jar, but of opposite polarity. The inner positive jar caused the outer capacity to become negatively charged, and *vice versa*. If now a coil of wire consisting of a certain number of turns, in accordance with the rest of the apparatus, was connected to the outer coatings of the jars, we had constructed a D'Arsonval apparatus. From this spiral two conductors were led to the patient. Each time that the outer coatings were charged with the induced current they tended to discharge themselves—tended to equalize their stress or tension, with the same result as in the case of the spiral spring. Oscillations were thus set up which were large in amplitude at first, but gradually grew smaller until they subsided altogether. Then a new set of similar oscillations followed. It has been estimated by the experts of the wireless system that 200,000 of such discharges might take place per second, each discharge consisting of from 100 to 150 oscillations; so that there would be several million oscillations in a second. Hence the term high frequency.

Dr. William Stevens said he had had the opportunity of seeing the Italian patient at Dr. Branth's office. When she first came under Dr. Branth's care, November 14, 1911, she had been ill for a year, or more, and had been in the hands of a considerable number of physicians. There was apparently an obstruction of the portal circulation, and Dr. Branth suspected the presence of an inflammatory condition, due perhaps to colon bacillus or other microbic infection. There was on the abdomen a large, foul-smelling sore, which had been caused by canthridal blistering and also a large ventral hernia, the result of an exploratory laparotomy. The abdomen was enormously distended with fluid, and on its surface were black streaks. The prospect of relief, under ordinary methods of treatment, looked hopeless, and Dr. Branth, acting on the courage of his convictions, determined to employ the treatment described, believing it to be the only method which afforded any chance at all for the reestablishment of normal metabolism in the parts affected. The happy result all could judge of this evening.

Dr. Ernest F. Ruppe, the regular medical attendant of the patient with sarcoma, said he could fully substantiate all Dr. Branth's statements in regard to that case. Several surgeons had advised operation, but at the same time held out very little hope of a real cure. It then occurred to him to consult Dr. Branth, who had treated him successfully in the former attack, and the result was the most marvelous cure of osteosarcoma that he had ever witnessed. He could also testify to the remarkable disappearance of the lateral spinal curvature.

**Some Newer Methods of Treatment for Malignant Disease.**—Dr. William Seaman Bainbridge, who read this paper, made some introductory remarks in regard to the work of the Committee on Scientific Research of the New York Skin and Cancer Hospital in the testing of new methods, surgical and non-surgical, for the treatment of malignant disease. At the present time, he said that, with the assistance of his staff of research workers, he was conducting investigations along several different lines. No final conclusion could be announced concerning any of these investigations, and the present demonstration was merely a report of progress. With this in mind he spoke briefly of the work of the committee upon the following methods of treatment: 1. Electrical — (a) fulguration; (b) thermoradiotherapy; (c) electrocoagulation, thermopenetration, diathermy, etc. 2. Serological— (a) Vaughan cancer extract; (b) Skin and caner extract, etc. 3. Surgical — (a) ligation of pelvic arteries. Three patients, two of them women of advanced age, were presented who had been treated with remarkable results, by means of fulguration. Lantern-slide pictures were then shown of the de Keating Hart fulguration apparatus, of the Doyen electrocoagulation apparatus, and of a large number of patients before, during, and after treatment by different methods. A surgical procedure to which Dr. Bainbridge directed special attention was the method of the "starvation ligature" in the treatment of so-called inoperable cancer of the pelvis. He had resorted to this measure in some fifty cases of advanced irremovable cancer, sometimes in conjunction with the curettement of the diseased areas and sometimes in conjunction with one of the other methods of which he had spoken. The serological treatment, he went on to say, had received considerable attention on the part of the Research Staff of the Skin and Cancer Hospital, the results of which would be reported in due time. In closing he made an urgent plea for humanitarianism in the treatment of cases of so-called inoperable cancer, emphasizing the fact that in many instances ordinarily called inoperable much could still be done for the relief of suffering and the prolongation of life by the application, according to the circumstances of the case, of one or more of the various measures he had mentioned as now being employed at the Skin and Cancer Hospital.

Dr. Gordon K. Dickinson of Jersey City said that Dr. Bainridge had the aptitude and capacity for working out such problems as those presented this evening, and that the Skin and Cancer Hospital was well qualified to offer the facilities necessary for the purpose. The work done at that institution he had had the opportunity of seeing in a number of instances. The superficial cases were almost always successful, but in the deeper-seated ones the disease was apt to return and end fatally. In this connection he referred to a case of papilloma which had come under his observation, in which the patient was relieved for a time, but eventually died. As to the treatment described there was something more in electricity and this type of current which we did not yet understand. He could but feel, however, that a good deal of the success which had attended the fulguration method was due to the operative procedures before its application.

Dr. Herman J. Boldt said he was simply astonished at the results accomplished, as portrayed upon the screen. Dr. Bainbridge, he thought, was to be particularly congratulated upon the manner in which he had combined these special forms of treatment with surgery. In the treatment of cancer we might never, perhaps, be able to decide upon any one specific, but it had been shown that we now had methods for curing a large proportion of cases, and in the others for relieving the pain and prolonging life. Personally, he believed that in serology there would be found a wiser field of usefulness than in any other direction. In the cases Dr. Bainbridge had described

and shown, however, he was convinced that no other treatment than that employed could have given such successful results.

Dr. Edward M. Foote said that the results shown this evening illustrated strikingly the advances which had been made in the treatment of malignant disease. Electricity, chemistry, and serology were now called into requisition, in addition to surgery, and they all had their advantages. We had reason to hope for still further results in the future, and as time went on we would find out what measures were best.

Dr. Worthington Seaton Russell said that in the case of Hodgkin's disease, which had been shown upon the screen, the patient had come to the Skin and Cancer Hospital from another hospital, where he had been told that his case was hopeless. There were immense masses on both sides of the neck, and not only were the cervical glands enlarged, but also those of the axillæ and other parts. Up to the present he had received thirteen treatments. At first the treatments caused some systemic reaction, but later on there was no reaction, and he was now receiving massive doses. The various glands had become much reduced in size, and in some of them the enlargement had entirely disappeared. The man was a florist, and was able to work regularly at his business. What the ultimate outcome might be no one could say, but, at all events, the treatment would undoubtedly prolong the patient's life. The case of tumor in the lungs, *x*-ray pictures of which had been shown, had received eleven treatments. It had been pronounced quite hopeless in a number of hopitals; yet this patient was now out every day and was able to do a certain amount of work. It was scarcely to be expected that he would be cured of his tumor, but his condition had certainly been greatly relieved. Very careful statistics of all these cases were being kept.

Dr. William Benham Snow said that the hot spark, as delivered from a high frequency apparatus, was not fulguration proper, but what might be, and was correctly, called destructive fulguration; while the desiccation method of Clark dried out the tissues, and thus destroyed them. The long, cooled spark of de Keating Hart did not destroy tissue, but acted as a stimulant, which overstimulated all of the tissues to the extent that the cancer cells perished. The reparative process after its application was slow. During this there was a profuse discharge of serum, a lymphorrhea, in the course of which the cancer cells perished. As to Hodgkin's disease, he had seen a case, treated by Dr. Herman Grad, in which there was extensive enlargement of many of the glands in the neck, axilla, and groin. Under *x*-ray treatment these all disappeared, but at the same time the red blood cells became more and more reduced until death ensued. In the case shown on the screen and further described by Dr. Russell, he would like to know whether there had been any change of this kind observed in the blood count. He was much pleased to see the tendency at the present time to the joint use of surgery and the *x*-ray and other electrical measures, a matter which he had advocated for years. In regard to the removal of lymphatic glands, he thought that in all cases only the enlarged glands should be removed, because these glands were defenses retarding extension in case of recurrence. The removal of the glands of the axilla and beneath the pectoral muscle was often too radical when the *x*-ray or fulguration could be used in addition to surgery. He hoped that the method described by Dr. Bainbridge would lead to the conclusion that it was not advisable to remove other than the diseased glands.

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

*Stated Meeting, Held January 21, 1913.*

Dr. Linsey R. Williams in the Chair.

**Demonstration of Bloodless Phlebotomy (Phlebostasis).**—Dr. S. Lilienstein of Bad Nauheim presented and described an instrument which had proved a valuable adjunct in the treatment of weakened heart action in cases of decompensation. Reduced to its simplest terms, this instrument consisted of two hollow cuffs connected with a manometer and a rubber bulb. The cuff was placed around each upper arm. Air was then pumped into the cuffs through the rubber bulb and at the same time the pulse was controlled. A pressure of 80 to 100 mm. mercury was usually sufficient. At this pressure the pulse was not entirely obliterated: only the venous flow from the arm was retarded, with the result that a peripheral congestion of blood ensued. In patients suffering from cardiac dyspnea, dull feeling in the head, feeling of oppression, etc., a marked improvement was felt after this treatment. During the past two years this instrument had been used over five hundred times with the usual good effects described. The degree of relief obtained varied with the nature of the heart lesion and the amount of decompensation. The speaker cited a number of illustrative cases in which this treatment had been followed by symptomatic relief lasting several hours. The principle of the method was that venous stasis in the periphery produced unburdening of the heart. Phlebostasis, as Dr. Lilienstein had designated this method, was almost equivalent to venesection, with the difference that there was no loss of blood, and so one was justified in calling it bloodless phlebotomy. This method of treatment would not revolutionize the present therapy of the heart nor could one do more with it than with the standard chemical heart tonics, digitalis, strophanthus, and their derivatives, or by physical therapeutic means. But all those who were called upon to treat continually so many cases of objective and subjective disturbances of the heart had experienced the gratefulness of chronically ill patients for every new effectual means of relief. This instrument gave a rapid relief of subjective symptoms.

**Demonstration of the New Electrocardiophone.**—Dr. S. Lilienstein exhibited and described this instrument. He did not go into the technical detail of construction, but stated that the apparatus was a kind of heart telephone and enabled the surgeon to control heart action during narcosis. It permitted the operator to have both hands free while listening to the heart. Furthermore it permitted the heart to be watched for long periods of time from a distance—during balneological procedures, packings, vapor baths, etc.—an observation which was valuable in sanatoria, bathing establishments, and similar institutions. At Nauheim he had an electrical arrangement leading from the different bathing compartments to a side room where he watched the cardiac cases. In his own home he had an electrical system connecting one room with another which permitted him to observe patients from another room. Patients were frequently very nervous and their heart action became aggravated under direct examination. The same principle that governed this simple apparatus had been applied to a larger one which served to demonstrate heart sounds and murmurs to a large audience. By transforming the electric current, the heart sounds and murmurs taken up by the microphone might be heard by from ten to twenty persons. He had named this instrument the cardiophone and it enabled him to register graphically the heart sounds and murmurs, as could be seen by the curves exhibited. An additional galvanometer was necessary for recording the curves. It was very instructive to have the heart sounds and murmurs registered by curves, as these curves demonstrated variations corresponding to definite pathological states whose significance had not yet been recognized.

Dr. Arthur D. Hirshfelder of Baltimore, Md., presented some photographs and lantern slides of the electrocardiophone and also some tracings that had been made of complete heart block. The auricular sounds were audible and the successive systoles enabled one to make a diagnosis clinically of complete heart block. The ventricular rhythm was regular. They had found this instrument very useful in teaching students; they first listened to the heart in the ordinary way and their findings were then compared with the tracings obtained by the use of the electrocardiophone; in this way it was hoped that they could improve their acumen in accuracy of diagnosis.

Dr. Charles E. Quimby said there was little to be said regarding an instrument which accomplished such specific results; he therefore did not believe that he had anything to say except to congratulate Dr. Lilienstein upon the work that he had done with this instrument. With reference to the electrocardiophone itself he had presented facts to the Section. Regarding phlebostasis, there were two points that he wished to impress upon all. First, one should forget the instrument; not to forget the instrument itself was, in his opinion, one of the great defects of the modern medical mind. He advised them to think more of what they were trying to accomplish and not so much of how they were trying to do it, that was, how to retain a certain amount of blood in the peripheral circulation. Secondly, he said he had had a desultory experience covering twenty-five or twenty-eight years in controlling the circulation and he had sometimes suggested this point, that the holding of blood in the two arms did affect the heart, and when the blood was let out there was a sudden flow of blood to the lungs. The apparatus in certain cases

raised the blood pressure, but it also lowered the blood pressure when it was already high, and for this reason; If the heart got just a little chance to rest it had a chance to pull itself together and could do so wonderfully; the heart seemed to be eternally grateful for this chance for rest and picked up marvelously, even if the amount of rest was little.

Dr. George Mannheimer said there seemed to be a great divergence of opinion with regard to the kind of cases in which this instrument should be used. They had an instrument of this kind by which one could exactly determine the venous pressure in every case. In cases where one could extract large quantities of blood, the limbs might be tied, a custom which had been used for years in pulmonary hemorrhage. Other instruments were used because they did not interfere with the ordinary circulation as much as did the one just presented with the cuffs.

Dr. Alfred E. Cohn said that at the Rockefeller Institute they registered the heart sounds by means of the microphone and with it they had more success than with the instrument shown by Dr. Lilienstein. It could be used for purposes of clinical investigation. A number of years ago he was struck by the fact that digitalis caused a heart block and when given in mitral stenosis there was shown a presystolic murmur which was made by the contraction of the auricle. A discussion of long standing ensued as to whether this was presystolic and made by the contraction of the auricle, and whether it occurred at the first portion of ventricular systole. The use of the microphone could, in his opinion, be extended and aid them in clearing up many obscure cases.

**Exhibition of a Patient Showing an Unusual Sign.**—Dr. Rolfe Floyd presented a patient who had an unusual sign over the junction of the first rib and column of the right side. There was a peculiar whistle at that point. The patient entered Bellevue Hospital two months ago complaining that for one year he had had a cough with white and yellow sputum which not infrequently was streaked with blood. The cough was intermittent. In addition he complained of intense pains in the chest which were not sharply localized. He stated that he was in ill health and unable or unfit to work. He did not lose weight. There were no tubercle bacilli in the sputum, he had no temperature and had nothing beyond what he stated on admission. On physical examination there was found nothing beyond this whistling sound which occurred at the junction of the first rib with the column on the right side; the sound was continuous, and more intense with systole and less so in diastole. It did not change in ordinary respiration. Sometimes in exercising with the arms it would disappear temporarily. The quality of the sound was high pitched and sibilant, frequently musical. One gentleman thought there was a tuberculous infiltration of the right upper lobe; personally Dr. Floyd was skeptical regarding this. Plates were shown which gave no explanation of the sound. He was at a loss how to interpret the sound. By some it was thought that it might be made in the blood vessels, but this was thrown out. Others thought it might have been made in the smaller bronchi in the upper part of the right lung secondarily dependent upon pulsation occurring in some disease or in normal vessels which lay against the apex. Dr. Floyd asked for some suggestions regarding the interpretation of this peculiar sound.

The following were contributions from the medical wards of the New York City Hospital:

**Exhibition of a Patient with Hypopituitarism.**—Dr. R. A. Cook presented a woman, forty-five years of age, who was admitted to the hospital April 4, 1912. It was impossible to get an accurate history because she was not visited by friends and her mental condition was quite below par, thus making a good history unavailable. She stated that she had been married but had had no children. Her family history was negative. Her habits were good. She denied ever having had in the past any illness of any kind. There was no alcoholic nor venereal history. Her menses ceased when she was thirty-eight years old. Three months before her admission to the hospital she complained of intense headaches and at the same time pains in the feet, legs and shoulders. When seen in August last she appeared just as she now appeared before the Section except that her mental condition was worse. She was an irritable but somnolent woman, lying in bed groaning with pain referred to her head, with expression dull, mentally much below par, weight 145 pounds and height 4 feet 7 inches. It was impossible to get her to speak at all rationally. In many ways this was a very interesting case. She was over-nourished. She had an extremely large head and a peculiar condition of the lower jaw; there were spaces between the teeth of both the upper and lower jaws. There was a moderate amount of exophthalmos. There were no motor manifestations. It was impossible to examine her eye grounds. There was no nystagmus, nor oculomotor palsy. Vision showed right 5/20 and left 5/30. Perimetric deviations were not made. The heart was normal. There was a blood pressure of from 160 to 170. She passed from 30 to 40 ounces of urine daily in which there was some albumin and a few hyaline casts. The condition of the blood was somewhat peculiar, in which there was from 8 to 19 per cent. eosinophiles. There was no increase in the leucocyte count. A test was made of her carbohydrate tolerance, 350 grams of levulose being given; this was not followed by any appearance of sugar in the urine at all. She had no subnormal temperature, as many of these cases had. She had a very marked adiposity but there was no increase in the size of the hands or feet. The *x*-ray pictures of head and teeth were shown. Also pictures of the sella turcica, first of the normal and then of what the patient presented, in order that a contrast might be demonstrated between the normal and the abnormal. In the treatment of this patient pituitrin had been used, but with no improvement. The question of operation was a difficult one to answer. Dr. Cooke thought that the use of the posterior lobe extract of the pituitary gland was possibly the best treatment. At present the patient appeared to be much better, having no headaches and with a normal vision.

**An Unusual Case of Syphilitic Nephritis, Hepatitis, and Myocarditis.**—Dr. Harlow Brooks reported this case. The patient was a man, 63 years of age, who entered the hospital in February, 1911. His family history was unimportant. He had had rheumatism ten years previous and typhoid fever seven years ago. He was a moderate user of alcohol and tobacco. He denied absolutely any history of venereal infection or any skin or mucous membrane symptoms which might be construed as of syphilitic origin. His chief complaint was shortness of breath, especially on exertion, which was associated with pain in the pericardium, headache, swelling, and cyanosis of the hands and feet. The right pulse was very small and indistinct and was absent for most of the time. The left pulse was regular, the artery being plainly palpable and thickened. The respiratory movements were shallow, rapid, and accompanied by sibilant râles, apparently without auscultation. The apex beat was visible and palpable in the fifth interspace and four inches to the left of the midsternal line. The right cardiac border lay one and one-half inches to the right of the midsternal line. The heart sounds varied greatly in rhythm, and in the occurrence, disappearance, and location of murmurs. The thorax presented considerable bulging and enlargement of the left side. There was a broad area of dullness beneath the manubrium sterni but no tracheal tug or abnormal suprasternal pulsations. There was enormous distention of the superficial thoracic veins, and of those which communicated with the radicles of the superficial epigastrics. Liver dullness extended about one hand's breadth below the costal margin. The liver was very firm and somewhat tender. The abdomen contained considerable fluid. Examination of the blood showed a constant polycythemia. The urine showed the continuous presence of albumin, epithelial, and occasionally blood cells. A diagnosis was made of aneurysm of the transverse arch, myocarditis, cirrhotic liver and spleen, with secondary nephritis and polycythemia. Radiographs verified the diagnosis of aneurysm of the transverse arch. Syphilis was assumed to be present, but the Wassermann reaction was at first reported negative, but after treatment had been instituted was found to be strongly positive. The patient had a strong intolerance for the iodides, so salvarsan was used; his condition improved markedly under this treatment together with heart stimulants. In November he developed a gangrene of the right foot and a diagnosis of embolism from a detached cardiac or aneurysm clot was ventured. Death soon followed. At autopsy the retrosternal mass was found to be a widely dilated but not sacculated arch, which together with the entire artery was very extensively diseased and ulcerated; the ulcerations were in a healing and not a progressive state. The heart was greatly enlarged and showed a diffuse interstitial myocarditis with occasional small gummatous scars undergoing rapid fibrosis. The small pulse on the right was explained by a very old thrombosis with a subsequent canalization of the right brachial artery. The liver was greatly enlarged and showed the results of chronic congestion; there were frequent healed gummatous scars. The spleen was indurated and enlarged, and the kidneys showed a diffuse fibrosis with nodules of compensatory parenchymatous hyperplasia. Realizing that microscopic study of this process might give a clew as to the manner in which healing might occur in the heart

muscle in syphilitic myocarditis under the effects of salvarsan, such a study was made. Microscopical examination of the heart showed in the main considerable atrophy, which with certain exceptions seemed to have been of pressure origin and not due to inherent disease of the muscle cells. For the greater part striation was well preserved; there were a good many enlarged and karyokinetic nuclei, but cytoplasmic alterations were mostly wanting excepting in the cells of the papillary muscles where brown atrophy was quite general. The connective tissue interstitium was universally increased. This applied not only to the endomysium, but also to the connective tissue of the endocardium and epicardium. It was notably evident that hyperplastic connective tissue was most abundant and the evidences of recent growth were most manifold about the arterioles of the coronary trunks. A further peculiarity of this interstitial overgrowth was its highly cellular character, as though of rapid and recent formation or true scar formation; it was not present execept in the papillary muscles and in the foci of old gummatous inflammations. Very few infiltrating leucocytes or wandering connective tissue cells were present and even about the blood channels very few indications of inflammation were to be made out. Lymphocytes were exceedingly few in number in both the connective tissue and the walls of the vessels except in the papillary muscles where foci of infiltration and actively hyperplastic cells were present. Connective tissue necrosis was also infrequent. Notwithstanding the fact that gross examination indicated that the coronary vessels were not markedly involved, the microscopic sections showed that the walls were very much diseased. The scars found at various points in the heart wall and apparently representing the sites of old gummata showed under the microscope a replacement process of the muscle by a growth of young areolar tissue like that found elsewhere in the specimens. There was nothing anywhere evident indicating activity of the process and nothing to signify that it was a syphilitic process. Spirochetes could not be demonstrated in any of the sections. Sections of other viscera showed almost universally similar changes. The picture of the entire process was one of definite and rapid healing and one which was apparently taking place with the minimum injury to the surrounding parenchymatous tissues.

**Report of Two Cases of Hodgkin's Disease, One with Specimens.**—Dr. EDMUND P. SHELBY reported these cases. Among the noteworthy points were the following: (1) The duration of the disease, ten and one-half months. (2) The febrile onset. (3) The slight changes in the superficial lymph nodes no one of which was as large as a bean. (4) The marked efforts at repair as shown by the healing of the wound and diminution of the abdominal mass, gain in weight, and an unusual amount of hyaline fibrous tissue in the lymph nodes and viscera. (5) The continuous fever which did not reach normal until a few days before death. (6) The absence of gastrointestinal symptoms in spite of the high temperature and marked involvement of the abdominal nodes. (7) The limitation of the process to the abdominal lymph nodes and the viscera. (8) The occurrence of herpes zoster with hemorrhages into the spinal canal and degeneration of certain areas in the posterior nerve roots. (9) The convulsions and other evidences of marked toxemia toward the end. (10) The peculiar gelatinous tissue surrounding the membranes of the cord and the abdominal chain of lymph nodes. (11) The extreme difficulty of diagnosis even after a lymph node had been removed. (12) The absence of any positive evidence of tuberculosis. (13) The negative result of the Wassermann and von Pirquet reactions.

**Report of a Case of Mediastinal Tumor, with Specimen.**—Dr. R. GARFIELD SNYDER reported this case because of the difficulty in making a diagnosis. The chief complaint of the patient was his inability to work because of cardiac weakness which had existed during the past six months and which appeared to be progressive. The apex beat was on the opposite side of the chest and it was at first thought to be caused by a congenital displacement of the heart, a retracted right lung, an empyema of the left side, or perhaps an aneurysm, or a distended aorta. Dr. Cooke thought the condition might possibly be a diaphragmatic hernia because there was some tympany high up in the axilla. The condition was also thought to be due to some tumor, as a cyst. Dr. Le Wald made some *x*-ray pictures which were shown. A needle was thrust into the mass and a peculiar fluid was withdrawn; none of those present had seen a similar fluid. It was very thick, very gelatinous, and almost resinous in appearance. It reminded one of a thick syrup and was so thick that very little could be obtained. This patient was under observation for about three months and the *x*-ray pictures showed that the tumor was gradually increasing in size. The patient not only asked for operation but demanded it. The tumor was a fibromyxoma independent of diaphragm, thyroid, or thymus.

**Experience with the Use of Phenolsulphonephthalein in Clinical Medicine.**—Dr. ORRIN SAGE WIGHTMAN gave a brief description of the technique. One c.c. of the intensely red coloring matter of phenolsulphonephthalien was injected in fluid form into the deep muscles of the back, preferably the quadratus lumborum. Twenty minutes before the injection the patient drank a glass of water to promote free diuresis. The patient had already emptied the bladder or had been catheterized. If the catheter had been used it was left in place and a pan placed where the first urine secreted might be caught. In the pan were a few drops of caustic soda which promptly discovered the presence of color when passed from the bladder. This told the speed of the elimination after the muscular injection. If the ureters were catheterized instead of the bladder, the same method obtained. At the end of the first hour all available urine was collected in one bottle and represented bottle No. 1; at the end of the second hour they obtained specimen No. 2, and at the end of the third hour specimen No. 3. Roundtree and Geraty stated that the secretion was complete in two hours, but in their experience they had recovered color even after twenty-four hours. The object of the test was to recover as much of the color as possible, as 100 per cent. represented a perfectly normal kidney function. The colored or partly colored urine obtained was rendered alkaline with caustic soda to bring out all possible color and by proper dilution was compared in a special instrument with a standard solution of phenolsulphonephthalein. The apparatus for this comparison worked on the same principle as the Fleishl blood scale, viz., a comparison of color with a standard. When the percentage of color in the urine matched the standard solution it was read off on a scale on the side of the instrument. Naturally there arose a question of exact reading, but if the same man made a series of constant observations with the same technique there was usually not more than 5 per cent. variation which was near enough to be useful. The cases that had claimed their attention in these tests had all been cardiorenal, with the exception of those taken as a control to see how far the color might be eliminated from an apparently normal kidney. In the series observed they had carefully considered the age, sex, diseases of childhood which might have previously rendered a kidney or heart vulnerable, the family history, and the careful history of the patient's symptoms since coming for treatment. Where it had been possible a Wassermann test had been taken, the blood pressure followed, and an examination of the urine made with special regard to albumin, urea, indican and the microscopical findings. By following the above method a comparison of the results became more valuable, as shown by charts. From a clinical standpoint one was anxious to know how much of the kidneys were entirely active rather than to make the closer differentiation of the variety of nephritis. While the small number of cases were entirely insufficient for any conclusions, they were suggestive of the following: The amount of color voided told what the kidney was secreting at the time of the test. The picture of nephritis was an individual one and rarely of any strict class or subdivision. The elements entering into it gave merely class distinction by emphasizing either parenchymatous or interstitial elements. An apparently normal kidney secreted a high percentage of the coloring matter, while a diseased one did not.

Dr. CHARLES GOODMAN said that in 1910 he obtained phenolsulphonephthalein and in the fall of the same year he presented before the Section on Genito-Urinary Surgery his results in the use of this test. In certain cases such as double renal calculi, where the question arose as to which side should be operated upon, the results obtained from this test increased one's confidence in its efficacy.

**Pancreatic Lesions in Diabetes.**—Dr. JOHN H. LARKIN gave a demonstration of gross specimens from the Strecker Memorial Laboratory, among which were the following: Syphilitic pancreatitis in which the lesions were very marked. There occurred many cases of pancreatic apoplexy in cases of this nature. There was another type in which the sclerosis was well marked, with an almost entire displacement of the pancreatic tissue by the fibrous tissue; in many of these cases small cysts formed along the ducts. Another pancreas he showed was one in which the pancreatic tissue was naturally preserved, but showed in certain places an interlobular fat infiltration. Still another pancreas was one in which the insular sclerosis was but partial and caused functional disturbances and nerve irritation.

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## Original Articles.

### ON THE OCCURRENCE OF DEXTROROTATORY ALBUMINS IN ORGANIC NATURE.

By JOHN BEARD, D.Sc.,

EDINBURGH, SCOTLAND.

TWENTY-FOUR years ago the discovery of a transient nervous apparatus in the developmental histories of certain fishes directed my attention to the problems of alternation of generations in general, and of antithetic alternation in particular. Research in the intervening years was devoted mainly to the unraveling of the thread of animal development regarded as based in such an antithetic alternation of asexual and sexual generations. A review of the problems, which occupied the investigator during these years, and of their solutions, cannot be given here: the finds are recorded in the literature of science and most of the salient points may be found in detailed form in the memoirs, cited below.[1] These commence with "The History of a Transient Nervous Apparatus" and end in "The Enzyme Treatment of Cancer."

To the investigator, groping slowly along an untrodden path, it was of very great value, when, in 1907, it was recognized that the antithetic alternation of generations, which by observation had been found to underlie the cycle of animal development, was in reality based in the same antithesis of isomeric compounds of carbon as that laid bare by the epoch-making researches of Pasteur. These, as is well known, culminated in the foundation of a science of stereochemistry. Since 1860 stereochemistry has been advanced by the researches of many chemists, and here of these the names of LeBel, van't Hoff, Wislicenus, and Emil Fischer need alone be mentioned.

Modern embryology, like modern zoology in general, has concerned itself little with chemistry. As can be perceived now, many questions, which have troubled embryologists and zoologists, might have been settled easily once and for all and long ago had the contending investigators occupied themselves with the problem of the true chemical nature of the animal under discussion instead of assuming that of necessity all animals were alike in chemical nature and composition. The embryology of Carl Ernst von Baer and of his successors until recent times was exclusively a descriptive science based in observation. There was, indeed, but a single criterion by which anything embryological could be determined, and that was the fate of the cells concerned. But since in any developing "germ" the cells composing it are living, all questions concerning their fate during development are bound up with chemical, and indeed stereochemical, problems which demand answers.

In 1906 it first dawned upon me that in organic nature there must exist *at least* two sorts of living albumins, lavo- and dextrorotatary respectively, and in 1907 the conclusion was published, that the albumins of cancer and of malignant tumors in general must be dextro bodies, because of the destructive action, ending in liquefaction, of active pancreatic ferments, especially trypsin, upon them. Because of all this it became desirable to demonstrate, and by some method above reproach, that dextrorotatory albumins, similar to those of cancer, did exist, and, indeed, were widely present in other portions of organic nature. With this end in view in the summer of 1912 I began a series of experiments and now record some of the results. The vastness of the fields of animal development and of the unicellular animals or protozoa would, no doubt, permit of a wide series of experiments, but to carry out very full series would require much time, material, and financial means not at my disposal.

There are several ways known by which stereochemical questions can be solved. Of these two only need be referred to as connected with the present inquiry. These are (1) examination of the optical rotations of isolated (dead) liquid albumins in the polarimeter, and (2) the "lock and key" method, that is, the positive or negative action of certain ferments, as employed by Emil Fischer. Regarding the first, the isolation of the albumins in a state suitable for the study of optical rotation is beset with great intrinsic difficulties, more especially in dealing with minute microorganisms. Since all living matter is bound up with, and depends upon, the action of ferments, it is anything but easy so to isolate the albumins that they do not undergo autolysis or self-digestion quickly. The second method, that of the action of ferments, is much simpler in practice, and there only remains for brief discussion the reliability of this method of investigation, the question of how far it is to be considered as being a severely scientific criterion.

Probably today a stereochemist would not admit that these matters were open to doubt or discussion, but mindful of the circumstance that these lines are written for readers of whom many are not conversant with the facts of stereochemistry, it may not be superfluous to adduce reasons. One may read—I have myself written it—that "a ferment fits the substance upon which it acts 'as a key fits a lock.'" This simile, and the foregoing thesis, we owe to the genius of Emil Fischer. The dictum is quoted not infrequently, but, as happens with other classic scientific quotations, at times one may doubt whether the citation was made after a study of the original memoirs. It is an excellent rule to verify one's citations and that I propose to do in this instance.

Since it is my contention that the original words and proofs adduced by Professor Emil Fischer suf-

fice amply to establish the legitimacy of this scientific test by means of ferments, and to make it at least equal in value to the test of the optical rotation in the polarimeter, it may be well worth while to give some account of Fischer's fundamental researches upon the question, and in his own words. This is all the more desirable in that, to my knowledge, there is at present in the English language no concise account of how Fischer arrived at the simile of "lock and key," on what cogent evidences its truth was based. A search of the chemical literature of the matter under discussion will show that the main facts and conclusions are contained in three memoirs. Of these two will be found in one immense volume (Vol. 27) of the Reports of the German Chemical Society, and the third in the twenty-sixth volume of the *German Journal of Physiological Chemistry*. The first paper bears the date 1894 and treats of the behavior of different sugars toward pure yeasts. From p. 2036 the following citation is taken: "That microorganisms generally of two optically isomeric compounds prefer the one has long been known from the investigations of Pasteur and others; but with the yeasts and the sorts of sugars the matter lies somewhat differently, since here it is not alone a question of the antithesis of two optical antipodes, but out of a great number of geometrical forms some only satisfy the needs of the cell. It may be anticipated that the same observation will be found in other microorganisms, and, moreover, in other groups of organic substance, as perhaps very many chemical processes, which happen in the organism, are influenced by the geometry of the molecule. Under these circumstances it is worth while to seek after the reason of the phenomenon, and it lies on the surface that the explanation is first of all to be sought in the region of stereochemistry.

Among the agents which the living cell makes use of the different albuminous substances play the chief rôle. They are also optically active, and since they arise synthetically from the carbohydrates of plants, one may, indeed, conclude that the geometrical build of their molecule, in respect of asymmetry, is in essentials similar to that of the natural hexoses. Under this conclusion it is not difficult to understand that "*the yeast-cell with its asymmetrically formed agent can only attack, and force into fermentation, the sorts of sugars the geometry of which departs not too far from that of grape-sugar.*"[2]

The second memoir bears the date Oct. 29, 1894, and in it, under the title "The Influence of the Configuration upon the action of the Enzymes," the author, Prof. Emil Fischer, set up the simile of "lock and key" in the course of the following discussion (on pp. 2992-2993: "But the observations suffice already to approve (the principle) that with respect to the configuration of their objects of attack the enzymes are just as elective as the yeasts and other microorganisms. In this respect the analogy of both phenomena appears so complete that one may adopt the same reason for it, and with this I return to the hypothesis of Thierfelder and myself, already referred to. As is well known, *invertin* and *emulsin* have many resemblances to the proteid stuffs, and like these they possess an asymmetrically built-up molecule. Their restricted action upon the glucosides would permit of explanation by the supposition that only with similar geometrical build can that approach of the molecule take place which is requisite for the resolution of the chemical process. To use a simile, I should like to say that enzyme and glucoside must fit each other like lock and key in order to be able to exert a chemical action upon each other. This conception has certainly gained in probability and in value for stereochemical investigation since the phenomenon itself has been transferred from the biological to the purely chemical region. It forms an extension of the theory of asymmetry, but without being a direct consequence of it, for the conviction that the geometrical build of the molecule even in looking-glass image forms should exercise so great an influence upon the play of the chemical affinities could, in my opinion, be gained only by new observations founded on fact. The experience hitherto, that the salts composed of two asymmetrical compounds may differ in solubility and melting point, would certainly not suffice for it. That the fact established now for the complicated enzymes will also soon be found for the more simple asymmetrical agents I doubt as little, as the usefulness of enzymes for the ascertaining of the configuration of asymmetrical substances.

"The experience that the efficacy of the enzymes is restricted in so high a degree by the molecular geometry ought also to be of some use for physiological investigation. But still more important for this appears to me the proof that the difference previously accepted between the chemical agents in respect of molecular asymmetry does not exist. Thereby the analogy emphasized especially by Berzelius, Liebig, and others of 'living and lifeless ferments' is again set up in a not unessential point."[3]

The third memoir, by Prof. Emil Fischer, is a summary of the chief points of the two earlier ones, and in it (p. 81), under the heading "Theoretical Considerations," the author writes: "But the enzymes are quite especially valuable, as I first emphasized, as means of recognition of stereochemical differences, and with this I come back to the object, which I consider to be the most important result founded upon fact of my experiments. These furnish the unchallengeable proof that of two molecular looking-glass image forms the one is broken up by enzymes under the same conditions under which the other remains intact. For this there are two examples, the behavior of β—methyl—d—glucoside (*minus*) and of β—methyl—l—glucoside (*plus*) towards *emulsin*, and the behavior of α—methyl—d—glucoside (*plus*) and of α—methyl—l—glucoside (*minus*) towards the enzyme of yeast." On p. 82 "The ground of these phenomena lies in all probability in the asymmetrical build of the enzyme-molecule. For although these substances are not yet known in pure form, their similarity to the proteid stuffs is so great and their origin from these latter so probable, that undoubtedly they are themselves to be regarded as optically active and thus asymmetrical molecular structures. That has led to the hypothesis that between enzyme and its object of attack a similarity of molecular configuration must exist, if a reaction shall ensue. In order to make this thought intuitive, I have used the simile of lock and key."

Further, on p. 84, we read: "If one carry this over to the chemical processes of the higher developed organism, one arrives at the conception, that generally in the transformations, by which the proteid stuffs function in active masses, as undoubtedly that is the case in protoplasm, the configuration of the molecule frequently plays just as great a rôle as its structure. For this reason it is no longer astonishing that of two stereoisomeric substances the one reacts strongly upon our sense organs, such as taste and smell, while the other is quite indifferent, or produces a very much weakened reaction."[4]

In the foregoing citations there are two things to which I would direct special attention. The first is the repeated emphasis which the author lays upon the use and value of ferments as reagents for the determination of stereochemical differences, and the other the number of experiments, to wit, two, from the positive results of which the investigator maintained the establishment of his thesis, that "of two molecular looking-glass image forms the one is broken up by enzymes under the same conditions under which the other remains intact." It may suffice for an embryologist, who is not a stereochemist, to refer to the works and researches of this distinguished chemist, Emil Fischer, for the scientific reasons for the employment of enzymes or ferments as testing agents. As to the second point to be noted, Fischer's two experiments in proof of his thesis remind one of Pasteur's words, "If a doctrine be challenged, it happens seldom that its truth or falsehood cannot be established by some crucial test. Even a single experiment will often suffice either to refute or to consolidate the doctrine." In the following, as proving to the hilt the truth of my thesis, that dextrorotatory albumins occur, and, indeed, are widely represented in organic nature, several experiments and their positive results will be adduced. Here it may be added, that the cases described under the experiments are only a few, taken at random, merely because the organisms dealt with happened to be accessible readily, and that the number can be increased to any extent desired, on due cause being shown. He who may feel inclined to contradict the thesis, can by taking the trouble to repeat and extend my experiments, using the same Fairchild preparations, and as I have employed them, convince himself that his contemplated contradiction and refutation are futile.

A condition of all the experiments is that the microorganisms used should be in an active healthy state. It would, of course, be feasible to carry out the experiments to a successful issue with much smaller quantities of ferments, provided the experiments were made at a higher temperature, for instance, at blood-heat or between 38° and 40° Centigrade. It was, however, more convenient to make the experiments at the ordinary temperature of a room, and with such dilutions of the combined ferments, trypsin and amylopsin, as would enable their deadly disintegrating effects upon healthy living asexual microorganisms to be observed, as a rule, within the space of an hour or less. It is, be it remarked, quite unnecessary for any critic to point out that the finds recorded here could have been obtained by the use of trypsin alone without the aid of amylopsin. Of that fact I am aware. But the reason why amylopsin was also invoked in the experiments was because I thought, and shall always think, that the use of trypsin alone in the treatment of cancer, various tropical diseases, tuberculosis, etc., is a very dangerous proceeding, even in many cases a deadly one. I wished, therefore, to avoid doing anything to encourage a belief that in the practice of medicine trypsin without the aid of its complement, amylopsin, could be regarded as a safe and efficacious remedy.

The reagents and the conditions under which they were used were as follows: Since there are on the market preparations, even injections for use in medicine, of pancreatic ferments, trypsin and amylopsin, which are either excessively weak, or unreliable, or even quite inert, it was necessary to take for the experiments such injections of trypsin and amylopsin in combination as were strong, of known strength, standardized, and of a stable character. As W. Bätzner[5] has shown, the most powerful, reliable, and stable pancreatic injections are the ones manufactured by Messrs. Fairchild Bros. & Foster. To distinguish them from earlier and weaker injections made by the same firm, they will be referred to here as the Fairchild "1912" injections of trypsin and amylopsin. These injections are standardized in various ways, not in a single one, and thus it is possible to refer to the trypsin-injection, for example, as Bätzner does, as possessing a potency in dilution of 1 : 4000, tested by the Jochmann method, or by the Roberts methods as containing per cubic centimeter 1250 tryptic units, while the amlopsin-injection, which like the trypsin-injection is of maximum potency, possesses per cubic centimeter 500 units of amylolytic activity. The procedure was to mix the contents of an ampoule of each of the ferments, trypsin and amylopsin, and then to dilute the fluid with clean fresh rain-water, until the bulk of liquid equaled ten cubic centimeters. This stock-fluid, freshly prepared for each occasion, was further diluted as described under the account of the experiments. These latter were made in watch-glasses, containing the organisms and a given number of drops of clean fresh rain-water, to which at a given time a certain amount of the diluted ferments was added. On all occasions the temperature of the room was noted. The changes are quite easily observed under the microscope, and except with such forms as *Amœba* no higher power than a Zeiss AA is needed. In instances like *Amœba* it is more convenient to use a slide with a deep cell in it and to cover the preparation. Here also higher powers of the microscope are called for. The ampoules used contain somewhat more than one cubic centimeter, and in instances measured accurately the contents of the two ampoules before dilution totaled 2½ cubic centimeters. It should be added that these preparations are stated to be put up in a menstruum of 60 per cent. glycerin, and that they contain no antiseptic. No statement is made in the present writing that any other pancreatic preparations upon the market used in the like dilutions will give the same results. The finds are recorded for certain specified pancreatic preparations, and for these only, and used as described here. The necessity of this warning may be judged from the fact that even in the present year 1912 ampoules of injection, labeled "trypsin," have been offered for sale in Great Britain, and on assay it was found that all the "trypsin" connected with them in any way was contained in the label.

I. *Hydra fusca.* Temperature of room 19° C. Two individuals of the common fresh water "polype," *Hydra fusca*, in nine drops of clean fresh rain-water. 11.8 A.M. Added one drop of the 10 c.c. dilution of T. & A., and allowed this to diffuse through the water. Contraction of the animals in one minute or less. 11.14. Slight expansion, then contraction, tentacles knobbed. 11.15. One animal contracted, the other somewhat expanded, but anterior part of body strongly contracted. 11.18. Both much contracted. 11.19. In one a tentacle in disintegration. 11.20. Bodies pilose, as though stinging-cells had shot out. 11.31. Both much digested and tentacles becoming indistinguishable. 11.45. Greatly disintegrated, and cell-remains breaking away. 12.12. Shockingly disintegrated. Experiment ended.

II. *Hydra fusca*, and its unicellular parasite,

*Trichodina pediculus*. Same day and like solution. Three specimens of the common hydra, *Hydra fusca*, infested with parasitic *Trichodina*, in ten drops of clean fresh rain-water. 11.36. Added five drops of the 10 c.c. solution of T. & A. 11.38. Polypes contracted strongly. Two parasites moving on one. 11.39. Tentacles of polypes twisted at ends. 11.40. Parasites gyrating slowly on one polype. 11.41. Parasites dead and fallen off. 11.42. Parasites dissolving and their nature no longer recognizable. 11.50. Tentacles of polypes breaking up. Experiment ended.

III. *Vorticella*. In ten drops of clean fresh rain-water. 11.52. Added one drop of the 10 c.c. solution of T. & A. 11.54½. Vorticellids still moving. 11.55. Movements slight, more gyrations. 11.57. More vigorous short, not elongating, gyrations. 12 noon. Individuals fully extended. 12.2. Slow contractions, not complete, remaining half-way. 12.4. Individuals all dead, that is, in ten minutes. 12.10. No movements, clarifying and in disintegration. Experiment ended.

IV. Various flagellate "monads." Same day. Ten drops of water, containing many flagellate "monads." 12.40. Added one drop of the 10 c.c. dilution of T. & A. All movements cease at once. Experiment ended.

V. *Amœba* and Crustacean "*nauplii*." Same day. *Amœba* in a cell with five drops of water. 12.48. Added one drop of the 10 c.c. solution of T. & A. There were many *Amœbæ* in this fluid. 1.2. *Amœba* contracting. 1.6. Another *Amœba* apparently in disintegration, no movements. 1.12. No *Amœbæ* moving, where seen always contracted. At 9 P. M. on the same day, that is, eight hours later, two Crustacean "*nauplii*" were still swimming about in this mixture of water and ferments, and there were no traces of *Amœbæ*. A Desmid appeared to be unaltered.

VI. *Hydra fusca* and *Trichodina*. Room temperature 18° C. A stock-solution of 10 c.c. of T. & A. was made up (A solution). Of this 2 c.c. were nearly boiled to destroy the ferments, and as the result a turbid mixture and flocculent precipitate were obtained. This was filtered to obtain the menstruum of the ferment-solution (B solution). 10.13. Two watch-glasses, each containing two *Hydra fusca* in ten drops of clean fresh rain-water. 10.15. Added to watch-glass No. 1 one drop of the A solution, to No. 2 one drop of the B solution. Phenomena observed in No. 1. 10.17. The parasitic *Trichodinæ* have dropped off the *Hydra*. 10.20. One *Hydra* much contracted. 10.23. Both *Hydræ* much contracted and one pilose. 10.45. Both *Hydræ* much macerated. This portion of experiment ended. Phenomena observed in No. 2. 10.22 A. M. *Trichodina* still alive and moving on hosts. 10.45. *Hydra* still alive. 11.15. *Hydra* still alive, fluid removed, and fresh rain-water given. This portion of experiment ended. Comparison of the two portions shows clearly that the menstruum (glycerin) was not answerable for the deadly disintegrating effects observed.

VII. Various undetermined flagellate microorganisms. Same day. One drop of the stock-solution of T. & A. added to twenty drops of water. 11 A. M. Of this mixture one drop added to various flagellate microorganisms in a cell. 3.30 P. M. All the flagellate organisms dead, but various "swarm spores," which are vegetable, not animal, were still alive and active.

VIII. *Amœba*. *Amœba* in a cell with three drops of water. 12.2 P. M. One drop of the 10 c.c. solution of T. & A. added. 12.8. *Amœba* found under the microscope, and in movement 12.15. Appears to be contracted and not moving. 12.22. Slight movements. 12.27. Globular, no pseudopodia, gyrating slowly. 12.31. Still globular. 12.33. Slight alterations in shape, but no pseudopodia. 12.37. Floating freely in the water, and apparently dead. 12.38. Nucleus escapes. *Amœba* seems to be breaking to pieces. 3.15 P. M. Still much the same, but obviously the cytoplasm has all gone, and what is left is mainly made up of products of excretion, vacuoles, diatoms, etc.

IX. *Hydra fusca* and *Trichodina*. One *Hydra* in a cell with many parasitic *Trichodinæ*. 2.48. Added one drop of the 10 c.c. dilution of T. & A. to three drops of clean fresh rain-water. *Hydra* contracts at once, and to all appearance is killed instantaneously. The parasites also seem to be killed at once, and they begin quickly to disintegrate. 2.52. Tentacles of *Hydra* in disintegration. 3.16. *Hydra* is a shapeless mass, and the ectoderm is nearly all dissolved off. Experiment ended.

X. *Hydra fusca* and *Daphnia pulex*. Temperature 17° C. Two watch-glasses, the one containing two *Hydra* and a few *Daphnia*, the other five *Daphnia*. In each watch-glass there were twenty drops of clean fresh rain-water. 10.7. To each glass one drop of the 10 c.c. solution of T. & A. was added. 10.8½. The parasitic *Trichodinæ* have fallen off their hosts. 10.9. *Hydra* contracted. *Daphnia* active. 10.10. The parasitic *Trichodinæ* are dead and in disintegration. 10.15. *Hydra* in disintegration, *Daphnia* alive and active—there is absolutely no change apparent in the latter. 10.17. The parasitic *Trichodinæ* are shapeless and disintegrated. 10.18. Each parasitic *Trichodina* is becoming a mere patch of granules. 10.22. *Trichodina* quite disintegrated. 10.24. Some of the examples of *Trichodina* are represented merely by a collection of loose particles. 10.25. *Daphnia* active, heart pulsating. Ectodermal cells of *Hydra* largely macerated off. 10.37. *Hydra* now shapeless and largely disintegrated. Parasitic *Trichodinæ* dissolved. *Daphnia* active and apparently unchanged. Experiment closed. The specimens of *Daphnia* with their ferment-environment were now placed in a beaker, and 50 c.c. of fresh clean rain-water were added. Thirty hours later the *Daphnia* appeared to be all alive and active. Forty-eight hours after the close of the experiment some, at all events, of the *Daphnia* were alive and active. The weather had now become very warm.

XI. *Amœba*. An *Amœba* was placed in a cell along with three drops of clean fresh rain-water and one drop of the 10 c.c. solution of T. & A. This was done at 10.50 A. M. By 10.51 the *Amœba* had been found under the microscope. It was then rounded and its pseudopodia, such as they were, gave it the appearance of a horse-chestnut in its shell. 10.52. *Amœba* sending out pseudopodia. 11 A. M. There are still movements in its interior, and pseudopodia are still present. 11.7. Contraction of contractile vacuole. 11.10. Still moving by means of pseudopodia. 11.17. No pseudopodia. Curious linear wormlike movements. 11.21. Nuclear end contracted, while the other end is still moving in wormlike fashion. 11.28. Appearance tadpole-like. 11.29. Nuclear end a rounded mass with soap-bubble-like ectosarc. 11.30. Dumb-bell-shape with narrow bridge between the two ends. 11.30½. No movements in interior. 11.32. New

blunt process formed at side of larger portion. 11.34. Contents of new process now flowing back into main portion. 11.40. Another blunt process formed, quick movements in its interior. 11.45. Broken into two pieces, of these the one never stirs again, the other moves a little, then rounds up, and remains still. Both dead. Experiment ended.

XII. *Cordylophora lacustris, Carchesium polypinum,* and a Hydrachnid or water-mite. The material of this experiment consisted of two asexual generations, *Cordylophora,* a fresh and brackish water polype, a very fine collection of it, and upon it here and there colonies of the beautiful bell-animalcule, *Carchesium,* and a sexual generation, a water-mite or Hydrachnid. This latter was found in one of the watch-glasses used. In the following experiment the glasses were under observation from 11.15 A.M. until 5 P.M., and 24 hours later than this the glass containing the Hydrachnid was examined, and the water-mite was found to be still alive and active. It had thus lived in a fluid containing these pancreatic ferments for quite 30 hours, while its asexual companions had long ceased to exist, as will be seen. The reagents of the experiment were as follows: The usual 10 c.c. solution of T. & A. was made up. Of this 1 c.c. was further diluted with 4 c.c. of clean fresh rain-water. Four watch-glasses, labeled A, B, C, and D, were taken, and in each, in 20 drops of clean fresh rain-water, specimens of *Cordylophora* and *Carchesium* were placed. 11.15 A.M. Of the 5 c.c. of further diluted ferment-solution there were added to A 2 drops, to B 4 drops, to C 6 drops, and to D 8 drops. Describing, first of all the changes undergone by *Cordylophora*, 11.26 polypes in D contracted. 11.53. In polypes of C queer appearance of tentacles, thread-cells in dissolution. 12.10. Polypes in B contracted. 12.20. Polypes in C disintegrating. 12.35. These latter now much disintegrated. 1 P.M. In A, B, C, and D all the polypes of *Cordylophora* dead and in disintegration. It should be noted that D, although containing more of the ferment-solution than C, had also more polypes of *Cordylophora.* Possibly this, along with the coldness of the day, accounted for the slowness of the action. The Hydrachnid or water-mite in B was observed at the very start of the experiment endeavoring to avoid the attack of a polype of *Cordylophora,* and doing this only with difficulty. An hour later the polype made no attempt to attack the mite, which could now crawl over it with impunity. In this experiment some of the *Carchesium* were still living at 2 P.M., but in the three stronger solutions they were dead and digested by 5 P.M. The action upon *Carchesium* is given in a later experiment (No. XIV.)

XIII. *Planaria lactea,* a sexual generation of a planarian worm. Temperature 16.5° C. 11.28 A.M. A watch-glass, containing 50 drops of clean fresh rain-water and *Planaria,* to which 5 drops of the 10 c.c. dilution of T. & A. were added. All that was noted was a cessation of the tendency to crawl on the glass, and an attempt to get out of the fluid, possibly on account of the glycerin. After the animals had remained for three-quarters of an hour in the fluid, they were removed alive to fresh rain-water. Three hours later they were still alive, but they made no attempts to crawl up the side of the glass.

XIV. *Nais proboscidea* and *Melicerta ringens,* two sexual generations, and *Carchesium polypinum,* an asexual generation. Temperature 15° C. Two watch-glasses were taken, A containing 10 drops of clean fresh rain-water, and B 50 drops, and in each glass specimens of the three animals were placed. At 11.12½ A.M. to each glass one drop of the 10 c.c. dilution of T. & A. was added. By 12.25, some seventy minutes later, in both glasses numerous *Carchesium* were in disintegration, but in both here and there single "polypes" of *Carchesium* were alive and active. The action was not so marked in glass B as in glass A. 1.10 P.M. Practically all the *Carchesium* in A were in disintegration, in B, although all the *Carchesium* were dead, not all the "bells" were freed from their stalks, which were now contracted somewhat spirally. At 12.30 P.M. numerous minute "swarm-spores" (of plants) were observed swimming actively among the débris of the *Carchesium.* On the rotifer, *Melicerta,* no action could be noted. Of the worm, *Nais,* the ferments obviously attacked and dissolved the cuticle. Apparently, owing to this action, at 1.10 P.M. while the one individual was still alive, the other was nearly dead. At 6 P.M. both were dead and in disintegration.

XV. *Nais proboscidea* and *Carchesium polypinum.* The result in the preceding experiment, ending in the death of the *Nais,* led to the conclusion that solutions too strong had been employed in the experiment, and that either the glycerin-menstruum, or the ferment-solution itself, was responsible. Therefore, the experiment upon *Carchesium* and *Nais* was repeated as follows, with still greater dilutions. As will be seen, with this modification the experiment was a complete success. Temperature 16° C. The stock-solution used was the same as in the preceding experiment. Five watch-glasses (A, B, C, D, and E), containing respectively 10, 20, 30, 40, and 50 drops of clean fresh rain-water were taken. In each there were a number of "bells" of *Carchesium* and a worm, *Nais,* and to each, at 11 A.M., one drop of the 10 c.c. ferment-solution was added. Until 3 P.M. no effect upon any of the organisms was observed. At this time the fluids were removed, fresh rain-water given as before, but to each glass five drops of the ferment-solution were added. 5 P.M. In A, while the *Nais* was still alive and active, many of the *Carchesium* were dead and in disintegration. This was confirmed at 6 P.M. and 7 P.M. Next morning at 10 A.M. the experiment was seen to have been decisive. All the *Carchesium* "bells" were dead and in disintegration. All the worms, *Nais,* were alive and active. In the latter no traces of damage could be detected. In A to E the stalks alone represented the former "bells" of *Carchesium,* along with a débris of diatoms. Nine hours later the *Nais* were all still alive and to all appearance unhurt, and just living their ordinary life—*in the fluid containing ferments*—as though nothing had happened. A day later the experiment was stopped, but even the worm *Nais* in A, the glass containing most proportion of ferments, was alive and active. It had been in this solution in rain-water for more than two days.

XVI. *Actinosphærium eichhorni,* a Heliozoan or sun-animalcule. Temperature 16° C. One cubic centimeter of the usual 10 c.c. stock-solution of ferments, freshly prepared, was further diluted with four cubic centimeters of clean fresh rain-water. To *Actinosphærium,* an (asexual) fresh-water Heliozoan, in two drops of clean fresh rain-water, one drop of the further dilution of ferments was added at 10.58 A.M. In less than one minute the long delicate hairlike pseudopodia had their ends bent and somewhat thickened. 11 A.M. The hairlike pseudopodia are nearly all gone, and at

11.2 A.M. they have ceased to exist, and the animal is evidently in disintegration. 11.5 A.M. The animal is in dissolution, and the central capsule is escaping. 11.27 A.M. Shockingly disintegrated. 1.30 P.M. Contents of capsule scattered in fluid. At 11.18 A.M. it is noted that the addition of one drop of the further diluted ferment-solution to a drop of water containing *Actinosphærium* causes *immediate* shrinking and shriveling up of the fine delicate pseudopodia.

XVII. *Stentor caruleus.* Temperature 14° C. The usual stock-dilution of 10 c.c. of the ferments T. & A. was made up. Of this one cubic centimeter was diluted with four cubic centimeters of clean fresh rain-water. Five watch-glasses, each containing a number of *Stentor*, were labeled A, B, C, D, and E. In the order given these contained rain-water as follows: 18, 16, 14, 12, and 10 drops. The bulk of each was made up to 20 drops by additions of the further dilution of the ferments, or 2, 4, 6, 8, and 10 drops of the solution thus diluted. It was calculated out that at the most the glasses would contain the following numbers of tryptic units (Roberts): 3, 6, 9, 12, and 15. The experiment began at 11.30 A.M. 11.40 A.M. *Stentor* in E and D mostly at rest. In C some in movement. 11.41. In B some moving fairly quickly In A the specimens of *Stentor* are moving as though nothing had happened. 11.42. The animals in D and E appear to be in disintegration. The cilia are not obvious. 11.45. The animals in A and B are still in movement. Most of those in D and E are dead. 11.49. In E disintegration is going on rapidly, but in D a water flea, *Daphnia pulex*, is actively moving. This was seen later on, alive and active, 27 minutes after the experiment started. Afterwards it was lost sight of. The animals of *Stentor* in the same watch-glass were killed in ten minutes or less. 11.54. In B many *Stentor* in disintegration, but some still in movement. *Stentor* in C in disintegration, no ciliary motion. 12 noon. In A and B still some movement. 12.3. Movements in B appear to be ceasing, but not in A. 12.4 P.M. Animals in E greatly disintegrated, many algæ freed. 12.18. Heaps of freed algæ in D and E. 12.20. In A still some ciliation, but in many the cilia are working feebly. 12.25. The animals in B are now much disintegrated. 12.32. Slow ciliation in A and all the animals are crowded together. 2 P.M. In A still the same condition of affairs, but only one animal moving cilia. At 7 P.M., when the experiment was closed, there were still some animals of *Stentor* alive in A, but in the four remaining watch-glasses all the specimens of *Stentor* were dead and in disintegration.

My acknowledgments are due to Messrs. Fairchild Bros. & Foster for the two boxes of ampoules of injections of trypsin and of amylopsin used in the experiments. All the organisms employed in the foregoing experiments were supplied by Mr. T. Bolton, Edgbaston, Birmingham. The number of animals experimented upon would have been much greater, had all the organisms he sent survived the transit in summer. Of course, it was only possible to use organisms which were in a healthy active condition. The seventeen experiments hitherto carried out have established the truth of the thesis, that living *asexual* generations of animals are attacked, killed, and their albumins pulled down by solutions of the pancreatic ferments, trypsin and amylopsin (Fairchild), in which *sexual* generations of animals go on living. The following *asexual* generations of animals exhibited the deadly pulling-down action of pancreatic ferments, and thus revealed the dextrorotatory nature of their albumins: *Hydra, Cordylophora, Trichodina, Vorticella, Carchesium, Amœba, Actinosphærium,* and *Stentor*, eight in all.* The beneficent action of trypsin and amylopsin upon *sexual* generations of animals is to me so self-evident, that it has appeared to be almost a work of supererogation to make experiments in this direction. However, for the benefit of the sceptic, the following *sexual* generations of animals continued to live in solutions of these ferments, which proved to have deadly disintegrating effects upon the afore-mentioned *asexual* generations of animals: *Daphnia*, a Hydrachnid or water-mite, crustacean "*nauplii*,"† *Planaria, Nais*, and *Melicerta*, six in all.‡ Zoologically, the experiment (No. X) with *Hydra fusca* and *Daphnia pulex* has special interest. *Daphnia pulex* is a common prey of *Hydra*. It is impossible to keep *Daphnia* living in an aquarium containing *Hydra*. Even the individuals of *Daphnia*, which it does not catch and devour, *Hydra* quickly kills with its stinging cells. More than once I had noted that if a number of the two forms, *Hydra* and *Daphnia*, were associated together in a small aquarium, in the space of twenty-four hours there would be no living Daphnids in the vessel. In experiment X the tables were turned, and in the presence of pancreatic ferments, trypsin and amylopsin, it was *Hydra* which was killed and pulled to pieces, whilst the Daphnids survived. This is possibly the first occasion on which in close association together in nature *Hydra* was impotent to kill its prey, *Daphnia pulex*. Without doubt it is by means of a ferment that *Hydra* kills *Daphnia*. This fact answers by anticipation an objection, which may be raised, that *Daphnia* is protected from the action of trypsin and amylopsin by its chitinous covering. This latter is no protection whatever against the antithesis of trypsin, the ferment produced by the stinging cells of *Hydra*. Indeed, it is not too much to say, that the result of the experiment with *Hydra* and *Daphnia* alone would suffice to establish the existence of two categories of albumins *at least*, laevorotatory and dextrorotatory respectively.

With Emil Fischer I maintain, that "the enzymes are quite especially valuable—as means of recognition of stereochemical differences," and that "of two molecular looking-glass image forms"—in the present case living albumins of animals—"the one is broken up by enzymes under the same conditions under which the other remains intact." His examples were the glucosides; mine the living albumins of certain animal organisms. Two examples were held by him to suffice to establish his theses; for mine more than two are adduced, and, moreover, if shown to be desirable, the number can be increased very considerably. For, in fact, the organisms employed in the actual experiments were but samples, chosen in haphazard fashion, of a large series of microorganisms or developing organisms, all of which—and their name is legion—

**Eight*, without mentioning the "various undetermined flagellate microorganisms" of experiments Nos. IV. and VII.

†Crustacean "*nauplii*" are not "laryæ" or asevual generations. For many years, with the late Geheimrat Prof. Anton Dohrn, I have regarded them as being immature *sexual* generations of Crustacea. Experiment No. V. proved the truth of this.

‡*Six*, without including the "various undetermined 'swarm-spores' of plants" of experiments Nos. VII. and XIV.

would, if identified embryologically as *asexual generations,* exhibit the same phenomena of death and disintegration in the presence of active pancreatic ferments. The *asexual* nature of the organisms experimented upon as such had been decided previously, and upon other than chemical grounds, that is, from developmental and biological data. *Not a single one of the experiments failed to confirm the biological conclusion.*

On the present occasion it is not my intention to examine the bearings of the facts and conclusions upon ordinary zoological problems, for to do so would carry the discussion too far. Possibly, it may now be recognizable, that the heretical preaching of antithetic alternation of generations in the wilderness in past and recent years had its fount in scientific truth. Possibly it may become evident that in some groups of animals, such as sponges, ctenophores, sea-anemones, and corals, as well as in *Hydra* and *Cordylophora,* the sexual generation is not represented except by the forerunners of the sexual products, eggs and sperms. It is, however, the duty of the scientific investigator to draw the conclusions from his observations and experiments, and this I shall now proceed to do in certain interesting and obvious directions. (1) The experiments confirm the truth of the biological and embryological conclusions, that the cycle of animal life, even that of such microorganisms as protozoa,* is an antithetic alternation of asexual and sexual generations, of such a nature that the albumins of the asexual generation (dextrorotatory) are the stereochemical antitheses of those of the other or sexual generation (levorotatory). As I have pointed out elsewhere,[6] the conditions are reversed in plants.† Here it is the *asexual* generation, which possesses levorotatory albumins and dextro-sugars. (2) All such asexual generations of animals, including all malignant tumors, are killed and pulled down in the living state by the action of active solutions of the pancreatic ferments, trypsin and amylopsin. (3) Since "Science is prevision"—to quote the words of Pasteur—and because of certain facts known to me, certain other conclusions may be drawn. As long ago as 1907 (MEDICAL RECORD, February 2), I stated that the pancreatic ferments, trypsin and amylopsin, were the natural means to be adopted for the cure of tuberculosis. This was confirmed in a single case of tuberculosis of the bowel by Dr. Margaret A. Cleaves,[7] and in various forms of surgical tuberculosis by Dr. W. Bätzner.[8] Since the latter has shown that solutions of trypsin do not inhibit the growth of cultures of tubercle bacilli, the favorable result in tuberculosis is seen to be due, as I had long foreseen and foretold, to the use made by the leucocytes of the ferments, trypsin and amylopsin, as weapons of attack. While Dr. Bätzner has observed that three injections of active pancreatic ferments suffice to heal a tubercular abscess, in India Captain F. W. Lambelle, R.A.M.C., using the like Fairchild injections, has found, in a bad case of amœbic dysentery with abscesses in lungs and liver, that the like number of injections (three) result in the clearing-away of all the *Amœbæ,* and the healing of the abscess. From these facts, from the experiments, and, more especially, from the whole course and tenor of my researches during the past twenty-four years, the following additional conclusions find their scientific warrant.

Since the organisms underlying the chief tropical diseases, such as malignant malaria, trypanosomiasis, sleeping sickness, yellow fever, relapsing fever, kala-azar, etc., are, so far as these attack human beings, asexual generations, it follows that the natural means of destroying the organisms of such tropical diseases and of curing the patients, are the use *in combination* of the powerful pancreatic ferments, trypsin and amylopsin, as represented by the "1912" Fairchild injections.

A further step may, indeed, be taken. Since such tropical disorders due to parasitic microorganisms of an asexual nature and tuberculosis are amenable, since the organisms of such nourish themselves, increase, and multiply at the expense of the living human organism with its characteristic levorotatory albumins, and—last not least—because the greater exceeds the less, all infectious diseases, due to parasitic organisms of an asexual nature, all which possess dextrorotatory albumins, such as pyemia, smallpox, scarlet fever, pneumonia, leprosy, Asiatic cholera, and others of a similar nature, must be, and are, curable naturally by the all-powerful ferments, trypsin and amylopsin, in combination.

In order to grasp the bearings of the facts of the present writing upon problems concerning diseases, in which unicellular organisms, bacilli, etc., play a leading part, it is needful to know something of the biology of digestion and of the relationships of extra- and intracellular ferments. In the unicellular animals or protozoa, which, so far as disease is concerned, manifest themselves as asexual generations, in the asexual generations of the higher animals, in the mammalian trophoblast, and in its pathological representative any malignant tumor or cancer, digestion is intracellular, and by means of ferments acting within and upon the surface of the cell. In the sexual generations, man for example, a differentiation has taken place, of such a nature that the production of the characteristic digestive ferments has been assigned to a certain portion of the alimentary canal, and these ferments act in an extracellular fashion. Not only have most of the body-cells lost the power, if they ever at any past time possessed it, of producing trypsin and amylopsin, but a further division of labor has taken place in the original single digestive gland, its ferment-producing properties have been localized in a part of the original structure, and this part we term the pancreas-gland, while its other functions have been reserved for the portion of it which we term the liver. I am not concerned here with the question of the production of ferments by and in the vertebrate liver. But any tryptic and amylolytic ferments contained in the liver are almost certainly formed in the pancreas-gland. The aspect of the matter concerning us here is this: owing to such

**Antithetic Alternation of Generations in Protozoa.* In "The Annals of Botany," V. 9, 1895, pp. 446-447 and 468, in the course of a paper dealing with "The Phenomena of Reproduction in Animals and Plants," it will be seen that I recognized, and postulated, the occurrence of antithetic alternation in the life-cycles of the unicellular organisms. In not the least brilliant of his memoirs this was first demonstrated, in the case of *Coccidium schubergi,* by that zoological genius, the late Fritz Schaudinn (vide Schaudinn, Fritz—Untersuchungen über den Generationswechsel bei Coccidien, in: Zool. Jahrb., Abt. f. Anat., V. 13, 1900, p. 197).

†Therefore, in experiments Nos. VII and XIV, unlike the *asexual* generations of animals, such as the "various undetermined flagellate microorganisms" of experiments Nos. IV and VII, the "various undetermined 'swarm-spores' of plants" were not killed and disintegrated, but continued to live, in the presence of active pancreatic ferments, trypsin, and amylopsin. These "swarm-spores" probably belonged to the Confervoid division of the green Algæ, such as *Ulothrix.*

division of labor the body-cells, in giving up any earlier power possessed by them of forming trypsin and amylopsin, are placed more or less at the mercy of organisms, such as some protozoa, bacilli, etc., which by their ravages induce disease. The ferments, produced by these, being the stereochemical antitheses of those of the normal human body, when given the chance, are in this way enabled to attack the body-cells, which have as their sole immediate protectors the cells termed leucocytes. The leucocytes form the first and only real line of defense against the attacks of such microorganisms. It was Metchnikoff[9] who first insisted on these protective powers of the leucocytes. Notoriously, in many forms of parasitic disease, produced by a microorganism, a bacillus, or asexual generation, such as cancer, the leucocytes are quite unable to cope with the foe. But increasing evidences go to demonstrate that, if provided with pancreatic ferments as additional weapons of attack, the leucocytes can become highly efficient agents against such onslaughts. Moreover, it must not be forgotten that the ferments are bodies, which do not, to any extent at all events, diffuse or pass through the walls of the alimentary canal and circulate in the blood.

From the point of view of practice it may suffice to note the following: The introduction of pancreatic ferments, such as the new Fairchild preparations, into the blood is, as others have demonstrated, a perfectly harmless procedure. In such afflictions as sleeping sickness, malignant malaria, tuberculosis, etc., the organisms concerned are enabled to succeed in their attacks, because of the absence of the naturally protecting ferments, trypsin and amylopsin, but, given these circulating in the blood at the point of attack, the body—often, as in tuberculosis, aided by the leucocytes—is placed in a position not merely to resist the attack, but to defeat it utterly.

It is a long time since 1860, and the fundamental discoveries of Pasteur,[10] published in that year, discoveries relating to what he termed "enantiomorphism," have had a curious subsequent history. While, on the one hand, it would, perhaps, not be too much to say, that their influence upon the progress of chemistry had been unbounded, their import in physiology and allied sciences, dealing with the problems of living things, such as embryology, zoology, and botany, would not appear to have been recognized hitherto. It is scarcely credible now, that so long ago as 1860 Pasteur said, "I have, in fact, set up a theory of molecular asymmetry, one of the most important and wholly surprising chapters of science, which opens up a new, distant, but definite, horizon for physiology."[10] While admiration of Pasteur's "prevision"—to use his own word—must be expressed, one cannot refrain from astonishment, that more than fifty years, at all events, should have elapsed without a fulfilment of his prophecy.

Applying now his discoveries, the later ones of Emil Fischer, and the facts here recorded, to the problems of living things, clearly there is a general principle of far-reaching import behind the whole. This is, that the microorganisms, bacilli, etc., of disease are, of necessity, composed of compounds which are stereochemical antitheses of those making up the normal human body, and that, when compared similarly with the pancreatic ferments, the like is true of the ferments, by means of which they effect their ends. Only by means of such antithetic or opposite characters of compounds and of ferments produced by them could such disease-inducing organisms bring about their ravages.

It follows naturally, irresistibly, and incontrovertibly, that the rational ways and means of meeting and coping with such ravages are the employment of the ferments produced by the organisms, to wit, mankind, who are the victims, and of these by far the most potent are the pancreatic enzymes, trypsin and amylopsin. Indeed, the final outcome of the present adventure is to demonstrate once again beyond effective contradiction, that the pancreatic ferments, trypsin and amylopsin, *in combination* are the most powerful agents in the whole range of organic nature.

By the researches of earlier years antithetic alternation of generations as *the law* of the developmental cycle of animal life had been placed upon a firm basis of observation. With the facts now recorded a beginning has been made in supplying this law of antithetic alternation of generations with a foundation in stereochemistry.

Upon what foundation do the current orthodox conceptions of the nature of the above-mentioned diseases rest? Certainly as little upon a chemical as upon a biological basis. The line of work I took up four and twenty years ago may have been —may even now be—"heretical," regarded in the light of common beliefs then and now current. But the error was, and is, in the current beliefs and theories, and *not* in the "true theories" or general principles, to which patient research during these years has led me irresistibly. For, as Pasteur well said, "The characteristic of erroneous theories is, that they are never able to present new facts; and every time a fact of this nature is discovered, in order to take it into account, they are obliged to graft a new hypothesis upon the old ones. The characteristic of true theories, on the contrary, is of being the expression of the facts themselves, of being commanded and dominated by them, of being able to foresee new facts certainly, because these by their nature are linked up with the former—in a word, the characteristic of these theories is fecundity."[11]

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## THE ACTION AND ADMINISTRATION OF CROTALIN IN PULMONARY CONSUMPTION AND IN EPILEPSY.

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That crotalin is a powerful two-edged instrument, and that its practical worth, like that of any other therapeutic agent, depends altogether on a proper knowledge of its active mechanism and on a proper method of administration, are obvious propositions.

The action of crotalin as a whole is fairly well understood, and very little good will come out of a discussion of its active principles until more is known of the constitutent parts of bodies belonging to this class of agents. All that is known concerning the chemical composition of snake venoms at the present time, according to Dr. Armstrong, is that they have the following percentage composition: Carbon, 45.76; nitrogen, 14.30; hydrogen, 6.60, and sulphur, 2.50; yet this throws very little or no light on the nature and constitution of the protein bodies to which venoms are supposed to owe their physiological properties.

Pharmacologically, crotalin stands in close relation to the cyanide group. In fact, after the writer had acquired an experimental knowledge of the action of snake venoms, one of the incentives which led him to investigate the clinical property of this drug was the close analogy of its action to that of this group of agents, and since March, 1908, he has been engaged in studying its application to the diseases with which this article deals. In its rapacious activity, its powerful affinity for the important nerve centers of respiration and muscular coordination, its power to disorganize the blood, and in its mode of producing death through respiratory paralysis and convulsion, it presents an almost exact, although less active, counterpart of the lethal effects of hydrocyanic acid.

Most all experimental observers agree that in dogs, rabbits, cats, fowls, and frogs, snake venom causes death through convulsions and paralysis of respiration; that, as a rule, the respiratory center is destroyed before the convulsive center, provided the venom is administered subcutaneously; that the reverse is true when the venom is inflicted by a bite of the animal; that cobra venom destroys the respiratory functions very quickly; that daboia venom is more actively poisonous than cobra venom; that rattlesnake venom is far less poisonous than either cobra or daboia venom; that bloody diarrhea and other bloody discharges are frequent concomitants in animals that are bitten by daboia snakes, but are not often present when daboia poison is given subcutaneously, and are practically absent in cobra or crotalin poisoning, except late in the process of intoxication, and that the activity of cobra poison is impaired when heated, and destroyed by being heated beyond the boiling point, and crotalin venom becomes inert when heated to 80° and 85° C.

One of the most distinguished observers and experimenters on snake venom, Dr. A. J. Wall,[1] states that the action of cobra venom, although more energetic, bears an analogy to that of crotalin, or rattlesnake venom, viz., a feeling of intoxication, drooping of eyelids, loss of power in legs and arms, staggering gait, inability to walk or stand without support, profuse salivation, paralysis of tongue and larynx, embarrassed breathing, inability to swallow, general paralysis, twitching in limbs, lessening of respiration rate, and finally arrest of breathing, after which the heart ceases to beat.

This author draws a very vivid and very significant comparison between the symptoms of cobra poisoning and those of the disease known as glossopharyngeal paralysis—associating both processes with paralysis of the vagus root, of the spinal accessory, and of the hypoglossal nerve, in which he uses the following language: "In both diseases the respiration becomes feebler and feebler, and the victim at last dies suffocated. In other words, the paralyzing poison in one case and the lesion in the other have invaded the respiratory nucleus so near to the center which they have already destroyed, and have thus rendered the respiratory act difficult and at last impossible; and, though no doubt other parts of the nervous system suffer, it is evident that cobra poison has a specal affinity for acting on the respiratory center and those other ganglia allied to it in the medulla oblongata which are in connection with the vagus, the spinal accessory and the hypoglossal nerves, and that it is directly to this destructive action that we have to attribute death in most cases of cobra poisoning."

In regard to the therapeutic efficacy of crotalin in pulmonary diseases, it may be said that, in the writer's judgment, this lies primarily in its undoubted power of influencing the respiratory center and its outgoing pulmonary nerve fibers; and, secondarily, by its general action on the nervous system, in minimum and medium doses. In fact, it is a therapeutic principle which knows no variance, that when a drug force manifests a selective pathological action on any tract or tissue of the animal body in maximum doses it will exercise a stimulating and supporting influence on the same tract or tissue in minimum and medium doses.

*Administration of Crotalin in Pulmonary Consumption.*—When crotalin was first administered hypodermically by the writer, it was quite a natural expectation that its primary mode of introducton, although this demonstrated its positive efficacy as a clinical agent, was open to improvement, and that time and concentrated study were requisite to bring about its very best clinical value. Indeed, it was with the hope of stimulating further research in this direction that the writer's preliminary observations were first published on this subject in 1908,[2] and there is reason for believing that this hope was not altogether misplaced.

The Arm Method.—The back of the arm was the method which was first selected for the hypodermic injection of crotalin, although subsequent experience has shown that there is no special reason why other points are not equally suitable. This

site was chosen for the reason that no attempt had ever been made to throw this powerful poison directly into the human circulation by means of the hypodermic needle, except by the fangs of the snake, and it was, therefore, deemed wise to remain as far as possible from the central organs of the body in case of any unlooked for emergency.

The hypodermic dose of crotalin ranges from gr. 1/200 to gr. 1/50, or more. It is advisable to begin with gr. 1/200 or even a smaller amount, and gradually increase to gr. 1/50, or more. It will be found that a partial immunity is established in time, and that a larger dose is required to obtain the same effect that a small dose produced at the outset. Chronic cases, especially of phthisis, bear larger doses in the beginning of treatment than diseases of a more acute character.

The following formula has been employed in making a suitable solution for hypodermic purposes; although hypodermic tablets of the same strength are also manufactured:

℞ Crotalini, 1 gr.
Glycerini 100 ♏,
Aqua destil. 400 ♏.

M. 5 minims of this solution represent gr. 1/100, and 2½ minims represent gr. 1/200 of crotalin.

The immediate local effect of a crotalin injection consists of a burning, stinging pain at the seat of injection, often radiating to the fingers or to the elbow or shoulder. The pain is not severe, and is of short duration. Considerable edematous swelling may occasionally occur around the injected spot, but neither the pain nor the swelling becomes very marked. If these symptoms should become excessive, the constant application of a saturated solution of magnesium sulphate will soon bring relief.

*The Neck Method.*—The neck method was resorted to, chiefly for the purpose of influencing the nerve supply of the larynx and lungs in cases of laryngeal tuberculosis, by introducing the crotalin directly over the course of the vagi. This deduction was made from the finding that in other affections, like lumbago and sciatica, for example, crotalin brings relief quicker when it is injected over the seat of pain in the back, or over the course of the nerves in the legs, than when given in the arm.

In this method the needle puncture is made immediately over or slightly behind the pulsating carotid artery, in the region of the neck, in a line between near the angle of the lower jaw and the clavicle, and nearer the latter than the former point. In order to avoid puncturing the carotid artery or its neighboring jugular vein, it is important to pinch up the skin between the thumb and the forefinger of the left hand and introduce the needle just under the elevated skin. The size of the dose is smaller than in case of the arm injection, varying from gr. 1/400 to gr. 1/100, given once or twice a week, and on alternate sides of the neck.

*The Intravenous Method.*—This method has been tested in a large number of cases, but has nothing to recommend it over the arm and neck methods. In fact, it has decided drawbacks, inasmuch as in the case of the intravenous infusion of other substances, in which the writer has had a large experience, it frequently calls forth a violent reaction, consisting of rigors, fever, and sweats, from which the patients rally with difficulty, and from which they suffer permanent impairment.

*The Intrathoracic Method.*—All previous experience with the arm and neck methods showed conclusively that crotalin possessed the marked power of favorably modifying the course and condition of pulmonary consumption, not only in its early, but also in its later stages. It was, therefore, believed that its direct injection through the thoracic walls into lung cavities might enlarge the scope of its usefulness.

Notwithstanding these apparent advantages, it became an entirely different undertaking when it was contemplated to throw this powerful agent into a highly vascular and sensitive organ like the lungs, and it must be confessed that the first venture of this kind was attended by considerable fear and anxiety. This sense of danger was partly mitigated at least by the assurance that in a lung cavity the drug would come in contact with a surface that is more or less indurated, bathed in, and accustomed to the influence of acrid exudative material, and is possessed with less vascular activity than normal lung structure. Experience determined, however, that so far as the injection of cavities was concerned, this fear was practically groundless, for beyond the primary temporary local discomfort which it causes in the chest, no constitutional symptoms of any kind developed. Indeed, when one recalls the pain and disturbance in the chest which is occasioned by the intrapulmonary injection of iodine, potassium permanganate, mercury, carbolic acid, protargol, etc., it seems remarkable that a substance like crotalin may be thrown into an extremely sensitive tissue like the lungs without calling forth more of a reaction than a slight temporary cough, or a feeling of soreness, presently to be followed by a sedative action on the essential symptoms of the disease, is good evidence that it is not markedly offensive to the body.

The dose of crotalin for intrathoracic injections varies from gr. 1/800 to gr. 1/200, and for the first few doses it is advisable to use the smaller amount.

Before the injection is made, it is very important to outline the cavity and to introduce the needle directly into this area and empty its contents there. Previous to the puncture the patient must be instructed to take a deep breath and to hold the lung fully inflated until the injection is completed, and for a short time after the needle is withdrawn to take very short and superficial breaths. To facilitate a safe injection, press the left index finger firmly into the middle of the selected intercostal space and make the puncture of the needle gently, though quickly, at the middle point of the finger tip. If this advice is carefully followed there is no danger of striking the edge of a rib or a blood vessel. The dimensions of the heart must be carefully mapped out in order to avoid puncturing this organ. In connection with this, it is well to remember that in left-sided lung cavities of some duration the heart is sometimes forced or drawn toward the left.

The common hypodermic syringe, with an inch and a half or two-inch needle, of somewhat larger caliber than the ordinary hypodermic needle, answers every practical purpose, except when it is desired to enter a deep cavity, or a bronchiectasy. The injections are to be repeated every five or six days.

*The Nebulization Method.*—The easiest and perhaps the most effective way of administering crotalin in chest affections is by its direct introduction into the lungs through the respiratory passages in

the form of vapor. Over a year ago the writer began to use this method, but in doses which proved to be somewhat too small, although they were not wholly devoid of good effects. Subsequent experience demonstrated, however, that an increased dose of crotalin given in this manner produced much better results.

The preparation of a solution of crotalin for vaporization requires some care and patience. When rubbed up thoroughly, as it must be, with liquid petrolatum, it forms a tolerably fair solution, or suspension, in the proportion of one to one-hundredth part, *i.e.* 1 minim of oil will take up 1/100 grain of crotalin. This solution is vaporized by a De Vilbiss nebulizer, either by means of compressed air coming from a compressed air tank, which is by far preferable, or from the compressed bulb of a hand-nebulizer, and introduced through the nasal passages. The vapor is inhaled to the full respiratory capacity during each inspiration, and is retained in the lungs as long as possible and then exhaled. After a short interval another inhalation is taken, and this is repeated until from fifteen to twenty or more inhalations are taken at each sitting. This procedure is repeated every three or four hours during the day, and it is believed that if the vapor is economically administered in this way, from 1/100 to 1/50 of a grain of crotalin is absorbed by the respiratory passage in twenty-four hours. In the beginning it is advisable to allow the patient to take only six or eight deep inhalations at one sitting, until he is fully accustomed to the operation. Whether the above given dose is large enough for all practical purposes, or whether a larger one is required to bring out the best effects of crotalin when given according to this method, remains to be fully developed by future experience.

The formula which is employed in preparing the solution is as follows, and this should be made fresh every month or six weeks:

℞ Crotalini 4 gr.,
Liquid. petrolati 400 minims.
M. Rub well together in mortar. Sig. Use as an inhalant. Keep in cool place, and shake well before using.

It may be said that the immediate effects of the inhalation of crotalin vapor are good. Improvement follows in the cough, expectoration, blood-spitting, fever, chills, night-sweats, pain in the chest, hoarseness, weakness of voice, laryngeal pain, difficult swallowing, appetite, well-being, and general strength, and at the same time is a marked betterment in the physical signs.[3]

Comparison of Different Methods.—There can be no question in the mind of anyone who has had practical experience with the administration of crotalin in the treatment of respiratory diseases that, whether given under the skin with the needle, into lung cavities through the chest walls, intravenously, or by inhalation of its vapor, it is uniformly followed by favorable results in the great majority of cases. Experience has shown, however, that there is a difference in their adaptability and usefulness. The arm injection was the first method that was employed, but it is sometimes objected to as being painful and as exciting discomfort and swelling of the arm, but none of these are serious drawbacks, and are generally regarded as trivial incidents. The intravenous method gives no superior results to the arm injections, besides being liable to a serious and detrimental reaction. The intrathoracic method is only applicable in cavity cases and is a delicate operation to perform, but is almost invariably followed by good results.

It is probable that a combination of the inhalation and the arm injection methods produce the most efficient practical results in the majority of cases, so far as the writer's experience extends. Whether this will be superseded by a more serviceable method of administration remains to be decided by future clinical investigation.

One thing may be stated with a measurable degree of certainty concerning the preferable mode of applying crotalin in consumption, viz., that that method is the best which brings it in direct contact with the foci of disease. It is obvious, therefore, that the inhalation and the arm injection methods make a very useful combination —the former for the local effect, and the latter for a general effect on the nervous system.

*Crotalin in Epilepsy.*—That crotalin is an efficient factor in the alleviation of epilepsy seems to have been shown by the work of others, as well as by that of the writer.

Before applying the principle of crotalin action to epilepsy, as it is viewed by the writer, it is proper to add a few thoughts on the essenial nature of this disease.

Whatever its cause may be, it must be admitted that epilepsy is fundamentally a nervous affection, and that one of its most prominent and active manifestations consists in a disturbance of the regulating center of muscular motion, resulting thereby in an irregular and unbridled contraction of the general voluntary muscular system. Whether the original impulse of this originates in the cortex or in the periphery matters not, so long as it is absolutely true that no genuine and complete seizure can occur without implicating the muscular coordinating center in the oblongata, which is also known as the convulsive center. In other words, while irritation of the brain cortex, or of an extremity, may initiate a seizure, the course pursued by an impulse so generated eventually involves the controlling center of muscular motion in all fully developed attacks. This center being in close proximity to those which control respiration, circulation, swallowing, vomiting, etc., these also become implicated, and as a result we have embarrassed and stertorous breathing, accelerated heart action, salivation, vomiting, etc., symptoms which we know accompany the convulsive process of epilepsy.

Moreover, epilepsy is devoid of any characteristic organic change in the body, and, therefore, belongs to those diseases which are called functional. There are more things than visible marks or scratches on the cadaver that are to be taken into consideration when we come to estimate the true nature of disease processes. Functional diseases like palpitation and irregular heart action, as well as tachycardia and bradycardia, are affections of no mean order, but are just as real as those which bear the imprint of organic change.

Where is the practitioner who has not witnessed the abatement of irregular cardiac action under the benign influence of strychnine, when this agent was given for effect? In all probability this did not happen when it was administered in 1/100 or 1/60 grain doses, but in the largest possible tolerated doses, the size of which depended on individual susceptibility to the drug, which may be safely conjectured as being somewhere between 1/20 and 1/40 of a grain given three times a day.

Disclaiming any effort to place epilepsy and irregular cardiac action on the same pedestal, so far as their severity and gravity are concerned, it may still be maintained that it is not beyond the range of possibility for crotalin, which has a special elective action on the voluntary muscular coordinating center, to stimulate and to enhance the functional power of this center sufficiently to antagonize the wild and riotous contraction of the general muscular system, in a manner similar to that which is exercised by strychnine on the irregular action of the heart. In both instances the unbridled contraction of the heart in palpitation and the licentious distortion of the muscular system in epilepsy are, in essence, mere manifestations of a paralyzed control of nerve centers which preside over the movements of these respective organs.

It is fairly well ascertained that strychnine possesses no direct influence on muscular contractility, but that it has the power of elevating the function of the cardiac center to a point where it is enabled to resume the power of originating and of sending out impulses capable of exciting a regularity of cardiac contraction, which it is not able to do in the absence of strychnine.

Method of Administration.—In order to secure the full beneficial effects of crotalin, it will be found that the mode of giving it is of considerable importance. Its failure has been demonstrated in several cases in which too large doses had been given in the early stage of the treatment. Great caution is necessary, therefore, at the very outset, that minimum doses are administered, and if this is not borne in mind it will frequently be followed by discouragement. A minimum quantity, varying according to age, from 1/200 to 1/500 of a grain should be given at the beginning of treatment, and this should be slowly and gradually increased until a slight degree of immunity is established. For example, in a boy of fourteen or fifteen years old, begin with 1/200 grain or less in the forearm every third or fourth day, for a period of about two or three weeks, then give 1/150 grain for a similar length of time, and gradually work your way up in this manner until you reach 1/100 grain. After this point is reached, or even before, give the latter quantity in equally divided doses in each forearm. The 1/100-grain dose is given for a month or two, every six or seven days, after which give 1/150 or 1/100 grain each forearm once a week. This dose may be increased to 1/75 or 1/50 grain in each forearm, once a week, but these doses are not frequently necessary, except in the case of patients who become readily immune to the drug. If at any time during the treatment there should be shown a marked degree of immunity to it by the patient, *i.e.* if very little local reaction, or hardly any, should occur at the seat of injection, the dose should be increased at once. After giving it for a long while, say a year and a half or two years once a week or ten days, it is advisable to reduce the dose to 1/100 or 1/200 grain.

The crotalin solution to be used for hypodermic injection in these cases, and which should be made fresh every four or five weeks, is prepared in accordance with the formula given above, and the back of the arm has been selected for the site of injection, although there is no reason why any other spot should not do equally well.

No special antiseptic precaution is necessary to ward off any untoward effects. For some reason (probably on account of its animal source) the human system does not seem to be particularly irritated by or to take unkindly to this poison. For in more than six thousand injections the writer has failed to meet a single serious complication of any kind.

In regard to the length of time which is required before crotalin is able to make a well-defined impression on the seizures in any particular case, it may be said that this varies in different individuals. Sometimes the attacks will be interrupted after two or three doses have been administered, while in other cases, especially in those in which the minor attacks predominate most largely, it seems to require a longer time to bring about a decided effect. At any rate, if the attacks do not abate at once, or as soon as they were expected to, continue the injections as directed above, and in the great majority of cases the beneficial effects will manifest themselves in a reasonable time.

As to how long crotalin will have to be continued before there is a permanent cessation of the attacks, not a sufficient length of time of its use has elapsed to form a definite opinion, especially not, if it is true, as some high authorities maintain, that no case of epilepsy can be called cured until the attacks have been checked for a period of five or six years.

One of the most aggravated cases treated by the writer had one hundred and sixty major attacks in one month before the crotalin was given, but the seizures finally yielded to the influence of the latter, and have not returned for a period of a year and three months. It is, therefore, quite certain that not until the drug has been used more extensively and for a long time, and not until a sufficient amount of clinical material has been collected, will anyone be in a position to give a definite opinion on these points. Judging its effects, however, from the experience of others and that of the writer, who have given it persistently for several years, there is little, if any, doubt as to its utility, and that in regard to permanency it will, in all probability, be able to hold its own.

Note.—Since the preparation of this article, the writer has been surprised to learn that crotalin is dispensed for hypodermic purposes in ampules, at an exorbitant and a practically prohibitive price. He, therefore, wishes to add that among the many thousands of injections which he has given in the last five years, he has never encountered an abscess, or any other serious mishap, and is, therefore, unable to see any good reason why the exorbitant high-priced ampule should be substituted for the comparatively inexpensive solution as given above.

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3. During the last year and a half Dr. Isaac Barton, of this city, has been using intralaryngeal and intratracheal injections of crotalin solutions with very good results. The writer has had the opportunity of witnessing the favorable effects of the administration of this drug in this way in a number of instances. Dr. Arthur C. Wolfe, of Ridley Park, Pa., has treated a number of cases of laryngeal tuberculosis by injecting small doses of crotalin directly into the mucous surface of the larynx and its immediate surroundings, and, it is claimed, with favorable results.

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# THE MENACE OF THE "RECOVERED" INSANE.

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EVERY patient discharged as "recovered" from an insane hospital is a menace to the community. This menace may be direct or indirect, local or general; or it may be all of these. Directly and locally the menace is through the tendency of the disease to recur; indirectly and generally by the probability that such a case will beget offspring, and thus with deadly certainty transmit the neuropathic make-up.

Consider, for example, the case of a young man of thirty who has "recovered" from an attack of manic depressive and resumed his accustomed place in the circles of his community. Let us assume that he remains in apparently normal health for the rest of his life. Under such circumstances he will almost certainly beget offspring, legitimately or otherwise. If illegitimately the effect upon future generations can only be estimated by a personal knowledge of the man's sexual intensity. If legitimately, we can predetermine the certain effects with scientific—almost mathematical—accuracy, thanks to the work of the Austrian celibate, Mendel. In either case the community will suffer, in our own generation, or the next.

For even if this man be fortunate enough to marry a normal woman of pure normal ancestry, and all his children be normal, a certain number of his children's children will not be. So that his grandchildren—and, incidentally, your grandchildren and mine—will inherit a legacy requiring the care of a certain number of dependent defectives.

If he is less fortunate and marries a woman who is herself normal, but who inherits a neuropathic taint even from one grandparent, half his children will be neuropathic, and half will be normal but capable of transmitting the neuropathic make-up to their progeny. And in that case a burden will be placed upon our children as well as upon our grandchildren.

If he is most unfortunate, and chooses for his mate a woman who is neuropathic, all their children will be neuropathic. And in that event not only will our children and our grandchildren be burdened, but we ourselves will be called upon to help support a certain number of insane, epileptics, alcoholics, or other defectives.

It is not a covetable heritage. The population and the difficulty in procuring food are both steadily increasing: one condition is undoubtedly dependent upon the other. Meanwhile the number of insane dependents seem to be increasing twice as fast as the population. If we find no means of correcting these conditions the ultimate result is obvious and appalling, and may well cause thoughtful persons to question the desirability of such promiscuous increase in population as taught by creeds, and shouted by certain politicians.

Such views are based on the assumption that a blessing of yesterday is a blessing to-day and will be a blessing to-morrow. But economic conditions that existed in the past—even fifty years ago—do not prevail at present. Applied science has prolonged the average term of human life without correspondingly increasing the means of supporting it. Nature's laboratory, not the laboratory of the scientist, is still the only source of our food supply; and the productive capacity of this laboratory is being sorely taxed.

Before the intervention of science—only yesterday, as it were—famine, pestilence, and war, so depleted the population that there were more land than tillers. Food that could be had for the sowing on land that could be had for the taking, was cheap. And when this land near at hand became crowded there was more to be had a little farther on. At that time there were frontiers to be conquered as well as cultivated, and men were needed for both. But all this is changed. Even in America the free lands are gone; and the rate of production on the available land is not keeping pace with the increase of population. Thus in 1909 there was an increase of 21 per cent. in the population of the United States over that of 1899; but there was an increase of only 1.7 per cent. in the entire crop of cereals. Stated otherwise, there was a shortage of full ten bushels for each man, woman, and child in the country.

At the same time there is a corresponding decrease in the number of meat-producing animals per capita. The aggregate decrease in hogs, sheep, and meat-cattle between 1900 and 1910 was 23,499,073 individuals. Thus there are sixteen million more human beings to be fed; twenty-three million fewer meat-supplying animas to feed them.

Coincident with such figures we are confronted by the fact that at least one per cent. of our population is insane or congenitally defective (non-producers), and their numbers increasing "at a rate which is about two times as great as the rate of increase of the general population." Such a condition presents a serious problem to-day, and unless radically changed, will menace us to-morrow. What are the available means of combating it?

Our efforts to cure insanity, once it has fully developed, have thus far proved practically fruitless. "Very few cases indeed recover permanently," says Rosanoff. "Further, it must be pointed out that treatment may be palliative but does not materially affect the prognosis, and that in a given case the course and termination will depend upon the nature of the disorder and may be predicted without reference to the management of the case." In other words we have snatched the insane from filth and suffering and made their condition one of cleanliness and comfort, without finding a means of curing them or changing the inevitable course of their disease. Obviously, then, we should seek other remedies. And the remedy that naturally suggests itself is that of preventing the propagation of neuropathic progeny—universal quarantine against the psychosis plague.

One of the most important steps toward accomplishing this must be along educational lines. Such organizations as the National Committee for Mental Hygiene are doing valuable work in this field and cannot be too highly commended and supported. But we have reason to fear, from the discouraging results in other allied fields, that education alone will prove a distressingly slow process. The existing opposition to vaccination among seemingly intelligent people is a case in point. And we certainly cannot hope that a man with this non-receptive type of mind will deny himself the right to marry the girl he loves simply because he knows that one of his or her parents were insane. More-

over, the exact mental status of four parents cannot always be determined. But wo do know the mental status of the individuals who have been pronounced insane officially, and by one means or another we should try to prevent the perpetuation of their defective make-up.

A radical method that naturally suggests itself is that of passing and enforcing laws preventing the marriage of any person once officially declared insane. But obviously such laws would not be effective. They could indeed be nominally enforced, just as in the case of the law against bigamy. But as in the case of this law, they would not prevent illicit sexual intercourse. So that, instead of curtailing the dissemination of the neuropathic germ plasm, such a law might result in scattering it broadcast instead of confining it to a single family.

It has been suggested that laws be enacted allowing recovered insane persons to marry, but forbidding them to propagate children *until after five years of married life*. We could pass such an absurd suggestion without comment were it not for the fact that it is being promulgated by persons whose word carries weight. Yet there are two patent and vital objections to it: (1) It is impracticable; (2) it would not alter ultimate results if it were so; the power of transmitting the neuropathic make-up is not lost in five years, or during the sexual lifetime of the individual. As to the probability of children being propagated during those first five years, we may judge by the results of married life among normal individuals. For every physician knows that during those first five years, both man and wife, in a large majority of instances, try to avoid propagating children by every method that can be gleaned from more experienced friends, relatives, and gossiping neighbors. Yet conception usually takes place during that period. Such being the case we certainly cannot expect that the unfortunate neuropath will succeed where his normal brother fails.

Compulsory segregation in permanent psychopathic colonies offers a possible solution of the problem. But this would be, in effect, to increase the scope and dimensions of our already top-heavy asylum systems so as to make them permanent residences for committed persons, with added marital privileges. At best such a method would only focalize, without correcting, the evil.

Sterilization, by vasectomy in the male and division of the fallopian tubes in the female, offers an effective, and possibly the most practical method of protecting our own and future generations from the increasing number of neuropaths. Both are simple operations and are attended by practically no mortality when performed by competent surgeons. And if laws were enacted whereby the recovered insane person might elect whether he remained unmarried or submit to sterilization, they would probably be reasonably effective, and at the same time quite as humane as the existing laws for controlling the insane.

That such a law would impose hardship on the unfortunate neuropath cannot be questioned. Undoubtedly the greatest of these would be the denial of the right to "have children comfort his declining years." But if, through a campaign of education, the psychopath (and the general public) could be shown that such children were likely to be anything but a "comfort"—a humiliating drag, indeed, as regarded at present—his attitude toward the desirability of progeny might be corrected, particularly as his sexual pleasures and instincts need not be interfered with.

A certain number of psychopaths would prefer to remain unmarried, and satisfy their sexual craving illicitly, rather than submit to sterilization. But this would be almost exclusively among the males; for even a vicious woman usually prefers to hide her immorality under the cloak of matrimony. So that, in practical application, a law for sterilization ought to be quite as effective as most other laws.

There are of course serious obstacles to be overcome before such a law could be enacted or executed. The legal mind obtrudes the question of personal rights of the individual. But this objection is answered by the present legal attitude toward insanity. Certainly it is no more an infringement of personal rights to forbid marriage without previous sterilization to a person whose insanity is quiescent than to imprison that person when the disease becomes active. Moreover, we have the precedent—the legal touchstone—of laws permitting the sterilization of criminal neuropaths in several states.

A more formidable opposition comes from certain churchmen, who object to sterilization on moral grounds. The same objection was raised against etherization half a century ago, the opposition of conservatism to progress. But it is reasonable to believe that a campaign of enlightenment would remove this objection to sterilization as it did the opposition to anesthesia. It is a matter of being able to present facts as well as theories.

Fortunately we are now in a position to do this. Practical observations of the working of Mendel's laws have shown us that the neuropathic make-up is transmitted along definite lines, and can therefore be combated with certainty. We know that normality is a dominant trait that breeds true; that normal human beings with normal ancestry will beget normal offspring—a thing we could only surmise prior to the discoveries of Mendel. Thus, by proper breeding, we could eliminate the greatest cause of insanity, heredity.

The three other great causes, alcoholism, syphilis, and traumatism, would still require consideration. Alcoholism would, in all probability, be eliminated with the elimination of the neuropathic taint, since this condition is almost invariably dependent upon a neuropathic make-up. Syphilis has received a mortal wound from salvarsan and its allies. And traumatisms play an entirely unimportant part in hereditary insanity. So that we can assert with certainty that if we systematically apply sterilization, we will confer the blessing of a cleaner neuropathic make-up upon posterity than has been granted our own, or former generations. It would have little effect, for the present at least, upon the vast army of sane neuropaths that contributes so largely to the root, trunk, and branches of our family tree. But it would eliminate a few defective twigs, and might lead to more extensive pruning; and even a little pruning is better than none.

It will be pointed out that incompetent surgeons would be likely to do bungling, ineffective, and dangerous work, if the operation for sterilization were performed by any but specially qualified operators. This is, of course, true. But this offers no insuperable difficulty, as exemplified by the laws governing the commitment and care of the insane at present. In most enlightened communities only specially qualified physicians are allowed to pass

upon insanity officially. And in the near future surgery will only be practiced by men proved competent for the work.

## THE DIFFERENTIAL DIAGNOSIS BETWEEN PNEUMONIA AND APPENDICITIS.*

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To the layman, and indeed to some practitioners, this topic will seem somewhat astounding. Yet an error in judgment is frequently made between the two conditions, much to the chagrin of the physician or surgeon making it and to the detriment of the patient.

The differential diagnosis is often not easy. In fact, in some cases it is impossible for some hours to tell with which condition one is dealing. The point of differentiation are few until definite signs of lobar pneumonia develop. The following series of cases will probably demonstrate this fact:

Case I.—L. B.; native of United States; age, 30. Family history, negative. No history of tuberculosis in the family. Previous history, an engraver by occupation. Very regular in his habits: non-alcoholic; smokes tobacco in pipe moderately. No venereal disease. Gives a history of frequent coughs with what is described as "malaria." No blood examination had ever been made. Always perspires profusely.

Present Illness.—Two days before examination had a slight cough. One day later noted that he perspired freely, and coughed somewhat more. Was markedly constipated. Took a five-grain blue mass pill, but with only a slight result. Then began to complain of a severe pain in his iliac region, for which he desired medical attention.

Temperature, 104.8°; pulse, 100; respiration, 28, short and catchy. No expiratory grunt. Alæ nasi dilate somewhat with each expiration. Had never vomited.

Examination of the chest gave negative results save for a slight râle occasionally with expiration over the right base.

The abdomen was distended and there was no abdominal respiratory movement. The right rectus was as tense as a board and pressure as slight as laying the finger on Monroe's or McBurney's points elicited great tenderness. The patient was very tympanitic, and said he felt very constipated. Calomel, one-fourth grain every ten minutes for eight doses was ordered, with a dose of Epsom salts in the morning. An enema was also given at once. No opiate was administered.

Leucocytosis of 22,000; Polynuclears, 78 per cent. The diagnosis hung between pneumonia (central) with diaphragmatic pleurisy and acute appendicitis.

Seen four hours later the temperature had fallen to 101°; pulse, 88; respiration, 28, but still purely costal in type and catchy. Physical signs remain the same. An ice-bag over the appendiceal region was ordered. No opiate administered. The next morning, eight hours after the first visit, at the right base in the postaxillary line a patch of bronchial breathing with bronchial voice was made out. Temperature of 104.6°; pulse, 120; respiration increased to 30. A diagnosis of probable diaphragmatic pleurisy with central pneumonia was made, which by evening was entirely substantiated by the physical signs and symptoms. The right rectus was no longer tense and in one day all tenderness had disappeared.

This case presented all the cardinal symptoms of appendicitis except vomiting: viz., rigidity, tenderness over the cardinal points, constipation, fever, and leucocytosis, with none of the signs of pneumonia excepting a slight increase in the respiration rate.

Case II.—While still a medical student I was shown a case which presented a similar picture excepting that in this case the patient was operated upon. A man with all the cardinal symptoms of appendicitis was shown by the attending surgeon as one of those cases with a sudden and progressive attack with progressive leucocytosis and polynucleosis. He opened the abdomen and found a normal appendix; he then exposed the liver and biliary passages and found an entirely negative picture. The house staff was then asked whether he had been examined for pneumonia or pleurisy. Such examination had been made. Yet that same evening, as he explained later, a true pneumococcal pneumonia of the right lower lobe was present. This error occurred in one of our largest metropolitan hospitals—where every care in diagnosis is routine.

Case III.—While I was assistant house-surgeon a patient was brought in one morning with a history of chronic constipation with recurrent attacks of pain in the appendiceal region. The cardinal symptoms of the disease were present, including leycocytosis (progressive in character) and vomiting. The attending surgeon examined the case and concurred with the house-surgeon's opinion that a progressive, acute and probably suppurative appendicitis was present. He was therefore operated upon and a normal appendix found; the gall-bladder and ducts were explored and as the peritoneum just below the diaphragm seemed somewhat inflamed, especially about the liver, the case was declared one of perihepatitis. Following the operation the pain still continued and the patient's condition did not improve. That night the change of service occurred and the succeeding house-surgeon, Dr. Geo. Mueller, on the next evening told me that a pleurisy was present, which was followed by pneumonia. The patient went on to recovery.

The probable diagnosis in this case was initially a diaphragmatic pleurisy, followed by a central pneumonia. Whether the clouding of the peritoneum was due to pneumococcic involvement of the peritoneum, I do not know.

Case IV.—M. V. Male, six years old. Was sent to the hospital for examination. Seen by a surgical attendant the diagnosis of acute suppurative appendicitis was made and the case admitted for operation. On admission the patient had a temperature of 103°; respiration, 40 per minute; pulse of 120. The face was flushed, the alæ nasi dilated widely with each expiration; there was heard the characteristic expiratory grunt of pneumonia. The child lay with its knees flexed, the thighs flexed on the abdomen. The right rectus was intensely rigid; there was tenderness apparently over McBurney's and Monroe's points. Physical examination of the chest showed a pleural

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friction rib on the right side, below, in the mid-axillary line with a slight area of dullness. Numerous subcrepitant râles could be made out over the lower chest posteriorly and anteriorly. The left chest was clear. A diagnosis of lobar pneumonia was made. White blood count, 17,600, with a polynucleosis of 83 per cent. The next day the lower right lobe was consolidated, bronchial breathing with dullness were distinct. The pleural pain had ceased, the rigidity of the rectus had vanished, and there was no tenderness over the appendiceal region.

Case V.—J. P. A woman of thirty-three was admitted to the surgical wards at 11 P. M. with a diagnosis of acute appendicitis complicating pregnancy. Seen 20 minutes after admission she gave the following history. She was seven months pregnant. She had never had any previous gastro-enteric disease or attacks simulating appendicitis. On the afternoon of the day of admission she had been seized, following a brief chill, by a sharp pain in the epigastrium and right hypochondrium. This pain was sharp and lancinating and aggravated by respiration. Toward evening it had become more limited to the right side and extended from the right hypochondrium down to the iliac region. She had been markedly constipated for two days. At about 9:30 P. M. the pain had become colicky in character and marked in both iliac fossæ. Respiration still was painful. She was seen by a very capable physician and keen diagnostician who sent her to the hospital with the above-mentioned diagnosis. On admission physical examination was as follows: She had an intensely drawn expression, indicative of severe pain, her cheeks were flushed, her alæ nasi dilated with each expiration, which was accompanied by a grunt. The inspiration was shallow and halted apparently by pain. Her temperature was 102.6°; respiration, 40; pulse, 120.

The abdomen was rigid, particularly on the right side, the recti standing out like boards, the percussion note generally was tympanitic. Palpation was extremely painful, especially on the right side. No definite mass could be defined (except the uterus and its contents). As to the points of abdominal diagnosis, the pain was so general apparently that no definite localizing point could be made out.

The heart was normal. On the right side posteriorly at a point just internal to the inner margin of the right scapula and between the fifth and sixth ribs an area of bronchial breathing with a few subcrepitant râles about the size of a 50-cent piece could be made out, otherwise the chest was normal.

The vaginal examination showed two fingers' dilatation of the cervix with active labor occurring. Leucocytosis of 18,000 with a polynucleosis of 91 per cent. was present.

At the time I suggested for diagnosis central pneumonia with pleurisy complicating pregnancy. Such, however, was not the opinion of most of those who saw the case. Dr. J. J. Mooney saw the case and while not offering a definite diagnosis, declared that as labor was progressing and as there were physical signs and symptoms enough to warrant my opinion of the case, advised waiting until labor had been consummated before a definite opinion could be expressed.

The next morning at about 9 o'clock the woman was delivered of a seven-months' fetus, which died almost immediately following birth. Seen at 11 A. M., the area in the lungs, previously described, to my ears still showed bronchial breathing more marked than the night before. Still, doubt existed. The pain, however, had diminished considerably, the tenderness over the recti was not so marked.

The next day, however, the diagnosis was perfectly clear; the lower right lobe on the right side was solid, the middle lobe showed beginning congestion. The patient had begun to cough, the sputum was rusty and on examination showed abundant pneumococci. All abdominal rigidity had passed away. There were no points of tenderness. Crisis occurred on the eleventh day and the patient went on to perfect recovery.

Case VI.—H. P. Age, nine; schoolboy. Four days before admission felt sick after eating a pear. He had a headache and pain throughout the abdomen. The mother sent for a physician who ordered castor-oil and the bowels moved the next day, and ever since the onset of his illness. On the evening of the day of onset he vomited, the vomitus being a dark red. The pain finally settled in the right illac fossa. He had been coughing one week before the onset of his present trouble, his sputum being profuse and white in color. On Monday following the onset of his illness he experienced a chill.

On admission he complained only of intense pain in the right iliac fossa. Physical examination summarized showed: Temperature, 103.8°; pulse, 130; respiration, 44. (1) Rigidity of the right rectus; (2) Tenderness over Monroe's and McBurney's points; (3) Rectal examination negative; (4) A general tympanitic note over the ascending and transverse colon; (5) Flexion of thighs on the abdomen. The heart was normal. Both sides of the chest posteriorly showed crepitant and a few moist râles.

On the right side anteriorly in the fourth interspace an area of suspicious bronchovesicular breathing was made out. I hung between the diagnosis of lobar pneumonia (central, coming to the surface) and acute appendicitis. White blood count, 31,200; polynucleosis of 85 per cent. Dr. Frank D. Gray, under whom I had the pleasure to serve at that time, decided in favor of the latter opinion. The child was operated upon immediately and an acute suppurating appendix was found.

This series of cases presents then some actual experiences, and points to the difficulties which present themselves in the differential diagnosis between the two conditions.

Some declare that error is avoidable in these cases; that routine and careful examination of the chest will always do away with chance errors. I will admit that in the majority of cases this is so, yet there are cases in which the differentiation, early in the process is entirely impossible.

Rose and Carless state that "In a well-marked case (of appendicitis) the diagnosis can never be in doubt. The pain, tenderness, fever, vomiting and constipation, abdominal rigidity, and perhaps tumor, constitute a picture which is quite characteristic. The disease, however, often presents symptoms so varied, and manifestations so protean, that one is never surprised to meet it in all sorts of diverse settings, and many mistakes in diagnosis are made, even by the most skilled clinicians."

Johnson in his "Surgical Diagnosis" declares: "I have moreover seen a very competent surgeon make a probable diagnosis of appendicitis in a case of central pneumonia of the right lung with prob-

able diaphragmatic pleurisy. The muscles of the right side of the belly were quite rigid."

Edwards quotes one case of pneumonia which was operated upon for appendicitis and a second which barely missed the surgeon's knife. In his very instructive paper he declares, "That diagnostic errors and unnecessary operations may be unavoidable."

Feer states that "children of 3 to 7 years of age very often refer the pain (of pneumonia) to the epigastric region. These gastric and abdominal pains are decidedly characteristic of croupous pneumonia. Not infrequently these pains simulate appendicitis, to which also the vomiting, the absence of physical signs in the lungs and the appearance of grave clinical manifestations in the midst of perfect health are added in a misleading manner. They have led to operation in these cases of "pneumo-pseudoappendicitis."

It would seem of value therefore to review the diagnostic points of the two processes and to see what aids for differentiation can be employed.

The subject, I believe, can best be approached by classifying the conditions somewhat as follows: (1) Pneumonia simulating appendicitis; (2) appendicitis simulating pneumonia; (3) coexistence of the two processes; (4) so-called postoperative (ether).

*Pneumonias.*—The first is by far the commonest error made, and as faulty diagnosis (as proven by operation) gives a mortality of 20 per cent. of the cases wrongly operated upon, needs most careful study. As a general statement, it may be said that the error of diagnosis in most of these cases is due to the fact that the abdominal symptoms, especially in children, so far outshadow the respiratory ones that careful thoracic examination is neglected. Yet cases do exist in which the diagnosis is impossible for some time.

An analysis of the cardinal symptoms in the two conditions is requisite.

1. *Pain* in pneumonia is often reflected to the region of the appendix, or other abdominal organs, especially with a diaphragmatic pleurisy. The pain is usually sharp and lancinating, in contradistinction to the colicky epigastric pain, later followed by a dull continuous ache in the right iliac fossa, which is present in appendicitis. Yet the two pains may be very similar even in the adult, and in children, who cannot adequately express the finer differentiations, the two cannot be distinguished.

Again some authorities claim that the pain in pneumonia ceases usually in a characteristic manner, and that this can be used as a differential point. This is a dangerous differential, as with rupture of the appendix or gangrene the pain ceases in most instances at the moment when operative interference is absolutely essential.

2. *Nausea and Vomiting.*—This, if progressive, may point to appendicitis or ileus, yet how often, in children, and even in adults do we find initial vomiting in pneumonia!

3. *General abdominal sensitiveness* at first, finally most marked in the region of the appendix. As a general rule it may be stated that the greatest tenderness is over the seat of the appendix, and that generally it is in the right iliac region. But how often in pneumonia is the pain as intense in the same region! To differentiate the tenderness various differences in the two diseases have been noted. Whitacre, for instance, declares that the tenderness in pneumonia is always superficial, as does Henoch. Others claim there is a hyperesthesia of the skin over the appendix in pneumonia. The same authority declares that in periappendicitis the skin over the appendix can no longer be touched. Deep tenderness is said to be diagnostic of appendicitis, yet in both conditions the rectus may be so tense that deep palpation is impossible.

In my own experience, in pneumonia the abdominal tenderness has been more general and more superficially situated than in appendicitis. In the first and fifth cases cited, the abdominal wall was so tender to touch over the right rectus that even the lightest pressure caused intense pain. It may be stated, I believe, that superficial tenderness is more characteristic of pneumonia than of appendicitis. This is probably due to the fact that the lower dorsal nerves which supply both cutaneous and muscular branches to the abdominal wall, are irritated reflexly by the pleurisy and the beginning pneumonia.

4. *Elevation of Temperature.*—This is practically of no value for differential diagnosis. Both diseases may have a sudden, high elevation of temperature, both may begin with a low grade pyrexia. The temperature of pneumonia tends, however, to rise more suddenly and to a higher point than that of appendicitis; in children this is not true.

5. *Leucocytosis.*—Both diseases show early a leucocytosis with a marked increase in the polynuclear elements. Both, if progressive, show a progressive leucocytosis (Gibson's curve). A low leucocytosis in both is an ominous sign of decreased resistance. The blood count therefore helps but little in the diagnosis.

Thus we find that we can have the five classical symptoms of appendicitis as described by Murphy exactly simulated by central pneumonia with diaphragmatic pleurisy. The order of the symptoms may be the same, and again the symptoms in appendicitis by no means follow in the above order. I have seen only vomiting and elevation of temperature as the first signs. Again, one of the five symptoms may be absent in either of the conditions and the picture still be obscure. It therefore becomes necessary to enter into the further discussion of symptoms.

6. *Facies.*—The so-called "peritonitic facies" is often described as characteristic of appendicitis, and that it is not present in pneumonia. This is probably a differential point, but with this facies, as a rule, appendicitis is past the stage of early diagnosis and begins to show peritoneal involvement. The diagnosis should be reasonably clear in these cases. The dilatation with expiration of the alæ nasi in pneumonia is quite characteristic, but may, in rare instances, especially in children, be closely simulated in appendicitis.

7. *Attitude.*—With appendicitis the patient generally flexes his right knee and his thigh upon his abdomen. This is rare in pneumonia, excepting when there is considerable diaphragmatic pleurisy, when the same attitude may be assumed. In two instances of pneumonia the patient has asked to be elevated, saying that this eased his pain. Whether this relaxed the pressure of the abdominal parietes on the diaphragm, or wether this caused tension from below by the weight of the liver on the diaphragm and thus separated the inflamed parietal from the visceral pleura, I cannot say.

8. *Rigidity of the Abdominal Wall.*—This varies considerably in both diseases. The right rectus may be tense and stand out like a board in both

conditions. Again in both, the wall may be lax. Brewer and Johnson state that there is little or no muscular rigidity in acute catarrhal appendicitis. Johnson cites a case of gangrenous appendicitis in which no abdominal rigidity existed. Whitacre declares that in pneumonia the "rigidity is less circumscribed and is very great." This is true in a great many instances, yet in case one, the rigidity was distinctly limited to the right rectus, while the left side of the abdomen was soft, and could readily be explored. Some authors declare that in pneumonia the abdominal wall relaxes for a moment with each inspiration. This view is diametrically opposed by Edwards, and, I believe, justly.

9. *Distention and tympanites* are present frequently and early in both processes. Butler declares that in pneumonia "it may be so excessive in conjunction with abdominal pain, as to suggest peritonitis."

10. *Constipation* is common early in both diseases, and furnishes no aid in differential diagnosis.

11. *Chill* is by far commoner in pneumonia. It is early and very marked. Outside of vague chilly feelings, chill is rare in appendicitis.

12. *Respiration* in both processes may be very similar. Rapid, and costal in type, the respiratory movement is limited in both conditions, one to limit friction in the diaphragmatic pleura, the other to limit pain in the appendix due to change in intra-abdominal pressure during the movements of the diaphragm.

Yet the careful observation of the respirations will point very clearly in a great many instances to the diagnosis. In pneumonia the respiration rate is definitely increased in relation to the pulse; it is catchy (a sign which should be watched for, as it is very characteristic of the pleural involvement), and what in children is especially of aid, the expiration is accompanied by a grunt. This is rare in appendicitis. Winters points to another symptom, of value as a differential, the reversal in pause between expiration and inspiration, which is quite characteristic of pneumonia in children.

13. *Herpes labialis* when present point strongly to pneumonia, yet the stage of development should be noted, for a pre-existing herpes due to some other cause may be the one present. An early herpes is of marked diagnostic value.

14. *Cough* if present would indicate pneumonia, yet in the asthenic type and in children, cough is frequently absent.

It is therefore evident that all the signs of pneumonia, early in the process may simulate those of appendicitis, and that great care is necessary for their differentiation.

When one remembers that the physical signs of a central pneumonia may be absent entirely throughout the course of the disease (Pfaundler and Schlossman, Butler), and looks upon the so-called post-operative pneumonias following appendicitis (declared a mild catarrhal appendix after, but a progressive suppurating one, before operation), would it not seem that these may have been pneumonias unrecognized initially?

*Appendicitis Simulating Pneumonia.*—This error is not commonly made, yet in children may readily occur. One may briefly consider this under two headings: (*a*) With normal lungs; (*b*) with a previously existing pulmonary condition.

With normal lungs there should be no difficulty in the diagnosis under ordinary circumstances, yet J. B. Roberts calls attention to "a possibility of a secondary congestion of the lower part of the right lung in a considerable number of cases of acute appendicitis in its early stages. "This condition," he says, "may be a possible aid in the diagnosis of acute appendicitis, when the symptoms of the latter are not very definite. Appendicitis, and perhaps other intraabdominal inflammations, may cause atelectasis of the right lung, or a true congestion, because of insufficient action of the diaphragm on the right side." This, then, points to another difficulty in the differential diagnosis of the two conditions, making it almost impossible in certain instances, to state whether one is dealing with a beginning pneumonic congestion due to the pneumococcus, or to one due to appendicitis.

And, as a matter of interest in these cases, the blood examination for the pneumococcus will be of little or no value, for this organism may involve either the appendix (the iliocecal region), as well as the lung and occasion a true pneumococcus septicemia (Porter, Mummery and White).

With a previously existing pulmonary condition, the early diagnosis may be entirely confusing. Râles of all kinds may be heard at one, or both bases and who, with the remainder of the physical signs of pneumonia present, can differentiate them from incipient pneumonia?

The bronchiectatic cavity, the atelectatic area, the localized process, may all simulate pneumonia during an acute attack of appendicitis so closely that diagnosis may be impossible. History in these cases is of great importance, and should be elicited with great care.

*Pneumonia Complicated by Appendicitis or the Reverse.*—This rarely occurs but should be thought of in every case. The knowledge that the constipation and the intestinal distention in pneumonia may cause a recurrence in a previously inflamed appendix should lead one carefully to examine the abdomen in all cases of pneumonia.

*Ether Pneumonia.*—The existence of this process is not denied. But we would call attention to cases in which a so-called catarrhal appendix (or a perfectly normal appendix) is removed, to be followed at once by a pneumonia, on the right side, in the right lower lobe. It would seem that in some of these cases the error had been made and never been recognized by the surgeon.

In conclusion, agreeing with Edwards, it is probably better to remove a normal appendix with an existing pneumonia unrecognized, than to allow a pus appendix to remain, to awaken too late to save the patient from a general peritonitis. This does not speak, however, for any lack of care in diagnosis. Every point should be well weighed, and then a decision reached. Perfect frankness in our errors leads to a more perfect understanding, therefore let us carefully consider and weigh them, and thus gain a true insight into the conditions which may baffle us, even with apparently no hope of solution.

220 Audubon Avenue.

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**Pancreatic Transplantation in the Spleen.**—J. H. Pratt and F. T. Murphy note that pancreatic tissue implanted in the spleen and separated from its original vascular and nervous connections can live and functionate for months. A small nodule of pancreatic tissue composed of acini without demonstrable islands of Langerhans prevents the development of diabetes. Death occurs in dogs 187 days after the extirpation of the pancreas.—*Journal of Experimental Medicine.*

# A BRIEF COMPARISON BETWEEN HOSPITAL SERVICE IN GERMANY AND THAT IN THE UNITED STATES; WITH A REFERENCE TO THE REQUIREMENTS FOR MEDICAL PRACTICE.*

By H. J. BOLDT, M.D.,

NEW YORK.

It might seem to one not thoroughly acquainted with existing conditions that, save possibly in number of patients, there is practically no difference in the two countries. As a matter of fact, however, there are several noteworthy dissimilarities. To begin with, the appointment of an incompetent attendant to a large German hospital is a thing unheard of, whereas in our country such appointments are by no means rare. I have known of more than one instance where influence has secured the appointment to hospitals here of physicians almost wholly lacking in practical knowledge of the ailments to be treated in the department to which they were assigned; and I am quite sure that such happenings are likely to continue for many years. Certainly, where men are appointed to fill positions as chiefs in departments for which they have evidenced but scant ability, the best interests of the institutions and their patients cannot be served.

I would point out, too, that the best, the only sure way to become competent is to begin at the lowest rung of the ladder and serve patiently as an assistant without evincing undue eagerness for promotion. Real learning, originality, ability, must eventually impress not only the head of the department, but others as well, and the really competent person will be advanced. Whereas, to make one's self conspicuous in the "climbing up" game is sure to create a disagreeable impression, and is the reverse of likely to profit one in the long run.

Then, too, the power of the attending medical man in Germany is unlimited. He may acquire any appliance or any remedy that he sees fit to use in what he considers proper treatment. He is, in a word, the Czar of the situation.

But of greater, or at least of equally great importance, is the matter of assistants in hospitals. With us, few instances excepted, internes are appointed to serve for a definite time, varying from one to two years; and in most of the large hospitals during this period the interne fills, at regular intervals, the various stations. Unfortunately many—perhaps the greater number—fail to conceive their proper relation to the head of the department in which they serve. They are possessed with the customary American spirit, of looking out primarily and principally for themselves and seeking chiefly their own advantage. This is because the true spirit of principal and assistant has not been cultivated.

In Germany the conditions differ materially. It is customary there for young men desirous of acquiring additional knowledge to secure first a position as a volunteer assistant. Then, should the young doctor show himself in every way satisfactory, he may eventually be elevated by appointment to a regular assistant, which is usually his ambition. As a volunteer he assists in the *Poliklinik* (out-door department or dispensary) and in the *Klinik* (hospital) as directed by one of the regular assistants. He may remain a volunteer for two years or more. I was informed that some clinics oblige the applicants to bind themselves for two years. As a regular assistant, the period is almost unlimited. Eight to ten years or longer is not unusual. But should he do exceptionally good and original work and have been promoted in rank and in title because of the excellence of his work and publications, he may get a call from a university to fill a chair, when a vacancy occurs.

During his assistantship a thesis on some original investigation should be written by him, and if acceptable to the board of critics he is then permitted to establish himself as a private instructor (*Privat Dozent*). In this position his income, usually very meager, and varying with the number of his pupils, his teaching ability, and the clinical material he controls, helps or entirely suffices to defray his expenses.

What very forcibly strikes one who, being conversant with the language, talks with the assistants, is the veneration in which the chief of department is held by all of the younger men. The strict discipline and the careful attention to minute details of custom and rule are remarkable. Even though the first assistant has been promoted to a titular professorship, so that he actually serves as a substitute for the chief during his absence, and though he may do fully as good or even better technical work than the chief, still that reverence, that submission to the slightest wish, that high esteem for the chief remain unabated.

As for the chief, should he desire a certain line of work investigated, a careful study made in a certain direction, all that is necessary is to make the suggestion to one of the assistants, either volunteer or regular, and he may rest assured that nothing will be left undone to secure a successful result. The prosecution is thorough and painstaking, including an intelligent consideration of all available literature on the subject. Suppose, for instance, the chief be desirous of knowing the results of a particular line of treatment. The order is given to a member of his staff, and with the better means afforded of tracing persons in Germany, by reason of the existing police control there, that assistant will be enabled to place all the desired facts fairly well at his chief's disposal. There is, indeed, an unquestioning loyalty to the head of the department, such as, so far as I know, exists in few institutions in our country.

Suppose, on the other hand, one of the volunteers, or one of the junior regular assistants, be desirous of writing upon some theme. Invariably he asks permission of the head of the department, and invariably it is given. And frequently, then, he obtains not only suggestions, but actual aid in the effort from one of his superiors.

From a purely scientific viewpoint proper routine laboratory work in our country is an exception. In Germany it is the rule. Let us take a simple case for illustration: A woman with an eroded cervix. A small piece of tissue, and the curetted scrapings are sent to the laboratory and a careful examination is made by one actually competent to make it. Not infrequently an early carcinoma, or a tuberculous condition is thus recognized. No specimen is ever thrown away—a common occurrence in most of our hospitals—all are carefully examined.

*Read at the meeting of the Society of Medical Jurisprudence, March 10, 1913.

Not only one section, but numerous sections are made, so when the report is returned it may be relied upon. But then—and this is important—the specimen is not destroyed, but carefully labeled and stored, so that serial sections may be made at any time. How very important this is we all know.

Nothing in the history, the *status præsens,* or convalescence is lost sight of. Everything is recorded carefully. It would be inadvisable for the young doctor responsible for these records to be superficial in this or in any other work assigned to him, especially if he aspires to a permanent connection with a teaching institution. And if repetitions of neglect occur he need not expect promotion, nor indeed, if he be a volunteer, to remain long in his position.

It may, in connection with this topic, be appropriate to say a few words concerning the requirements for admission to the study of medicine and those for admission to practice. In Germany they are uniform. A young man must have passed the "Oberprimarium" of the gymnasium before being admitted to the university. The average age of passing is eighteen years. Many do it at the age of seventeen years. How much these requirements vary with us, depending on the medical school, I need not state here. But I wish to assert, and very emphatically, too, that to require a young man to have the B.A. or B.Sc. degree is unfair, in that it is seldom acquired—because of the lax methods of study in this country—before the twenty-first, usually the twenty-second or twenty-third year And that is too long to wait. I do not, however, wish to imply by this that I favor a lesser degree of preliminary education. Certainly our average American college graduate is not possessed of more practical equipment than the German gymnasium graduate. Indeed, he is not nearly so well grounded, being frequently woefully lacking, not only in fundamental undergraduate studies, but in the elementary branches as well. I am sure that where a class of one hundred senior college students and one hundred "Oberprima gymnasium" pupils given an exactly similar examination in Greek, Latin, two modern languages, literature, mathematics, and some elementary subjects—for example, geography and history—the examiner paying close attention as well to the grammar, style, punctuation, spelling, etc., the result would be decidedly in favor of the German class, in spite of its pupils being several years the younger.

The primary fault with us is in our elementary schools. Indeed, our whole school system falls short of a sufficiently high standard. Colleges can do much to compel a better system by requiring the examiners to pay heed not merely to the direct answer to the question of the examination paper, but also to the construction of the answers, the grammar, and the spelling. In a great number of instances the preparation of the American college matriculate has been far too superficial. Too much time has been devoted to matters unconnected with his studies; the examinations are frequently not, in my opinion, sufficiently severe to test the fitness for promotion. The greater number of American students believe that about two hours devoted daily to their studies outside of the class room suffices; whereas the German pupils devote about six hours, and some of them apply themselves eight hours a day. Many advocates of strenuous athletics assert that collegiate sport and collegiate social life are of equal or even greater importance than the actual studies. That, of course, is a matter of personal opinion. I believe that one hour devoted daily to properly conducted physical culture—but that should be compulsory—is sufficient. The German students get plenty of physical development during the year of obligatory army service.

The fact that many medical colleges in this country make an arts or science degree a prerequisite of entrance so delays the aspiring young doctor that, by the time he follows his professional term with experience in medicine, surgery, obstetrics, and the specialties in hospitals where these services are separate for internes, and is in a position to earn a living, he has reached his thirtieth or thirty-first year. And this is too old. Somewhere there has been waste of time. A plan, therefore, must be devised by which our young medical man may be enabled to enter the struggle for existence, properly prepared, at the age of from twenty-four to twenty-five years, as do those across the sea.

In Germany the course of study before one is admitted to practice is six years. There are five years in the medical college, but during the last two years true clinical instruction is given. The candidate must make diagnoses before the assembled class, suggest treatment, and, in appropriate cases, carry it out; the professor subjecting him to an examination on all points in connection with the patient. The last year, the sixth, is called the practical year, resembling largely the final term of interneship in a hospital in our country. This practical year is compulsory, and one is not allowed to come up for the State Board examination without having possessed himself of this clinical experience.

I am strongly of the opinion that in the interest of the people of the United States the leaders in the medical profession here should unite to bring about the enactment of uniform laws governing the admission to the study and practice of medicine. That before a young doctor shall be allowed to take the State Board examination he must have had not less than one year of active clinical experience is of the gravest importance. The plan that now prevails in some hospitals of dividing the different services and compelling an interne to devote from one and one half to two years to one service, affords him an inadequate knowledge for the practice of medicine on a broad basis, in that it limits his practical knowledge to the single field of work that he has been engaged in. And should he elect to take positions in the other services as well, so much time is involved that he reaches the age of thirty before he has finished.

It is obvious, too, from what has been written, that an attendant in a hospital should have the ability to teach, and that he should be compelled to take upon himself that duty.

As a final suggestion, let us have fewer medical colleges, place them under government supervision, and limit them to localities wherein there is abundant material to fit the candidate to enter upon the duties of his profession with sufficient clinical experience. And above all, eliminate commercialism from the study and practice of medicine. In Germany post-graduate instruction to those graduated from German universities is given gratuitously.

Since writing the foregoing I have read a book by Prof. Hugo Muensterberg, of Harvard University, entitled "American Traits." This book

devotes a chapter to education and one to scholarship. I urge, most earnestly, all who are interested in this subject to read that book. There is not a word printed there but can be verified.

39 East Sixty-First Street.

## THE TREATMENT OF ERYSIPELAS IN INFANTS BY MEANS OF VACCINES.

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It has been known for some time that the microorganism of erysipelas is a streptococcus. This microorganism was first obtained in pure culture by Fehleisen. More recent exhaustive investigation and experimentation have demonstrated that Fehleisen's erysipelas coccus is identical with the *Streptococcus pyogenes*, and neither can be distinguished from the other.

Suppuration or abscess occurs in erysipelas, usually when the streptococci are present in large numbers in the tissues outside of the lymph channels, or when there is a mixed infection with the staphylococcus.

My first paper on the use of vaccines in the treatment of bacterial infections in children was published in the Medical Record of August 6, 1910. In this paper (among other infections) I reported in detail and gave temperature charts of two cases of erysipelas in infants which were cured by injections of streptococcus vaccine. Since then eight more cases treated by vaccines have been added to my list.

The ages of these infants were 17, 12, 11, 8, 8, 7, 5, ¾, 5 months and one 8 days respectively. All the cases so treated with the exception of one were cured. Seven cases were treated with streptococcus vaccine alone. One case with combined vaccine (streptococci 50,000,000, staphylococci 500,000,000, colon bacilli 200,000,000) and two cases with Schaefer's mixed infection phylacogen.

Case I.—The case that received the combined vaccine was a case of erysipelas of the abdomen in a poorly nourished Italian child 17 months of age; the temperature was 104.8° F., two, 1 c.c. bottles containing each streptococci 50,000,000, staphylococci 500,000,000, colon bacilli 200,000,000 were given. The child was not seen again for four days when the temperature had dropped to 99.8° F. and the area of erysipelas had considerably diminished, but unfortunately, through some fault of technique possibly, abscesses developed and had to be opened and drained, and the child ran a low temperature and received repeated injections of the combined vaccine for a period of nearly a month, before cured.

Case II.—A child 1 year of age, erysipelas of the leg extending half way up the thigh, temperature 104.6° for first four days, wet bichloride dressing, 400,000,000 mixed staphylococci were given twice. The erysipelas continued to spread over the buttocks, temperature 103.8° F., on the fourth day 80,000,000 streptococci, on the fifth or next day the temperature had dropped to 102.2° F. and although the inflammation had spread slightly higher the whole area of inflammation looked much paler, 80,000,000 streptococci were given and the child was not seen for two days, when his temperature was 101.6° F. and the erysipelas had faded from the leg and thigh. Three days later the temperature was 99.2° F. and the erysipelas had nearly entirely disappeared, 40,000,000 streptococci were given, the next day there was no more signs of erysipelas and temperature was normal.

Case III.—The second case that received the streptococcus vaccine was a child 8 months of age. The infection began at the vulva and the rash had been spreading for a week, having been treated by another physician before it came under my care. When seen the temperature was 103° F., pulse 135, there was marked prostration and pallor. A wet dressing was applied and 80,000,000 streptococci were given on September 18; the next day the temperature was 103.8° F. and the erysipelas had spread about an inch higher; there was marked prostration with pallor. A wet dressing was applied, brandy and 120,000,000 streptococci given. September 20 temperature 103.8°, pulse 125, respiration 44, erysipelas advanced ¾ of an inch up the back and down the leg 1 inch, fading on the abdomen, 120,000,000 streptococci were given. September 21, temperature 103.7° F., pulse 92, respiration 48, pulse weak and irregular. Brandy and strychnine ordered, continuous cold pack, erysipelas had spread scarcely any, and old area fading rapidly, 120,000,000 streptococci were given. September 22, temperature 102° F., pulse 150, respiration 44, quality of pulse good. Erysipelas not spreading, rash had entirely faded, desquamating some, child is brighter and has a good color. Two c.c. of combined vaccine were given, each c.c. contained 50,000,000 streptococci, 500,000,000 staphylococci, 200,000,000 colon bacilli. September 23, erysipelas entirely well, child has diarrhea, temperature 101.9° F., pulse 120.

Case IV.—This was a child 7 months of age with erysipelas of the face and nasal diphtheria. The temperature was 102.2° F., pulse 126; ten thousand units of antitoxin and two c.c. of combined vaccine were given. The following day the temperature was 104° F., pulse 138, respiration 28, and irregular. Five thousand units antitoxin were given and one c.c. of combined vaccine. Next day the temperature was 103° F., the glands of the neck were swollen, but otherwise the child seemed much better; 40,000,000 streptococci were given and the child made an uneventful recovery.

Case V.—This was a child 8 days old with erysipelas of the abdomen and vulva resulting from an infection of the cord of the umbilicus; the temperature was 102.8° F., 40,000,000 streptococci were given, and on the following day the temperature was 101.5° F., and the erysipelas had spread down the thigh to within one-half inch of the knee; 80,000,000 streptococci were given. Next day the child was much better, the erysipelas was fading rapidly, had not spread, and the temperature was normal, 80,000,000 streptococci were given.

Case VI.—Child 11 months of age, with erysipelas of the arm. Infection following vaccination. Temperature was 102.8° F., 40,000,000 streptococci were given. The following day the temperature was normal and the erysipelas was almost entirely well.

Case VII.—This was a child 8 months of age with erysipelas of the leg following a streptococcus infection. On November 14 the temperature was 103° F., with the erysipelas involving most of one leg, 50,000,000 of streptococci were given. November 15, the temperature was 102.4° F. and the inflammation had not spread. November 17, the tem-

perature was 99.2° F. and the redness and swelling had almost entirely disappeared. November 18, the inflammation and redness had entirely gone and the temperature was normal.

Case VIII.—Child 5 months old with erysipelas of the face. September 12, temperature 105.4° F., wet dressing applied. September 13, temperature 101.8° F., 4 c.c. Schaefer's mixed infection phylacogen given. September 14, area of erysipelas diminishing and fading, temperature 102° F., 5 c.c. Schaefer's mixed infection vaccine given. September 16, temperature 99.8° F., erysipelas almost entirely gone. September 17, temperature normal, face cured.

Case IX.—This was a malnourished, underweight child, three weeks of age. It had a large umbilical hernia, thrush, and a vaginitis. The erysipelas involved one leg and the temperature was 104.6° F. Streptococcus vaccine, 80,000,000 bacteria, was given and a wet dressing applied. The case did not report again at the clinic, but the mother reported that three days after the injection the child had a convulsion and died.

Case X.—This was a child one year of age with erysipelas of the arm. On June 26 the temperature was 105° F., and pulse 162, one c.c. of Schaefer's mixed infection phylacogen was given. On the 27th the erysipelas was still spreading down the upper part of the arm toward the hand, the temperature was 103.6° F. and the pulse 146, three c.c. of mixed infection phylacogen was given. On the following day the inflammation had reached the hand but was fading above, the temperature was 100° F. and pulse 150, two c.c. of phylacogen was given. June 29, temperature 99.8°, pulse 164, two c.c. of vaccine was given. June 30, temperature 100° F., pulse 150. Two c.c. of mixed infection phylacogen given. July 1, temperature 98° F., pulse 136. Child entirely well.

Dock states that erysipelas in the first month of life is almost always fatal, but after that time the danger decreases directly with the age. Kerley says that erysipelas is a particularly fatal disease in infants, 95 per cent. of the cases being fatal in the new born, and 50 per cent. of his cases occurring under one year being fatal. In view of the fact that only one of my cases treated with the streptococcus vaccine was fatal (or a mortality of 10 per cent.), although some of the cases were in very young babies and others were rachitic or badly nourished infants, with poor resistance to overcome such an infection, I cannot but believe that the use of the streptococcus vaccine in infantile erysipelas is by far the most efficacious treatment at our command and I believe it should be used in large doses at twenty-four hour intervals together with the use of local measures.

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**Edema of Conjunctiva from Acute Frontal Sinusitis.**—A. J. M. Wright reports the case of a man who was first seen on May 23 with severe left frontal headache, and edema of the inner portion of the left conjunctiva, lids and orbit, and with a conjunctival hemorrhage. There was a history of a similar attack fifteen years ago. There was pain on extreme deviation of the eyes to the left, with slight diplopia. The septum was deviated to the left, blocking that side. No nasal discharge. The septum was resected on May 26, with relief of the headache, and the swelling subsided. There has been a little left nasal discharge since the septal operation.—*Proceedings of the Royal Society of Medicine.*

## Medicolegal Notes.

**Malpractice — Nonexpert Evidence.** — Action was brought against a physician and surgeon for malpractice in the treatment of the plaintiff's finger. The defendant was attending another patient at the time of the injury, and did not reach the plaintiff until about two hours after it occurred, when the hand was considerably swollen. After an examination he decided that there was a partial dislocation and also a slight fracture of the bone, and he undertook to reduce the dislocation, treating it in the usual way by placing splints and bandages on the finger. He visited her two or three times, each time examining and treating the finger, when she complained that it caused her great pain. Subsequently she returned to her work as saleswoman in a store, but complained that she suffered much pain from the injury. She called at the doctor's office a number of times, and was given treatment, but frequently expressed dissatisfaction that greater progress towards recovery was not made. In about five weeks she discontinued her visits to the defendant, and consulted several others, one of whom, about eighteen months after the injury, amputated the finger.

In her petition, the plaintiff charged, not that the defendant lacked professional skill or learning, but that he carelessly and negligently failed to reduce the dislocation, and failed to discover the condition of the finger, or to skilfully and properly treat it afterwards.

A witness was permitted by the trial court to testify that the plaintiff suffered intense pain all the time. This testimony was held inadmissible as being not in regard to the manifestations of suffering, but a mere naked conclusion that the pain was intense. Another nonexpert witness was allowed to say that the patient's hand was a very sick member; that it was in bad condition; that the joint looked to be out of place. This also was inadmissible. Nonexpert witnesses may testify as to external appearances and manifest conditions observable by any one; but whether a surgical operation has been performed with a reasonable degree of skill, learning and care, such as is ordinarily possessed and exercised by surgeons and physicians in the treatment of their patients, is a question of science, and is to be established by the testimony of surgeons and physicians having special skill and knowledge, and not by unskilled witnesses, who are without training or knowledge as to the injuries sustained, or the art of treating them. Statements made by the plaintiff to witnesses weeks after the injury that she suffered great pain were also excluded as hearsay, being declarations of a self-serving nature.

It was held that nothing in the evidence warranted an instruction to the jury on the theory that the defendant had held himself out as a specialist, or that the degree of skill and care required of him should be higher and greater than is required of the ordinary physician and surgeon.

Judgment for the plaintiff was reversed and a new trial ordered.—Johnson v. Powell, Kansas Supreme Court, 123 Pac. 881.

**Examination as to Witness's Professional Fees.**—In an action for personal injuries a physician testifying for the plaintiff, whom he had attended, testified that he did not attend the plaintiff on a percentage of any recovery he might get for the injury, but that the patient was to pay him as any other patient would when he obtained the money to do so. It was proposed to ask him on cross-examination if he was charging the plaintiff the same as he did another specified person, apparently with the object of then developing the fact that he had charged such third person a percentage. The trial court refused to allow the question, and it was held, on appeal, that such refusal was within its discretion.—St. Louis & S. F. R. Co. v. Clifford (Texas), 148, S. W. 1163.

**Insurance—Misrepresentations as to Health.**—An applicant for insurance stated that he had never had calculus or gravel; that he had never had any other sickness, disease or injury; that he had not consulted a physician within the preceding five years; that he was never under the care of a physician; and that he had no ailment, disease, nor suspicion of any. All of these statements were untrue, and known to be so by the insured's wife and the insurance company's soliciting agent, who knew that the insured was not in good health, and that he had suffered a surgical operation. In an action on the policy it was held that the insurance company was not bound by the agent's knowledge, nor estopped to rely on breach of the warranty as complete defense.—Wilhelm v. Order of Columbian Knights, Wisconsin Supreme Court, 136 N. W. 160.

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## ANALYSIS OF THE GASTRIC SECRETION.

WITH the introduction of test meals in the study of the gastric secretion it seemed as if accurate understanding of the various disturbances of gastric function had been arrived at, and indeed a great deal has been added to our knowledge of this function by such means. Recently, however, it has become understood that the test meal removed by the stomach tube represents the results of the several elements in gastric digestion, and the examination of its chemical and physical properties cannot throw light upon the disturbance of anyone of the elements. The normal secretory activity of the stomach is now subdivided into three phases, thanks to the studies of Pavlov and his coworkers: First, reflex secretion, occasioned by sight of food and its mastication; this secretion is, of course, of nervous origin and depends upon the activity of the vagus nerve. The second phase is the so-called chemical phase, and has been elucidated by the discovery by Edkins (1906) of a "gastric secretin" in the submucous layer of the pyloric part of the stomach. As soon as food enters the stomach this "gastric secretin" combines with some of its elements or with products of their digestion, is then absorbed into the blood, and thus reaches the fundus of the stomach, where it occasions secretory activity of the glands of the fundus resulting in the secretion of acid gastric juice. Workers in Pavlov's laboratory (Drs. Gross and Krjishkovsky) have shown that the fundus of the stomach secretes no juice whatever, when isolated from the rest of the stomach; there is, therefore, no reflex chemical secretion in this portion of the stomach, all of the secretion being occasioned by the hormone action of the "gastric secretin." The third phase of gastric secretion is due to the entrance of food from the stomach into the small intestines and the reflex effect of the intestinal secretion upon gastric activity. This phase has not yet been thoroughly studied.

These considerations have led A. Z. Bilin to attempt to separate at least one phase of gastric secretion in the study of gastric juice by means of test meals, namely, the reflex phase, chiefly due to the presence of the food in the mouth (*Russkii Vratch*, Vol. XII, No. 3, 1913). In order to effect this he has modified the usual Boas-Ewald test breakfast by drying and powdering the two pieces of bread or the roll usually given, mixing it with the requisite amount of tea and then administering the mixture through the stomach tube. The resulting secretion could thus represent the purely chemical phase of gastric secretion and not the reflex phase. In repeating the test meal in the usual manner, he was enabled to tell the "reflex" fraction in the total secretion obtained.

Very uniform results were obtained with persons having supposedly a normal digestion, the chemical fraction of the gastric juice being on the average 64 per cent. and the reflex portion 36 per cent. of the total secretory work of the stomach. Of course, these figures are correct only for the conditions present, namely, for the gastric juice excited by the administration of a Boas-Ewald test meal.

In examining several cases of hypochylia Bilin found that in some of them the deficiency in secretion was due to the deficiency of both elements, the chemical and the reflex; in one case there was almost complete absence of the chemical element in secretion, which pointed, of course, to some deficiency in the "gastric secretin" mechanism of gastric digestion; in two other cases there seemed to be complete failure of the reflex mechanism and therefore the reflex element of secretion. Following these findings, Bilin thinks that it is justifiable to divide hypochylia into three different forms, namely, mixed, humoral, and nervous gastric hypochylia. He undertook similar studies in cases of hypersecretion, and here, too, found that now one, now another element of the secretory mechanism was at fault.

Bilin points out in conclusion the practical significance of the results obtained by his method, for they explain both the successes and the failures of the usual therapy; for instance, the use of oil as food, and of atropine is sometimes quite without effect upon hypersecretion because these substances act upon the chemical phase of secretion only and cannot be effective when the hypersecretion is due to increased reflex irritability. It is possible that more rational treatment for each individual case may be derived by following the author's method of analyzing the elements of gastric secretion.

## DECREASING THE RISK OF TONSILLECTOMY IN SEPTIC TONSIL.

THE profession represents jointly three conceptions in regard to the necessity for tonsillectomy. One is routine extirpation another extirpation on strict indication only, while the third involves doing away with the operation altogether. That deprivation of the tonsils causes symptoms *per se* has never been proven, and with our rapid advances in the knowledge of internal secretions we find no note of this sort in respect to these bodies. Extirpation of lymphoid structures can at most result in some compensatory hypertrophy elsewhere. Naturally, however, the organ must subserve some physiological purpose, perhaps, as often claimed, a part of the animal defense against microorganisms. This very familiarity with bacterial life, on the other hand, makes the tonsil oftentimes instead of a barrier a dangerous port of entry for germs.

At a recent meeting of the Berlin Laryngological Society (*Berliner klinische Wochenschrift,* February 17) Halle read a paper on decreasing the risk in tonsillectomy, which caused an extensive discussion. He opposes strongly routinism, and when removal seems strictly indicated varies the method with the case. He prefers West's operation for adults and Sluder's for children. Great care must be taken not to injure the soft palate. The most momentous dangers are operative and postoperative hemorrhage. In such cases we should never temporize, but grasp the bleeding point with artery forceps and use torsion. Ligation is never necessary. Hemorrhage occurs chiefly at one of three points, viz., the upper pole, in the middle of the wound, and on the porterior wall of the arcus palatoglossus, and the bleeding points should be sought here.

Senator, in discussing this paper, alluded to the lack of material which had been followed up for many years. Extirpation of septic tonsils is a comparatively new operation. Hölscher found that internists are in many cases advocates of tonsillectomy for their patients. Levy stated that recurrent peritonsillitis or quinzy was not an indication for complete tonsillectomy. Sobernheim dwelt on the newly established relationship between tonsillitis and nephritis. He would make chronic nephritis an indication for tonsillectomy if the tonsil was in a state of chronic infection. An exacerbation of the tonsil might lead to one in the kidney.

Wagener claimed that quinzy is not followed by rheumatoid infection, but as soon as the tonsil is removed we get no more peritonsillitis. West spoke of the digital method of enucleation, an old procedure recently revived by Matthews in the United States. Claus related a case in which the operator thereby infected his finger. Meyer stated that the finger method, which is intended to minimize the hemorrhage, is to be found in Celsus. West believes that bloody extirpation is more conservative in the end than any blunt procedure. He divides the posterior arch behind the tonsil, thus doing the most critical step first. He then detaches the lower pole and prolongs the incision upward to free the tonsil. The advantage claimed is that the clean incisions favor rapid and clean healing and prevent complications due to infection.

## SOME NEW ASPECTS OF PITUITARY DISEASE.

The progress that has been made during the past two years in the experimental anatomy, physiology, and pathology of the pituitary gland has stimulated clinical observations in this field to such an extent that the various symptoms and symptom complexes set forth by Cushing and his coworkers are recognized with increasing frequency and accuracy, new and interesting observations being thus added to the previous experimental work. In a recent number of the *American Journal of the Medical Sciences,* Cushing presents a short summary, embodying the more recent views as to the classification of the various clinical syndromes typical of hypophyseal disease, and instances a few cases characterized by mixed syndromes. These cases demonstrate quite clearly how disturbances of the anterior and posterior lobe functions (either hypo or hyper) may be associated in the same individual.

The posterior lobe, as has been shown, is probably the portion of the gland which gives rise to an external secretion which is discharged through the infundibular stalk into the cerebrospinal fluid. The anterior lobe, on the other hand, is the internal secretory portion of the gland and discharges its secretion into "the large sinusoidal blood channels which traverse it."

Among the causes of posterior lobe hypo-function are: experimental ablation of the lobe, obstruction of the infundibular stalk, tumors or any other pathological lesion which interferes with the discharge of its secretion. On the other hand hyperfunction of the pars posterior is attributed to functional disturbances and feeding with gland extracts.

Disease of the pars anterior seems also to be capable of causing hypo- and hyper-function, Frölich's syndrome being a type of the former while acromegaly is a type of the latter. In both of these syndromes there may be associated changes in function of the posterior lobe, heightened activity being often found with acromegaly and lowered activity with Frölich's type (dystrophia adiposogenitalis). Still other groups of cases show a hyposecretion of one lobe in combination with a hypersecretion of the other. Other instances are given, fewer in number, when a primary hypofunction of one lobe (whether due to immediate or distant cause) may be followed by hyperactivity of the other lobe and vice versa.

Clinically the type of symptoms in the various disturbances of each lobe of the gland may be summarized as follows: (1) Hyperactivity of the anterior lobe gives rise to skeletal overgrowth—possibly to hypertrichosis and certain cutaneous manifestations—in brief, acromegaly. (2) Hypoactivity of the anterior lobe is evidenced by preadolescent failure of development in the osseous system and secondary sexual characteristics, etc. (3) Hyperactivity of the posterior lobe causes lowered nutrition and a decrease in carbohydrate tolerance, moist skin, etc. (4) Hypoactivity of the posterior lobe leads to adiposity—higher carbohydrate tolerance, subnormal temperature, somnolence, dry skin, polyuria, polydipsia—in short, the opposite symptoms to the above.

Every clinician is probably familiar with one or another of these syndromes, but their association with one or another group of pituitary symptoms, either as a whole or in part, has not received sufficient attention and it is for that reason that Cushing's recent work is of interest particularly to clinicians.

Treatment of individual or combined syndromes, as evidenced by pituitary disease, has so far been limited to administration of extracts of the gland and surgical interference. Both of these methods are in their infancy and have met with success only in a limited and selected number of cases. The report of a larger number of cases and increased research are eagerly awaited.

### Prognosis of Chronic Nephritis.

The extreme variation in the duration of this affection—given by authors as "from six months to two or three decades"—makes the question of prognosis one of abounding interest. Tests for renal insufficiency are more or less untrustworthy. Of late years, however, these have been checked up by improvements in the technique of blood examinations for retained nitrogen. Folin's method makes it possible to make blood tests with but 5 to 10 c.c. of blood serum, whereas formerly tenfold this quantity was required. At a recent meeting of the Berlin Urological Society (*Berliner klinische Wochenschrift*, February 24), Strauss discusses the subject of residual nitrogen in the blood. In normal subjects this amounts to about 50 mgm., while in uremia it may rise to 250 mgm. When 150 mgms. are reached the prognosis becomes grave. On the other hand a figure between 50 and 75 has no significance. The figures at which a prognosis may not be hopeless are those between 75 and 150, the risk increasing with the amount. Discussion of this paper brought out the general belief that the best urinary tests to use for corroboratory purposes are the potassic iodide and sodium chloride methods.

## News of the Week.

**Medical Expert Testimony.**—The committee on medical expert testimony of the New York State Medical Society has caused to be introduced into both houses of the State Legislature a bill to amend the present judiciary law in relation to examining physicians, by adding the following paragraph: "Sec. 31. Examining Physicians.—In a criminal action or proceeding or in a special proceeding instituted by the State writ of habeas corpus or certiorari to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which, or the judge or justice before whom, the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses." This bill has been carefully drawn by an expert on constitutional law, who has taken into consideration the laws of all the other States, and it is his belief that it will stand the constitutional test. The committee of the State society, believing that the abuses of medical expert testimony have been and are shameful, hope that the medical profession of New York will endorse the bill and give it hearty support.

**Harvey Society Lecture.**—Prof. John Howland of Johns Hopkins University will lecture before the Harvey Society on Saturday evening, March 29, at 8.30 o'clock, at the New York Academy of Medicine on "The Scientific Basis for the Artificial Feeding of Infants."

**Mount Sinai Hospital.**—Through the generosity of Mr. Samuel Sachs and Mr. Harry Sachs of New York, Mount Sinai Hospital has received a gift of $125,000 for the support of free beds in the neurological department, in memory of Joseph and Sophie Sachs. The hospital has opened a new ward for children suffering from nervous diseases, and the men's and women's wards of the neurological division have been enlarged. One of the new buildings which the hospital is about to erect will be designed with especial reference to the requirements of a thoroughly equipped neurological institute.

**Convalescent Home.**—The directors of the Winifred Masterson Burke Relief Foundation announce that contracts aggregating more than $1,000,000 have been signed for the erection of the Home for Convalescents at White Plains, N. Y. Construction is to begin at once, and it is expected that the buildings will be completed in less than two years. The home will occupy a site comprising 60 acres of land, and the present plans call for the erection of eight buildings, which will accommodate 300 persons. Additional buildings will be erected as required.

**Lectures on Dermatology.**—The Governors of the New York Skin and Cancer Hospital announce a course of clinical lectures and demonstrations on the surgical diseases of the skin to be given by Dr. Bulkley in the Out-Patient Hall of the hospital on Wednesday afternoon from April 2 to May 7, at 4.15 o'clock, and to be followed by a lecture on the surgical treatment of malignant disease on May 14 by Dr. Bainbridge at the same place and time. Each lecture will be illustrated by cases, models, colored plates, photographs, etc., and the course will be free to members of the medical profession on presentation of their professional cards.

**Association of Orificial Surgeons.**—The spring clinic of the American Association of Orificial Surgeons will be held in the surgical amphitheater of the Hering Medical College, Chicago, from April 23 to 26, inclusive. Dr. E. H. Pratt and his assistants will operate on clinical patients, demonstrating the fundamental principles of orificial surgery as applied to the treatment of chronic diseases and an adjunct to major surgery in general.

**Department of Social Welfare.**—The New York Association for Improving the Condition of the Poor has received from Mrs. Elizabeth Milbank Anderson of New York a gift of $650,000 which makes possible the establishment by the association of a department of social welfare, to conduct investigations for the purpose of demonstrating the practicability of preventive and constructive measures. All of the munificent gift will be used for this sort of research work, none being applied to the relief of individual cases. A tentative program of some of the practical work to be undertaken includes a committee on public health and hygiene, which will control the public baths maintained by the association, cooperate with the city officials in endeavoring to popularize public bathing facilities and to make the floating baths sanitary, and conduct an educational campaign for the extermination of common disease carriers, such as the house fly and the roach. The committee on welfare of school children will make a scientific inquiry into the subject of ventilation of school buildings, support the work of serving hot lunches at cost in certain schools, and examine into the present system of medical inspection of school children, methods of cleaning school rooms, etc. The director of the new department has not yet been selected.

**City Death Rate.**—During the week ending March 15 the death rate in New York City was again slightly increased. The total number of deaths was 1,848 and the rate 17.94 per thousand of population, as compared with 1,602 and a rate of 16.15 for the same week of 1912. For the first 11 weeks of the year the death rate was 15.79 as against 15.68 for the corresponding period of last year.

**Personals.**—Dr. F. F. Wesbrook, Dean of the Medical Department of the University of Minnesota, has been appointed president of the University of British Columbia at Vancouver, and it is expected that he will take up his new duties during the coming spring.

Dr. E. U. Lewis of East Dubuque, Ill., was on March 10 elected mayor of the town.

Dr. Robert Wilson, Jr., was on March 15 re-elected Dean of the Medical College of the State of South Carolina, which recently became a State institution.

Dr. Harry H. Archer, surgeon in the New York Fire Department, on March 20 was presented the department medal for long and valorous service as medical officer. This is the first time in the history of the department that the medal has been given to a civilian.

**Investigate Spotted Fever.**—The United States Public Health Service has ordered Surgeon L. D. Fricks to Bitter Root Valley where he will study conditions and attempt to eradicate the spotted fevre tic.

**Walking Smallpox.**—According to Health Commissioner Lankester of St. Paul, Minn., "walking smallpox" is prevalent throughout the Northwest.

**Report on Friedmann Cure.**—The only authoritative report on the Friedmann tuberculosis cure so-called, which has been given to the public sounds rather tame after the vivid newspaper stories of "apparent cures" and "marked improvement one week after injection." Surgeon Blue of the Public Health Service issued the following statement in Public Health Reports of March 21: "On March 8 the Secretary of the Treasury on the recommendation of the Surgeon General of the Public Health Service, caused a board of medical officers to be detailed to make a thorough investigation of Dr. Friedmann's alleged cure for tuberculosis. These officers proceeded immediately to New York and arranged with Dr. Friedmann for demonstrations of his remedy upon persons suffering from tuberculosis. These demonstrations are being carried on in certain New York hospitals through the courtesy of their respective authorities, and will be continued until sufficient information has been obtained for the forming of an opinion as to the merits of the treatment. Dr. Friedmann has submitted to the board a culture of the bacteria which he states are used in his method of treatment. In addition to the observation of persons under treatment by Dr. Friedmann, the board of officers will make experiments to ascertain whether this culture is as Dr. Friedmann claims, harmless to warm-blooded animals. Considerable time will necessarily be required to carry out these investigations. The work will be carried out as rapidly as possible. In the meantime the public is informed of the inadvisability, in the great majority of cases, of traveling long distances in the hope of receiving the treatment, as those selected for demonstration purposes constitute only a small proportion of applicants. Certain statements purporting to be expressions of the board of officers of the Public Health Service carrying on the investigation have appeared in newspapers. These officers have expressed no opinion and will not be in a position to do so until the work has advanced sufficiently far to warrant some conclusion in regard to Dr. Friedmann's treatment." It is reported that Dr. Friedmann will shortly return to Germany.

**Sydenham Hospital.**—A gift of $100,000 from Mr. Isaac Guggenheim has been received by the directors of the Sydenham Hospital, New York, to be added to the building fund of the institution. Plans have been made for the erection of a six-story building to contain 200 beds, double the capacity of the present hospital, and for this the sum of $350,000 is required. The directors hope to raise this amount within the present year.

**Flower Hospital to Build.**—Plans have been filed for the erection of a new building for the Flower Hospital, New York, to be used exclusively for private patients. It will be situated on the southeast corner of Avenue A and Sixty-fourth street and will cost about $140,000. The building will have a façade of brick and limestone in the Georgian style, and will be equipped with every possible hospital appliance.

**Disease Decimating Indians.**—The Public Health Service in a recent report gives the results of an investigation of disease among the Indians which was authorized by Congress in 1909. Nearly 40,000 Indians on all the reservations were examined by the surgeons, who state that tuberculosis is prevalent and that 22 per cent. are victims of trachoma, hundreds being totally blind. They recommend education in personal hygiene, the construction of better houses, a visiting nurse system, and segregation of those suffering from trachoma.

**Gifts to Charities.**—By the will of the late Mr. C. H. De Silver of Brooklyn, N. Y., the Brooklyn Eye and Ear Hospital, the House of St. Giles the Cripple, Garden City, and the Home for Destitute Children, Brooklyn, receive bequests of $2,500 each.

**A Rash Assertion.**—Dr. Friedmann was shown yesterday a copy of the MEDICAL RECORD, in which Dr. Karl von Ruck of Asheville, N. C., raised the doubt that Dr. Friedmann's tubercle bacilli derived from the turtle might not always remain nontoxic, or avirulent. This is what Dr. Friedmann said in reply: "My culture contains live bacilli which are nonvirulent and which will remain nonvirulent. Once nonvirulent, always nonvirulent. There is nothing to make them virulent. You can't make an apple out of a pear, can you?"—*Sun.*

**The Late Dr. Kingman B. Page.**—At a recent meeting of the Medical Board of the People's Hospital, New York, the following resolutions were adopted: *Whereas,* Death has suddenly ceased the activities and affiliations in life of our late colleague, Kingman B. Page, M.D., be it *Resolved,* That in his untimely decease the Medical Board and Board of Directors and Allied Organizations of the People's Hospital in the City of New York have sustained a lasting personal and professional loss, and be it *Resolved,* That in his demise we feel the absence of one whose professional enthusiasm was a real inspiration, whose loyalty to the People's Hospital was a treasured example, whose devotion to the science and art of medicine was an elevating impulse and whose self-sacrifice in the service of

fellowman was a humanitarian principle, and be it *Resolved,* That a copy of these resolutions be spread upon the permanent records of the Medical Board of the People's Hospital in the City of New York, and that an engrossed rescript of them be forwarded to the bereaved family in token of sympathy and fellowship in sorrow and affliction.—Victor Cox Pedersen, Chairman of the Committee on Resolutions.

**The Late Dr. Archibald E. Isaacs.**—A special meeting of the Medical Board of the Beth Israel Hospital, called for the purpose of taking action on the death of Dr. Archibald E. Isaacs, was held at the hospital on March 14, 1913. The following resolutions were unanimously adopted: *Whereas,* Death has claimed and taken from us Dr. Archibald E. Isaacs, who, in the many years of our mutual contact has become endeared to us by reason of his sterling qualities as a man, his earnestness as a colleague, his devotion to his profession and his contributions to its progress, and *Whereas,* Dr. Archibald E. Isaacs has been taken from us at the height of a successful professional career, made so by his own energy and ability, just as he was about to realize the fruits of the self-sacrificing labor and efforts he gave to the cause of humanity, therefore be it *Resolved,* That we give expression to the feelings of heartfelt sorrow that overwhelm us on the occasion of his untimely death; we feel that by his departure in the prime of life and in his uncompleted career, the cause of humanity has lost an ardent advocate, medicine a brilliant devotee, and the Beth Israel Hospital an earnest and able worker, and be it further *Resolved,* That we extend our most sincere condolence to his sorrowing family in this, their sad affliction; their grief is great in the loss of a loving son and husband, and devoted father; may he live in their memory for his love and goodness, and in our memory for his deeds and accomplishments, and be it further *Resolved,* That a copy of these resolutions be spread on the minutes of this board, a copy be sent to the bereaved family, and copies be forwarded to the press for publication.—L. J. Ladinski, M.D., Acting Secretary; J. E. Reinthaler, M.D., President, Medical Board.

The Eastern Medical Society of New York at a recent meeting also adopted the following resolutions: *Whereas,* We have learned with deep sorrow of the death of our beloved member and former president, Dr. Archibald E. Isaacs, whose kind disposition and sterling qualities, and whose ability, earnestness, and devotion to duty have gained for him the regard, esteem, and affection of the members of the Eastern Medical Society, and *Whereas,* Dr. Archibald E. Isaacs was one of the founders and former president of the society, and as one of its active members, he has at all times given freely of his counsel, time, and efforts to promote the interests and welfare of the Eastern Medical Society, and *Whereas,* His professional ability and skill and his self-sacrificing service in behalf of the poor have earned for him a position of honor and distinction in the medical profession and have gained for him the love and esteem of the laity. Be it *Resolved,* That the society record the sentiment of its members that by the untimely death of Dr. Archibald E. Isaacs, a worthy, distinguished, and inspiring career has been cut short, the cause of humanity has lost an ardent champion, the medical profession an exemplary member, and the Eastern Medical Society an enthusiastic and earnest worker, and be it *Resolved,* That the society extend its sincere condolence to the sorrowing family in their loss of a loving son and husband and devoted father. And be it further *Resolved,* That a copy of these resolutions be spread on the minutes of the society and that a copy be sent to the bereaved family and the medical press.—Dr. L. J. Ladinski, Chairman of the Committee.

**Obituary Notes.**—Dr. Ira Van Gieson of this city died March 24 from interstitial nephritis, after an illness of several weeks at the age of 47 years. He was born in New York and received his medical degree from the College of Physicians and Surgeons in 1885. He was for a time instructor at the College and later was director of the Pathological Institute. He was well known as a pathologist and at the time of his death was connected with the research laboratory of the Board of Health. He was the son of Dr. Ransford E. Van Gieson of Brooklyn, who survives him.

Dr. P. B. Stewart of Chetek, Wis., a graduate of the University of Vermont, College of Medicine, Burlington, in 1898, died after a short illness on March 1, aged 45 years.

Dr. James Edward Blair of Burlington, N. J., a graduate of the University of Pennsylvania, Department of Medicine, in 1896, died in Philadelphia from tuberculosis, on March 8, aged 41 years.

Dr. Edgar Pearl Ward of St. Louis, Mo., a graduate of the Marion Sims College of Medicine, St. Louis, in 1894, formerly professor of embryology and obstetrics in the American Medical College, St. Louis, and a member of the St. Louis Medical Society, the Tri-State Medical Society, and the Academy of Medicine of Chicago, who had done considerable research work on tuberculosis, died at his home on February 22, aged 46 years.

Dr. John W. Leonard of St. Joseph, Mo., a graduate of the Medical College of Ohio, Cincinnati, in 1886, died on February 24, after a long illness, aged 50 years.

## Obituary.

### ALGERNON THOMAS BRISTOW, M.D.

BROOKLYN, NEW YORK.

Dr. A. T. Bristow, one of the leading surgeons of this city and editor of the *New York State Journal of Medicine,* died at his home on March 26, of septicemia following a punctured wound of the finger received during an operation. Dr. Bristow was born in Richmond, England, November 29, 1851, and was brought by his parents to this country in early childhood. He was a graduate in arts of Yale College in 1873, and in medicine of the College of Physicians and Surgeons, New York, in 1876. After graduation he began the practice of his profession in Brooklyn where he soon won an enviable reputation as a skilful surgeon and a learned and sympathetic physician.

Dr. Bristow was a member of the Kings County and the New York State Medical Societies, of the American Medical Association, of the American Surgical Association, of the New York Academy of Medicine, of the American Academy of Medicine, and of the Brooklyn Medical, Surgical, and Pathological Societies. He was attending surgeon to the Kings County, St. John's, and Long Island College Hospitals, and consulting surgeon to the Long Island State, Swedish, Coney Island, and Bushwick Hospitals.

# Correspondence.

## OUR LONDON LETTER.

(From Our Special Correspondent.)

DEFENCE OF RESEARCH—UNILATERAL RENAL LESIONS —CERVICAL RIBS—DEATHS FROM ELECTRICITY— OBITUARY.

London, March 7, 1913.

What do you think of a public lecture as a means of popularizing the defence of research? It does not look to me a promising subject, but the society devoted to this defence arranged for one by Dr. F. M. Sandwith who, with the aid of lantern slides, achieved success on Tuesday by comparing "Ancient and Modern Surgery." He started early, his first slide being a picture of the most ancient doctor of which tradition tells, physician to a Pharaoh of the fifth dynasty about 6,000 years ago. Then there were photographs of splints found in the Nubian deserts resembling those now in use, the fastenings being with the reef knots. Bandages, too, were folded as at the present day. Palm fibre served for the cotton wool and fine linen for gauze. Coming down to the sixteenth century, the lecturer spoke of Paré as a soldier-surgeon of the best type, who never arrogated to himself the power of healing, but wrote as to one of his cases, "I dressed his wounds, God cured him." Paré was also said to have discontinued the practice of pouring boiling oil into shot wounds, and to have introduced ligature of arteries instead of cauterizing the stump after amputations. Photographs were also shown of the old plan of pulley-reduction of dislocations. Paracelsus, said Dr. Sandwith, was a defender of research, urged his students to study patients and reject the idea that a pig and a man were alike inside, but to see by dissecting. Paracelsus had been called the medical Luther, as he burned the works of Galen, as Luther did the Papal bull. Calvin's persecution of Servetus was the next subject, followed by portraits of Vesalius, who advocated dissection; King Henry IV touching for the evil; Hunter, who wrote to Jenner when crossed in love, "Cheer up, man, forget her. I will employ you with hedgehogs," and of Sir J. Paget, who warned clerics not to interfere with vivisection and surgery lest the time might come when doctors might tell them things they ought to know. Now, remarked the lecturer, the arch enemy of the medical profession turns on the Church in Wales. He concluded with a comparison of operating theaters before and after Lister's work. The chairman, Mr. Stephen Paget, then appealed for help for the defence of Research Society. I hope he may have a response equal to his expectations.

"Unilateral Renal Lesions" was the title of a paper read on the 24th ult. at the Medical Society of London by Mr. Ralph Thompson. He had collected from the records of three hospitals 23 cases of "solitary kidney," out of 13,505 autopsies, all of which he said had been read through, no reliance being placed on indices. This commendable industry gives confidence to the accuracy of his statement of the facts. In only two cases was disease or mechanical injury found in a solitary kidney. Some cases of supposed single were found to be instances of double kidney. He was assured by Messrs. Dunn, Steward, and Rowlands that they had never seen a case of double ureter, although Dr. Rolleston had estimated such a condition as occurring in 1 per cent. Dr. Turnbull met it in 1 in 150 autopsies in the London Hospital. Mr. Thompson showed a specimen with aberrant vessels. Of injuries he found 19 to the left, 22 to the right, and only 3 to both kidneys. Of ascending inflammation there were 135 bilateral and 38 unilateral cases. Unilateral hydronephrosis was recorded in 52 cases on the left and 44 on the right side. Of hydronephrosis with granular kidney there were 3 bilateral and 7 unilateral, all on the left side. Attention was drawn to tuberculous peritonitis and other lesions which might cause pressure on the ureters or constrict them by fibrous bands. In one operation Mr. Thompson found such a band and divided it. The question had been raised as to the other kidney when nephrectomy was proposed for tuberculous disease. Mr. Thompson found at three hospitals the autopsies of renal tuberculosis were 37 unilateral to 74 bilateral; in the former the right was affected as 13, to the left 5. Pyelonephritis and bacilluria were more common on the right side. Anatomical conditions were mentioned as probably conducing to this.

Mr. T. Walker appreciated the facts brought forward as highly interesting and important. They had a two-fold aspect—clinical and pathological. The pathologist was pessimistic as he looked at the final stage of a disease. But Mr. Thompson's paper rather dealt with ante-mortem pathology. There was a mass of clinical surgical evidence that renal tuberculosis in its early stage was unilateral, and many cases therefore could be cured by nephrectomy at that stage.

The clinical section of the Royal Society of Medicine well sustains the reputation for vigorous work of the "old clinical" before the amalgamation. At the last meeting the material was as abundant as ever, and, indeed, some members say, much more. The subject was "Cervical Ribs," of which probably more cases were exhibited than any one had had the opportunity of seeing at one time. There were a dozen present. The discussion was opened by Dr. F. Wood-Jones by tracing the development of the ribless neck and loins to the perfection of the pelvic and pectoral limbs. This might be seen in the growth of the embryo in which an antagonism was manifested between aborted costal elements and a limb plexus. To pressure of nerve trunks was attributed atrophy of cervical ribs. The rapid growth of the brachial is seen in the anomalies occasioned by variations met with from the normal position. Thus, if the plexus is lower by one vertebra—a variation not very rare—the first thoracic rib may be badly developed, and give rise to the symptoms met with in connection with cervical ribs. Dr. Wood-Jones attributed the groove on the upper surface of the first rib to pressure by the first thoracic nerve. The symptoms of the cases, too, were to be accounted for by pressure—the sensory and muscular ones by that on the lowest cord of the plexus; the vascular ones being brought about by the resulting changes in the vessels of the arms. The symptoms come on late because the clavicle takes a lower slope as adolescence comes on, and more in adult life. This is more marked in women. As to treatment, operation was agreed by all to be the only means of cure, which it effects in about half the cases, the other half being much relieved. The method of operating, and other surgical points, were discussed by Drs. Sargent, S. A. H. Wilson, and F. Buzzard, and W. Thorburn.

Continuing his Goulotonian lectures at the Col-

lege of Physicians, Dr. Jex-Blake remarked on the small fraction of those struck by lightning who died and added that many apparently fatal cases were curable. Then he spoke of safeguards, enumerating many from Roman times to the present, which the people had believed in. It was curious in these days of vaccine therapy to notice that the Zulus and Kaffirs inoculated themselves with the blood of animals killed by lightning. Of more reasonable precautions the lecturer said windows, doors, and air currents should be avoided, and it was better to keep away from the fireplace, for if the chimney should be struck the contents would be blown out. In the open one should not go near wire, crowds of people or animals or isolated trees, especially the oak. Yet forests are but seldom struck. It is safer to lie down than stand; an umbrella should not be raised. Treatment was artificial respiration to be kept up until the reality of death had been proved by the onset of rigor. The lecturer thought the prone position best, though he admitted that many authorities preferred Sylvester's method. The important thing is to set to work without a moment's delay. This has always been insisted on, but equally important is it to continue the artificial respiration until it is quite certain that death has taken place. The onset of rigor mortis or the cooling of the body must be the evidence insisted on. In reference to the victims of electric shocks, the majority of these accidents occur in workshops or other places where skilled assistance is not present and the simplest plan must be immediately adopted while such assistance is being sought. Other possible modes of treatment were mentioned as having been tried but which should only be attempted by experts and their aid was seldom available and so far the records that had been published were not encouraging but rather pointed to the need of further investigation.

The Town Council of Cheltenham has resolved to open subscription for a fund to commemorate Dr. E. A. Wilson, who perished in the Scott Antarctic expedition. He was a native of the town, where his father, Dr. E. T. Wilson, is now the senior medical practitioner. Probably the memorial will in some form be associated with the local hospital.

Sir C. Colvin-Smith, M.D., K.C.B., K.H.S., died on March 1st in his eighty-fourth year. An Aberdeen graduate, he joined the Madras army in 1851. He was P. M. O. with the Indian contingent in the Egyptian campaign, present at Tel-el-Kebir, as well as the taking of Zaguzig the same day. He was the recipient of a good service pension, medal and clasp for the Burmese war, and for the Indian mutiny; also for the Egyptian campaign with Khedive's star and the order of the Osmanish.

Deputy Inspector-General George Saunders, M.D., C.B., died yesterday in his ninetieth year. He served in the Crimea and through the epidemic of fever in China in 1865, after which he was made a C.B. in recognition of his arduous labors.

Surgeon-General H. Skey Muir, C.B., late Army Medical Staff, died suddenly yesterday at the age of 71. He qualified at the R. C. S. in 1863.

Dr. E. Henderson, F.R.C.S., M.D. Edin., late surgeon to the General Hospital, Shanghai, and municipal medical officer and health officer there, has died here at the age of 72.

Dr. F. P. Weaver, J.P., who graduated with honors at the London University M.B. 1860, M.D. 1861, has died at the age of 79. He became M.R.C.P. in 1893.

## AUDI ALTERAM PARTEM.

To the Editor of the Medical Record:

Sir:—In a recent number of the Medical Record it is stated editorially that "The *Sun* of this city, a journal usually as well informed as it is fair-minded in matters medical, uses the Friedmann episode as a text for some hard sayings regarding the medical profession." Your criticism of the statement of the *Sun* regarding "the violent opposition of the medical press" I do not venture to answer because of your far better opportunity and owing to my reading not being extensive. Moreover, I have read no violent opposition statements in the Medical Record. You are certainly right in criticising all commercial methods. I would, however, ask the privilege to point out wherein you have, by reason of hasty reading probably, missed the meaning of a portion of the editorial article which you criticise. I have followed with interest the reported doings of Dr. Friedmann, whose claim I in nowise share. I noted that the public was in a state of ferment owing to press reports, dissatisfaction with the misconstrued opposition of the medical fraternity was heard and read everywhere, and it was as usual falsely attributed to professional jealousy. What more natural for one who has the interests of his colleagues at heart no less than that of suffering humanity to write the following, after defending the action of the medical societies whom he characterizes as "watch dogs of medical ethics":

"There is a tradition in medicine that very *properly* bars secret remedial methods from adoption by physicians. In the olden time, when medicine was practically an eleemosynary profession, temples were the clinics and priests the doctors. Hippocrates, the Father of Medicine, brought to its study and practice a wealth of good sense that inured to the benefit of patient and doctor alike, removing much of the existing mysticism while insisting upon the sacred character of the physician's calling. The beneficent influence of the 'Hippocratic oath' happily still sways the medical mind; and to this fact must be attributed the *seeming* indifference of the *true* physician to the interests of the patient when a question of ethics is involved."

If these words are "a slur upon the medical profession" I shall have to renew my study of the English language. Your strictures would have been quite warranted had three little words, which I have put in italics, been omitted from this dignified statement. If aught in this editorial can be construed into "hard sayings regarding the medical profession" it must be the first among hundreds I have read that does not express the sentiments of the following excerpt from one of the same writer's articles: "I shall continue as far as in me lies to further and protect the interests of the calling to which my whole life has been devoted, and I know no more effective way of accomplishing this aim than by unsigned editorials in a metropolitan newspaper having a large and discriminating clientele." Among the large number of medical editorials I have read in the *Sun* there is not one that does not breathe the spirit of these lines. Moreover, I have never read any defense or approval, much less advocacy, of the Friedmann serum in the *Sun*—nothing more than a plea for that fairness which appears about to be meted out.

Albert J. Wittson, M.D.

New York.

# Progress of Medical Science.

## Boston Medical and Surgical Journal.

*March* 13, 1913.

1. Ureteral Obstruction. B. Tenney.
2. The Conservation Treatment of Toxemia of Pregnancy with Convulsions. M. Green.
3. The Prevention of Foot Strain. R. B. Osgood.
4. Typhoid Vaccination. J. H. Young.
5. A Method of Dealing with the Peripheral Branches of the Fifth Cranial Nerve in Tic Douloureux. B. B. Cates.
6. A Collection of Facts, Ideas and Theories Relating to the Diverse Elements that Contribute to Success in Treatment of Joint Diseases. H. W. Marshall.
7. Ball-Valve Apparatus for the Administration of Salvarsan. L. L. Albert.

1. **Ureteral Obstruction.**—B. Tenney states that two symptoms appear in almost every condition which obstructs a ureter. One is pain between the point of obstruction and the tenth rib, on the obstructed side. The pain varies from a dull ache to agony and may produce anything from nervous irritability to vomiting and unconsciousness. This pain is sometimes increased by motion, as in stone cases, sometimes brought on by a change from the horizontal to the upright position, as in cases with ureteral kink, and sometimes appears without regard to either, as in pus or bleeding kidneys when the patient's pain comes and goes quickly with the passage of some fibrin mass through the ureter. Pain is present when there is back pressure in the kidney and may be associated with vomiting and fever, or it may be associated with vomiting and a normal temperature, or there may be subnormal temperature. The pain is said to radiate along the affected side down to the penis or vagina or leg, but the author's patients have had most of their pain in the back in the region of the twelfth rib. Radiation—unless pelvic pain be considered such—has been uncommon in the author's cases. Cases with pain on the unaffected side have been reported on good authority. The pain may be recent or of long standing. Pain is what the patient describes without examination. Tenderness may correspond in location or differ. When a patient is in pain from ureteral obstruction he is also tender over the affected kidney. When he is not in pain the tenderness may and often does disappear. In women the ureteral insertion, which can almost always be felt through the vagina, will be found sensitive if there is infection behind a point of obstruction, and often while the infection remains a bacteriuria. The other constant symptom is an alteration from the normal habits of urination. One may find increased frequency, urgency, incontinence, or the necessity of repeated attempts before the desire passes away. The presence of any one of these symptoms is a plain warning that something is wrong in the urinary tract—not necessarily in the kidney—and calls for further study.

2. **Conservative Treatment of Convulsions in Pregnancy.**—C. M. Green believes that it is better to postpone active surgical treatment of this condition for a reasonable time until by active eliminative measures the toxemic gravida is better prepared to withstand the added strain of delivery. He also believes that when the shock and truama of the *accouchement forcé* are hastily imposed upon a nervous system already reacting to toxemic irritation, the *coup de grâce* is not infrequently given to women who under more conservative treatment might recover. Moreover, under successfully applied eliminative therapeusis, the cervix and lower uterine segment often soften and expand to a degree that the woman speedily delivers herself under the usually exaggerated uterine contractions of the convulsive attack, or sufficiently to permit delivery without undue shock or injury. After the cervix is softened and somewhat dilated, it is not difficult to procure by digital dilatation a sufficient expansion for the delivery of the small, nonviable fetus, making use of embryotomy, if necessary; and when the fetus is developed to a viable age and is alive, the use of a suitable hydrostatic rubber bag very generally results in a dilatation sufficient to permit safe delivery by forceps or podalic version.

3. **Prevention of Foot Strain.**—R. B. Osgood notes that there exists no definite relationship between the height of an arch and the strength of a foot. The highest arches are often found in the least stable feet and the lowest among savage tribes whose foot-action is most perfect. Furthermore it is often difficult to determine from inspection and palpation alone the potentiality of strain in symptomless feet, and yet in a certain class of cases the ability to do this may be of considerable importance. The author, in conjunction with H. Legg, made a study of the comparative strength of the abductor and adductor groups of the foot, using for this purpose a simple apparatus. The average ratio of the adductor pull to the abductor pull in normal feet was found to be 10 to 8.2 in favor of the adductors. In pronated feet without symptoms the ratio was 10 to 10.5 in favor of the abductors. In pronated foot with symptoms it was 10 to 10.8 in favor of abductors. In cases of acute foot strain with valgus the ratio was 10 to 12.2 in favor of abductors. The author's experiments were carried out on nurses in the Massachusetts General Hospital. All the probationers were examined during their first few weeks of hospital life. They had explained to them the reasons for wearing during their working hours proper shoes. Lasts suitable to their individual needs with and without Thomas' heels were prescribed. Eighty-four of 133 taken chronologically and followed for at least a year were considered to need advice. The simple cases of strain and those who were believed to possess the potential of strain were thus treated. Among the students of Wellesley College a surprisingly small number are able to take a walk for a considerable distance without general and foot fatigue. There is a very general tendency to vicious shoes of the pointed type.

4. **Typhoid Vaccination.**—J. H. Young summarizes his study of this subject as follows: Typhoid vaccine as a prophylactic provides almost certain protection from typhoid fever. As a therapeutic agent in active typhoid it is still in the experimental stage. Not a sufficient number of cases have been studied to enable one to draw definite conclusions. The results so far obtained, however, are favorable. Typhoid vaccine as a therapeutic agent in chronic typhoid carriers, while it does not offer a certain cure, is the method of treatment that has given the best results.

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## New York Medical Journal.

*March* 15, 1913.

1. Acidosis. W. S. Gordon.
2. Blood and Sputum in Croupous Pneumonia. R. C. Rosenberger and C. V. Dorworth.
3. Connection of the Sexual Apparatus with the Ear, Nose and Throat. V. Dabney.
4. Disease of the Nasal Accessory Cavities. S. Oppenheimer.
5. Uric Acid Calculi. W. H. Porter.
6. Medical Efficiency. I. S. Wile.
7. Extrasystoles. S. Neuhoe.
8. The Specific Treatment of Pellagra. E. H. Martin.
9. Carbonated Baths. I. M. Groedel.
10. Tuberculosis. M. W. McDuffie.
11. Whooping Cough. S. R. Klein.
12. Appendicitis or Not Appendicitis? H. A. Schatz.

1. **Acidosis.**—W. S. Gordon, after reviewing the literature of this subject concludes that the processes concerned in producing acidosis are not thoroughly understood, and that they result from a disturbed metabolism due to various pathological conditions. While acetonemia may appear with carbohydrate starvation and disappear with a corresponding regulation of the diet, it does occur on a full carbohydrate diet. Even in the former case other preexisting factors may be operative. Excessive urea formation may precede the appearance of acetone. The gravity of the condition may be out of pro-

portion to the amount of acetone in the urine; and while a large number of cases of acetonemia are relieved, even when unrecognized and untreated, the toxemia is frequently of serious import. Its occurrence with alkaline and phosphatic urine should not be overlooked. It is evident, also, that the nausea, vomiting, and consequent abstinence from food which are often correctly supposed to cause acidosis may frequently be results instead of causes, and that, so far as symptoms and treatment are concerned, the toxemia should in such cases be regarded as a primary and not as a secondary or incidental disorder. Furthermore, it should not be forgotten that the symptoms of acidosis may be erroneously attributed to other morbid states. Especially in pregnancy should one be on the watch for a toxemia due directly to acetone and not accounted for by kidney involvement or the retention of urea. The importance of routine examinations of the urine is appparent, lest one be caught napping and find oneself confronted by a grave and unsuspected complication.

2. **Blood and Sputum in Lobar Pneumonia.**—R. C. Rosenberger and C. V. Dorworth conclude from their investigations that as the cultures were taken upon varying days from the time of onset of disease, it cannot be said that one would be more likely to find an organism at one time before the crisis than at another. The finding of an organism in a culture taken after the crisis or beginning of lysis is, in the authors' findings, rare. This finding is, however, possible. This is probably due to the development of "anti" substances during the growth of pneumococci, to the fact that symbiosis has ceased to exist, and to the fact that the organism dies out. In one series diagnosticated as lobar pneumonia organisms other than the pneumococcus were found in the blood. These other organisms include the staphylococcus, the streptococcus, and in one case an organism morphologically and culturally resembling *Bacillus typhosus*. It is possible that in some few cases the staphylococcus came from the skin. The prognosis of uncomplicated lobar pneumonia is not altered by obtaining the pneumococcus in culture. It is noted that in this series of cases most of the patients having the lesion on the left side recovered, while with one exception every patient having a lesion upon the right side died. This may have been, however, only a coincidence. Of the four cases coming from the alcoholic ward three died.

4. **Disease of the Nasal Accessory Cavities.**—S. Oppenheimer concludes that in the presence of chronic osseous changes, or the development of active eye symptoms or endocranial complications, radical operation is imperative—and one should not temporize with anything less. In combined frontal and ethmoidal suppuration, with more or less polypoid degenerative changes of the middle turbinal, external radical operation alone will effect a permanent cure. In frontal and maxillary sinusitis, where there is reason to believe that intercellular septa or irregular partitions exist within the sinus, it is impossible to obtain a satisfactory result other than with large external openings which will allow the thorough removal of such septa and the diseased mucous membrane. If, however, free drainage is present, and there are no signs of ill effect on the general health and only an occasional headache is complained of and the patient can be kept under observation, the risks of radical operation more than counterbalance the advantages. Obliteration of the infected cavity in its entirety is the ideal aimed at in radical procedures. If that is not accomplished a cavity remains that may again become infected, with a repetition of the former morbid process. Previous, therefore, to a radical operation, especially upon the frontal sinus, the patient should be informed of the possible final results of the operative procedure, that such an operation, like many others, is not always successful, and that it may be attended with serious consequences; and, finally, that it is not to be classed otherwise than as a serious major operation.

7. **Extrasystoles.**—S. Neuhof notes that the recognition of extrasystoles by ordinary clinical methods of examination is usually easy. Painful sensations in the chest accompanying extrasystoles are infrequent. Depending upon the underlying cause, patients with this type of arrhythmia may or may not require treatment. When the cardiac condition calls for digitalis or allied drugs, extrasystoles offer no contraindication to their use. When viewed as part of the clinical syndrome, extrasystoles may sometimes be of prognostic importance. Extrasystoles may be forerunners of more severe types of arrhythmia, particularly of tachycardia and auricular fibrillation.

10. **Treatment of Hopeless Cases of Tuberculosis.**—M. W. McDuffie presents a preliminary report of the work in Ward Q of the Metropolitan Hospital of New York City during the past year in the treatment of so-called hopeless cases of pulmonary tuberculosis. There were 500 patients under observation, and the following therapeutic agents were employed: Mercury succinimide, mercury bichloride, mercury biniodide, arsenic troxide, salvarsan, mineralization, oils, Sherman's vaccines (letter P), combined bacterial vaccines (Van Cott), Schafer's vaccine or filtrate, Schafer's tuberculosis vaccine or filtrate, Cocheu's vaccine or filtrate, Duncan's autotherapy filtrate, tuberculin by mouth, tuberculin injections, antistreptococcus serum, quinine, baptisia, formaldehyde solution, salicylic acid, salicin, sodium salicylate, guaiacol, and vanadium, a total of twenty-six different forms of treatment. The author concludes from his observations that the treatment depends to a marked degree upon the stage of the disease. The tubercle bacilli cause less trouble and are more easily eliminated than the complicating mixed infection. All stages have the mixed infection to contend with. Immunity should be produced during childhood by the avoidance of excesses and right living. In freeing the organism of the germs, guaiacol mixture intravenously has given the best results up to the present time. To make the soil unfavorable for the bacterial growth, tuberculin is of value in the early stages; it is of no value in the later stages. Vanadium, with which the author is now working, is regarded by the latter as a useful means of making the soil unfavorable for growth in the last stages and possibly in all stages.

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## Journal of the American Medical Association.

*March* 15, 1913.

1. Review of Five Hundred and Thirty-Four Operations on the Mammary Gland. J. B. Deaver.
2. Skiagraphy of the Seminal Ducts. W. T. Belfield.
3. Two Uncommon Esophageal Cases. A. Bassler.
4. The Prevention of Arteriosclerosis and Heart Disease in Otherwise Healthy Individuals Past Middle Life. L. F. Bishop.
5. Medical Practice in the Canal Zone. C. L. Overlander.
6. An Analysis of Four Hundred and Twenty-Six Cerebrospinal Fluids from Various Pathological Conditions. S. R. Blatteis and M. Lederer.
7. A New Preparalytic Symptom of Poliomyelitis. J. A. Colliver.
8. Some Features of the Theory and Practice of Medicine During the Seventeenth Century. A. S. M. Chisholm.
9. Differential Diagnosis and Treatment of Epidemic Cerebrospinal Meningitis. P. L. Dubois.
10. An Unusual Case of Leukemia. L. S. Milne.
11. A Combined Gravity and Syringe Method for the Intravenous Injection of Salvarsan. M. Abramovitz.
12. A Case of Pseudohermaphroditism. P. Oliver.
13. A New and Inexpensive Intratracheal Insufflation Outfit. M. Salzer.
14. Anuria—Perhaps Hysteric. F. J. Sheahan.
15. A New Tonsillectome. W. E. Schenck.
16. Irrigation of the Spinal Canal as a Preliminary to Introduction of Flexner's Antimenigitic Serum. D. I. Hirsch.

1. **The Surgery of Mammary Cancer.**—J. B. Deaver believes that the favorable time for operation is when there is a symptomless, freely movable lump in the breast, but patients are rarely seen at this stage. In the author's series both malignant and benign tumors occurred most

frequently in the upper and outer portions of the gland. Enlarged axillary lymph nodes do not necessarily mean malignancy; they are non-malignant in 6.5 per cent. of all cases. The absence of attachment to the pectoral fascia does not indicate non-involvement of the fascia, which, as well as the muscles and intramuscular lymphatics, may be involved before adhesion occurs. Distant metastases are probably accounted for by blood infection. The author has seen late apparent recurrence twenty years after removal of a cancerous breast. The *x*-ray has no place in the treatment of operable cancer, but is the only available measure in inoperable cases and in the prevention of a post-operative recurrence, which, from position or otherwise, cannot be further operated on. With the radical operation the average primary mortality is about 1 per cent. In the author's total of 534 cases, malignant and benign, there were only three deaths after operation. As regards cure, approximately one in five is permanently relieved of the disease by the radical operation, though the inability to secure reliable data makes even this percentage questionable. This percentage would probably be materially lessened if the patients with cases pronounced inoperable, whose names do not appear on hospital records, were included in the statistics. These results are highly disappointing unless compared with the results of past decades. When popular opinion demands immediate operation on the discovery of a lump in the breast; when physicians are taught to think of breast tumors in terms of operability; and when misguided humanitarianism no longer prompts the surgeon to attempt injudicious operations, the present lack of faith in the surgery of this disease will give way to a healthy optimism.

4. **Arteriosclerosis.**—L. F. Bishop urges the importance of the periodical examination of supposedly healthy persons past middle life. Persons with a tendency to circulatory disease should undergo regular courses of treatment such as those given in certain European health resorts. The author also counsels against the abuse of certain drugs, such as saline laxatives and mineral waters, which may upset the body metabolism. Castor oil is the best remedy for those threatened with amino-acid poisoning.

7. **A Preparalytic Symptom of Poliomyelitis.**—J. A. Colliver refers to what he regards as a new symptom in this condition. This symptom is a peculiar twitching, tremulous or convulsive movement of certain groups of muscles lasting from a few seconds to less than a minute. The amplitude of vibration is greater than a tremor, not so constant and long as a convulsion, and more regular than mere twitching, yet it has some elements of all of these. It usually affects a part or whole of one or more limbs, the face or jaw, but it may sometimes affect the whole body. The symptom may easily be overlooked in the beginning as it usually lasts less than a second and unless the patient is disturbed does not recur oftener than every hour or so. Later the duration of the spells lengthens to a few seconds, recurring also at shorter intervals. This condition is often accompanied by a peculiar cry similar to that of hydrocephalus. At times there is a slight convulsive movement, just like a chill, as mothers say, during which time the child is apparently unconscious with eyes set for a few seconds. This brief unconsciousness may occur without noticeable convulsive movements. The phenomenon resembles those found in light cases of strychnine poisoning except that the tetanic contractions are not general and do not last for a long time. This symptom seems to be similar to the infection neuroses described by neurologists, of which tetany and chorea are good examples. It is not unreasonable to suppose that the presence of the virus of poliomyelitis may bring about effects similar to those of chorea and tetany.

16. **Irrigation of Spinal Canal in Meningitis.**—D. J. Hirsch states that the mortality of cerebrospinal meningitis is still too high, and in view of the inaccessibility of the diplococci to the serum in some cases, he thinks that it would be advisable to modify Robb's procedure and irrigate in all cases, whether the fluid is purulent or not. The objects of irrigation are the removal of a large number of cocci and the preparation of the field for the reception of the curative serum, which would more than compensate for the loss of a few leucocytes. The technique is described as follows: Remove from 30 to 40 c.c. of fluid by lumbar puncture; then with a small syringe, using gentle pressure, introduce 30 c.c. of normal salt solution, 100° F., into the canal; allow this to return; repeat this three times in those cases in which the fluid is cloudy, and, in the purulent cases, repeat the procedure until the fluid returns clear. The canal should then be clear, and the serum better able to do its work. Two cases thus treated are reported, and the author thinks the treatment will be found of benefit in the treatment of meningitis.

## The Lancet.

*March* 8, 1913.

1. Peritoneal Adhesions (An Experimental Study). J. E. Adams.
2. The Surgery of the Thyroid Gland, with Special Reference to Exophthalmic Goiter. J. Berry.
3. Principles of Percussion and Auscultation. F. Müller.
4. The Blood in Cancer with Bone Metastases. G. R. Ward.
5. Fatal Hematemesis in a Case of Hepatic Syphilis. D. E. Core.
6. Case of Subcortical Cerebral Tumor, Tuberculous in Nature, Removed by Operation; Recovery. G. Hall.
7. The Treatment of Pulmonary Tuberculosis. N. D. Bardswell.

2. **Surgery of the Thyroid.**—J. Berry is of the opinion that exophthalmic goiter is a disease of which the treatment, whenever possible, should be carried out jointly by the physician and surgeon. He ventures to ask whether the time has not arrived when physicians should recognize that they can do little or nothing for its actual cure, but that they can do much to get the patients into a proper condition for operation. On the other hand, the surgeon should realize the value of medical treatment as a preliminary to surgical interference, and should remember that there are stages of the disease during which the patient should be entirely in the physician's hands. It is common to hear of patients, who might be much benefited by operation, being kept indefinitely under medical treatment in out-patient departments, or intermittently in the medical wards, before a surgeon is even asked to see them, and when he is called in it is often to some desperately bad case on which he is expected to operate immediately as a last resort. In summing up our certain knowledge as to the dangers and advantages of the operative treatment of Graves' disease, the author believes that one may say that operations upon cases of exophthalmic goiter are more dangerous than similar operations for most other kinds of goiter, but that the dangers may, however, be greatly reduced by careful attention to details, especially in the selection of cases for operation, and in the choice of the time at which the operation should be performed, in the preliminary treatment of the patient, in the methods of operating, and in the after-treatment. That much benefit nearly always follows operation is undoubted, and that cure does sometimes follow as a direct result of the operation, especially in early and slight cases, there can be equally little doubt. Even in really bad cases, in which operation must involve serious risk, so much improvement often results that operation should not be too lightly put aside.

3. **Percussion and Auscultation.**—F. Müller states that the normal lung responds on an average with the same low sound, if its fundamental tone is evoked by percussion, or by the stretching of inspiration, or by the voice. The fundamental tones of the cavities of the abdomen have a higher rate of vibration: the fundamental tone of the bronchi (bronchial breathing, consonant râles) takes its place between c′ and c″; and the metallic sound is characterized by the highest overtones. The normal heart sounds and the murmurs of valvular diseases show the

same pitch as vesicular breathing—*i.e.* between 60 and 160 waves in the second—and therefore it is sometimes very difficult to distinguish systolic vesicular breathing from valvular murmurs. Some physicians have tried to exaggerate the technical refinement of percussion and auscultation to artistic virtuosity, and to draw the keenest diagnostic conclusions from its application. These methods of examination are the object not so much of artistic skill, as of scientific understanding, and there is necessary first a solid scientific foundation and criticism. A comparison between the results of percussion and auscultation with the results of the Röntgen ray exploration or the necropsy finding often shows that one has to be very careful in drawing conclusions from the physical examination, and that this does not grant as conclusive proof concerning the conditions of the inner organs as many have imagined.

5. **Fatal Hematemesis in Hepatic Syphilis.**—D. E. Core reports a case which represents an important group of cases of hepatic syphilis, in which the disease resembles ordinary cirrhosis of the liver. The symptoms are usually those of pain in the right hypochondrium, with more or less gastric disturbances, occasional hematemesis, and ascites. Jaundice is rare in these cases of hepatic cirrhosis, and according to Hale White so also is ascites. On examination of the abdomen the liver and spleen are found to be enlarged and firm. Pain generally is a prominent symptom, owing to the perihepatitis and perisplenitis, and although in the case reported by the author there appears to have been a remarkable absence of this symptom, yet from the appearance post-mortem of the liver and spleen, which were unduly adherent to the diaphragm, some pain almost certainly must have been present at one time or another. The diagnoses of these cases rests on the preponderance of syphilis over alcohol in the history, and the relief of symptoms by antisyphilitic treatment. Rolleston has pointed out that the routine treatment of ordinary alcoholic cirrhosis consists of potassium idodide, and that cases recorded of cure in this disease are, in all probability, cases of syphilis of the liver. Two further points of interest in the author's case were, firstly, the absence of any blood in the stomach contents or upper part of the small intestine, and the absence of any bleeding point to be made out post-mortem. Death in this case was due to acute cerebral anemia, and it is probable that the patient made some sudden movement or exerted himself in some way so as to cause the acute symptoms that immediately preceded death without there being any fresh bleeding. The absence of any apparent breach in the gastric mucosa or enlarged esophageal veins is most likely due to the collapse that must have occurred in any such veins that may have existed; it is a matter of common knowledge that it is often exceedingly difficult to demonstrate post-mortem esophageal varices in subjects that have died from sudden and profuse hematemesis owing to the empty and collapsed condition

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## British Medical Journal.

*March* 8, 1913.

1. Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease: the Polygraph. F. W. Price.
2. Certain Physical Signs of Myocardial Involvement. T. Lewis.
3. Manifestations of a Healthy Heart. W. B. Thorne.
4. The Ventricular Rate in Complete Heart-block. A. E. Naish.
5. The Auricle in Mitral Stenosis. D. W. Samways.
6. Death by Electric Currents and by Lightning. A. J. Jex-Blake.

1. **Recent Advances in the Study of Heart Disease.**—F. W. Price subdivides all cases of irregularity, apart from comparatively rare exceptions, into five groups. They are: (1) What is called sinus irregularity, (2) irregularity due to what are called extra-systoles, (3) irregularity due to depressed conductivity, (4) irregularity due to the pulsus alternans, and (5) what may be called complete irregularity. Sinus irregularity is characterized by a variation in the length of the diastolic period of the different cardiac cycles, the systolic period remaining constant. By extra-systole is meant a premature contraction of the auricle, or of the ventricle, or of both auricle and ventricle together, while the fundamental or sinus rhythm is maintained. It is of very great importance to be able to recognize the presence of extra-systoles, because they constitute one of the most frequent causes of irregularity of the pulse, and they may be accompanied by subjective phenomena which cause the patient much distress and alarm. Digitalis should not be administered as a mere rule of thumb in all cases of cardiac failure. In any given case, whether there is mitral disease, aortic disease, or disease of the myocardium, one should determine whether auricular fibrillation is present or not. If fibrillation is present and is accompanied by a very rapid pulse, whatever the lesion in most cases, and especially in those patients with a history of rheumatism or chorea, one has a therapeutic agency of wonderful potency which can establish and maintain control of the heart rate. The administration of the drug is followed by a rapid fall in the pulse rate and a concomitant improvement in the general symptoms. Two exceptions are: (1) Cases of cardiosclerosis in which the degenerative change is so widespread that little healthy muscle remains: and (2) cases in which there is pyrexia. When pyrexia is present, apparently the response to digitalis is as a rule very slight, if at all, whether auricular fibrillation is present or not. It is well to begin with a dram of the tincture per day, or in urgent cases with even 1½ or 2 drams per day, and continue until there is nausea or vomiting, diarrhea, headache, an unduly slow pulse, or what is called "coupling of the beats." Coupling of the beats is a danger signal. One should either stop the drug for a few days or diminish the dose. Usually a reaction is obtained within a week, sometimes in a few days. Then the drug should be stopped until the symptoms have passed away. As a rule the patient relapses. The indication then is to find out what dose suits him best—that is, the dose sufficient to control the heart without producing toxic symptoms.

2. **Signs of Myocardial Involvement.**—T. Lewis emphasizes the fact that the development of heart block during the course of an acute rheumatic illness is an evidence of myocardial involvement, not necessarily limited to the auriculoventricular bundle, but almost certainly spreading to a greater or lesser extent beyond it. The sensitive tract, when implicated, is responsible for signs which, relative to the extent of the lesion, are far more conspicuous than those yielded by implication of the general mass of the ventricular muscle. The majority of the rheumatic illnesses end in recovery, and this is one of the chief difficulties in studying them. One is compelled largely to judge of the events which have occurred in milder attacks from the findings in those which are severe.

6. **Death by Electric Currents.**—A. J. Jex-Blake states that in the vast majority of cases death by electric currents is due to accident; but in Italy both suicide and murder by electricity have been attempted, the former with success. The death of human beings may be brought about by electric currents in several different ways. There is no doubt that it might be due to prolonged tetanus of the muscles, which could prevent the performance of respiratory movements, and so lead to death by asphyxia after some minutes. But the author is not able to find that it ever has come about in this way as a matter of fact, the victim always being able either to break the contact and interrupt the passage of the current for himself, or to call for help and get the contact broken by somebody else before asphyxia has occurred in this way. In man primary heart failure is undoubtedly the commonest mode of death by electric currents. The experiments on animals show that such deaths are due to fibrillation of the ventricles of the heart. This fibrillation has been seen occurring in the

hearts of two criminals electrocuted and examined immediately after death. Death by failure of the respiration while the heart continues to beat, brought about by nervous inhibition, or by failure of both heart and respiration together, is probably not common in man. Brief reference is made to the fact that a good many cases have been recorded in which the victim of an electric accident has died after a few days or weeks from complications (shock, gangrene, suppuration, exhaustion following extensive amputations) arising out of the injuries caused by the electric current.

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### Berliner klinische Wochenschrift.

*March 3, 1913.*

**Internal Secretions and the Nervous System.**—Münzer's serial article, one installment of which has already appeared in the MEDICAL RECORD, ends with the following summary: Both physiology and pathology teach us that the functions of the blood glands are intimately associated with the activity of the nervous system. It is probable that the products of the blood glands act solely upon the nervous system in producing their characteristic effects. We may generalize to the extent of stating that blood gland activity is expressed by nervous reaction. This does not imply that all nervous structures are uniformly influenced; for as far as we know there are preferential activities—on the one hand involving the brain and possibly the cord, and on the other the sympathetic. The multiglandular system, involving the combined action of the ductless glands, comes into direct relationship with the nervous system through the influence exerted by the internal secretions on the tonus of the sympathetic nerves. The secretion of an individual gland exerts a specific activity on a definite territory of the nervous system. As a consequence of this specificity, a classification may be built up in regard to the various activities of the secretions upon the various activities of the nervous system—sympathicotonic, spinotonic, polytonic. The assumption of a regulation of tonus of various secretions of the nervous system may lead to definite results from the therapeutic viewpoint.

**Statistics of Gastric Resection.**—Weil sums up the results of 157 operations of this sort performed within the past five and a half years. He concludes that as a palliative in cancer cases, the operation of resection is much more serviceable in cancer of the stomach than gastroenterostomy; that every case of positive recovery thus attained represents an actual advance; that despite the small proportion of recoveries, the number is large if we consider that 15,000 persons die annually in Germany of cancer of the stomach. A comparison of the author's figures in the Breslau Clinic with those of his predecessor show that the operative mortality has decreased; that the percentage of permanent cures is unaltered; and that the percentage of diagnostic cases operated upon not only does not increase but actually diminishes.

**The Active Principle in Biochemical Radiation Reaction.**—Schwarz sums up as follows: Thorium-X solution, which contains neither ozone nor hydrogen peroxide in demonstrable quantities—as shown by the starch-potassic iodide paper—causes after 24 hours an energetic cleavage of lutein and lecithin in egg yolk. Even highly concentrated solutions of hydrogen peroxide (which call forth an intensive browning of the test paper) do not after similar exposure cause such changes. Hence neither ozone nor hydrogen peroxide play any part in these thorium reactions. We know that $H_2O_2$ and various other substances (including lipoids and coloring matters) tend to destroy organic matter, but it does not appear to be justified to refer the peroxide action to Thorium-X or to assume that the latter manifests its activity through the content of $H_2O_2$.

### Deutsche medizinische Wochenschrift.

*February 27, 1913.*

**The Duodenal Catheter in the Study of Pylorospasm and the Action of Pancreatic Enzymes in the Nursling.**—Hess of the Public Health Laboratories, New York City, already well known in this field of research, sums up his finds and conclusions as follows: In children up to two years of age it is easy to introduce a simple Nelaton catheter (15 French) through the stomach into the duodenum. This so-called duodenal catheter makes it possible to distinguish between spasm and stenosis of the pylorus—necessarily under control of the fluoroscope and with the understanding that no organic disease is present. In the same classes of cases the catheter may be used for feeding, as in the case of adults. In spasmodic cases the introduction of the sound seems to relax the spastic state. Aside from this practical issue the duodenal catheter has an additional value for scientific research. Its introduction permits the immediate derivation of pancreas secretion, and makes it possible to demonstrate that all three pancreatic ferments, including the diastasic, are present during the first days of life. In children with pedatrophy there appears to be no deficiency in pancreatic secretion, although this condition is usually assumed to exist. In many of these children there is lowered secretion of gastric juice, while the thin, watery intestinal secretion contains all three pancreatic enzymes in full amount save for lipase, which is present only in small quantity. This condition has been variously known as "paralytic pancreas hypersecretion" or "pancreas succhorrhea." Further, in many cases of hypersecretion of the stomach, there is an increased secretion of the pancreas, which is evidently due solely to the excitation of pancreatic juice by the increased activity of the gastric juice. This process is purely physiological. By means of the duodenal sound we may also investigate icterus neonatorum; we may determine whether or not this state is due to congenital obliteration of bile ducts. The sterile gelatine capsule introduced with the catheter may be employed for the withdrawal of intestinal secretion for bacteriological investigation (dysentery, typhoid, etc.). In a single case of suspected typhoid the bacillary fluid was obtained in almost pure culture.

**Causation of Hirschsprung's Disease.**—Meyer sums up an article on this subject as follows: A seemingly sound infant aged 9 months, nourished on ordinary baker's milk, suddenly developed vomiting, constipation, and general malaise. It was then fed upon flour food, but after two weeks developed flour poisoning, in the course of which spasmophilia appeared. Soon afterwards there ensued, as shown by the *x*-ray, a persistent contraction of the sigmoid flexure. There resulted obstipation, gas distention, increased peristalsis, painful spasms in the abdomen and dilatation of the colon. This syndrome was construed as incipient Hirschsprung's disease. The treatment consisted of belladonna, tinct. opii, and Friedenthal's artificial mother's milk. The child recovered after some months.

**Relapsing Fever in Persia.**—Dschunkowsky relates the part played by a domestic "bug" in the causation of this affection. The reputation of this insect is so bad that it is reputed to kill certain aliens. The bugs lurk in plastered walls, from which they emerge to sting sleeping subjects. The local accidents are only itching and redness, yet in a few days fever develops, perhaps with fatal ending. This history can argue only for the existence of a harmless insect acting as a host or intermediary for a fatally infectious parasite. The author's study shows that the "bug" is not a true insect but a tic—the ornithodorus. The particular spirillum inoculated by this tic does not correspond to any known form, but is closely related to several pathogenic spirilla. The conditions of its parasitism have not yet been worked out.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

*The Life Annuity.*—It is necessary to understand the process of calculating the cost of annuities before it can be demonstrated how the single net premium for life insurance policies is divided into exact equivalent yearly payments to be made during life.

An annuity is a yearly payment of a certain sum of money to a designated person provided such person is alive at the time the payment falls due. If the payment is to be made every year until this person dies, it is termed a life annuity. For example: a life insurance company, in consideration of the payment to it of a specified amount, say $1,000, may enter into a contract to pay a designated annuitant, say $100 on a specified day in each year so long as the annuitant lives. The latter may draw his annuity for many years until he has received much more than the original cost, or he may die after he has collected only a single payment. In either case, the annuity terminates with the death of the annuitant. It naturally follows that a certain sum will purchase a larger income for a man sixty than for one thirty-five.

The net amount to be paid for an annuity in one sum is determined by a mathematical computation based upon the table of mortality, similar to that for ascertaining the net single premium. For example: what is the net amount which the hypothetical company, referred to in previous articles, should charge in a single sum for a life annuity of $1.00 to be paid to every one of the 81,822 members of the company, all at the age of thirty-five years, the first payment to be made immediately on the execution of the contract? The reader is reminded that 81,822 is the number of persons still living at age thirty-five, as given in the mortality table and adopted as the size of the membership of this company.

As each person of the company is to receive $1.00 immediately, it is plain that $81,822.00 will be required at once in order to pay the annuities due at the beginning of the first year.

According to the table, 732 annuitants will die during the first year after receiving but one payment. This leaves 81,090 persons living on the first day of the second year, each of whom should receive $1.00 on that day. The present worth of $81,090, according to the interest tables, at three and a half per cent. for one year, is $78,349.16, the sum which must be on hand in the beginning of the company to pay for the annuities in this group.

Consulting the table once more, it is seen that 74,985 persons will be living at the beginning of the tenth year at age forty-four, requiring the total payment on that day of $74,985. The present worth of this sum at three and a half per cent. for nine years is $55,016.49, the amount which the company must have on hand in the beginning to pay the annuities due on the first day of the tenth year.

Similarly, it is found that $3.00 will be required on the first day of the sixty-first year to pay the annuities of the last three members at age ninety-five, and that the present worth of this sum, payable sixty years hence, is $0.1269.

By working out the sums to be paid in each and every year from the mortality tables, it will be found that the total payments for the sixty-one years will amount to $2,641,518. Further, that the present worth of the sums to be paid out in each and every year will just reach $1,521,707.42. On dividing $1,521,707.42 by 81,822 it will be seen that $18.61 should be contributed by that number of persons at age thirty-five to create an annuity fund sufficient to pay each and every man $1.00 a year as long as he lives, provided the deaths occur as indicated in the mortality table and the funds earn three and a half per cent.

*The Net Annual Premium.*—It has been found that $18.61 paid down in one sum is the exact mathematical equivalent at age thirty-five of the payment of $1.00 at the beginning of each year during life. It has also been determined in a previous article, that the net single premium for $1,000 insurance at age thirty-five, paid in one sum in advance is $370.55. If then, $18.61 is the mathematical equivalent of $1.00 to be paid annually during life, $370.55 must be the mathematical equivalent of as many dollars to be paid during life as $18.61 is contained times in $370.55. The result of this division is $19.91. In other words, $19.91 paid at the beginning of each year during life, is the exact equivalent of the net single premium of $370.55 and is therefore the *net annual premium* of an ordinary life policy of $1,000 at age thirty-five.

It has been the object in this and the preceding articles to present a simple and lucid summary of the process of computing the premium. So far, only the net premium has been considered, so that the question of provision for expenses and contingencies still remains to be adjusted.

*Sufficiency of the Premium.*—It is imperative that a margin of safety be invariably and strictly maintained in adjusting the premiums. It must be taken for granted that the funds will earn more than the rate of interest assumed, never less; also that the mortality will not be greater than that indicated by the table. Experience for many years has demonstrated that the mortality will not exceed the tabular rate. Although the low interest rate and a lower mortality than the tabular rate calls for a higher premium than that required to meet exactly the requirements, this means no hardship to the policyholders as any excess will be returned to them. It would, on the other hand, mean disaster if the funds on hand were found to be insufficient to meet the later payments to the policyholders, an event which would almost surely happen if non-conservative investments were made to secure larger profits and a poor selection of risks resulted in a high mortality.

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**X-Ray Injuries Not an Accident.**—A writer in the *Augsburger Postzeitung* notes the case of an electrician who was employed for fifteen years in the *x*-ray room of an orthopedic clinic and had suffered from a chronic affection of the skin of the hands and face resulting from constant exposure to the rays. He was finally incapacitated, and applied to his trade union for the indemnity for accidental injury during employment. The union refused such indemnity, stating that the injury complained of was not due to any accident, but was really an occupational disease, not to be indemnified according to the terms of insurance. An appeal to the courts was decided in favor of the union's interpretation of the agreement.—*Zeitschrift für Versicherungs Medizin*, Vol. V, No. 12.

# Book Reviews.

Diseases of Women. By Thomas George Stevens, M.D., B.S. (Lond.); F.R.C.S. (Eng.); M.R.C.P. (Lond.), Obstetric Surgeon, with Charge of Out-Patients, St. Mary's Hospital, Paddington; Surgeon (Gynecological), the Hospital for Women, Soho Square; Physician to In-Patients, Queen Charlotte's Lying-In Hospital; Examiner to the Central Midwives Board. With 202 illustrations. Price $5.50. London: University of London Press; Hodder & Stoughton and Henry Frowde, 1913.

The author states that this book is the practical outcome of ten years' experience in teaching gynecology to students. The result, as expressed in this volume, is a certain success. The entire work, placed on a sound pathological basis as far as possible, is written in a careful style and the subjects are discussed in a simple, convincing manner. The chapter on Diagnosis shows, aside from the medical standpoint, a keen knowledge of human nature—a faculty so necessary in the clever physician. The Anatomy, at the best a stumbling-block to students, is made more interesting by excellent illustrations, as are the numerous operations. The directions for treatment are sane but conservative and up to date. Aside from its medical excellence, the book is published in a size convenient for use by students.

The Practice of Obstetrics. Designed for the Use of Students and Practitioners of Medicine. By J. Clifton Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell Medical College; Visiting Obstetrician to Bellevue Hospital, New York City; Surgeon to the Manhattan Maternity and Dispensary; Consulting Obstetrician to the New York Maternity and Jewish Hospitals. Fourth Edition, Revised, Twenty-second Thousand, with 1316 illustrations, including five colored plates and 36 figures, printed in colors. Price $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1913.

In this revision of the fourth edition of this work the entire text has been carefully reviewed and in some parts rewritten, as that on the pathology of the various subjects. The work is divided into ten parts and arranged under subheadings, so that one subject leads naturally to a more advanced and complicated one. Much new material has been added without appreciably increasing the size of the volume. In the chapters on the Physiology and Pathology of Pregnancy, the new notes on blood-pressure are clear but concise. So much has been promised and so much expected of vaccine therapy in the other branches of medicine that it is interesting to learn the author's attitude toward this treatment in the field of Obstetrics. He has used it persistently and over a length of time in the treatment of puerperal infection, but without success. A polyvalent serum, on the other hand, has given marked results. The volume abounds in good illustrations, which in themselves should be of great help and instruction to physicians and students who have not easy access to maternity hospitals and clinics. As a book for study and reference, it admirably fulfills its purpose.

A Laboratory Handbook for Dietetics. By Mary Swartz Rose, Ph.D. Assistant Professor, Department of Nutrition, Teachers' College, Columbia University. Price $1.10. New York: The Macmillan Company, 1912.

Although primarily designed to facilitate the work of the teacher and student in the Dietetic Laboratory, this little manual of 127 pages will also find a useful place in the armamentarium of the general practitioner. It does not aim to be a treatise upon the subject of nutrition, but it puts in easily accessible form the explanations involved in the calculation of food values and food requirements, and a consultation of its twenty-one reference tables will minimize the labor involved in the construction of dietaries without limiting dietary study to a few food materials. Thus, beside being a handbook for the student, it also serves as a guide to the physician and nurse in the practical preparation of the particular diet which is theoretically indicated. An admirable index enhances the value of the work.

Essai sur le Traitement des Cystites par l'Enfumage Iode. Par le Docteur Gaston Farnarier, de la Faculté de Médicine de Paris; ancien externe des Hopitaux de Marseille et de la Clinique des Maladies des Voies Urinaires, etc. Paris: Imprimerie de la Semaine Médicale, 1912.

The author gives a review of his predecessors' experiences with iodine in the genitourinary tract, the salient chemical features of the element, his technique of injecting the fumes into the urinary bladder, and the details of nineteen cystites thus treated. His technique of the procedure is quite simple. The iodine is generated in vapor form by heating iodoform in a glass flask and then injected through a catheter by means of Guyon syringe. Six acute cystites were cured in from four to twelve treatments, eight chronics were improved, three gave no result and two cases were exaggerated.

Diseases of the Skin. By Willmott Evans, M.D., B.S., B. Sc., F.R.C.S. Surgeon to the Royal Free Hospital, and Surgeon to the Skin Department, Royal Free Hospital; Senior Surgeon to the Hospital for Diseases of the Skin, Blackfriars. Thirty-two illustrations. Price $3.75. London: University of London Press, Hodder & Stoughton and Henry Frowde, 1913.

The author states that this book is intended as an introduction to the study of the diseases of the skin. The subject matter follows the usual order employed in such works, and it is written in such a simple, clear manner that it should prove a valuable aid to practitioners of dermatology, but especially to students. The chapter on eczema is unusually interesting, since the author has so grouped the various types of the disease that comparison is made without difficulty, and thus aids in the study of the subject. The illustrations are abundant, many of them being original, and add greatly to the value and interest of the work. The book is attractively bound, the print clear and the arrangement of paragraph and heading makes it convenient for reference.

Genitourinary Diseases and Syphilis. By Henry H. Morton, M.D.; Clinical Professor of Genitourinary Diseases in the Long Island College Hospital; Genitourinary Surgeon to the Long Island and Kings County Hospitals and the Polhemus Memorial Clinic; Consulting Genitourinary Surgeon to the Kings Park State Hospital and the Beth Israel Hospital of Newark; Member of the American Association of Genitourinary Surgeons; Member of the American Urological Association; Fellow of the New York Academy of Medicine. Illustrated with 275 half-tones and photoengravings and 18 full-page insert plates, 11 of which are in colors. Third edition, revised and enlarged. Price $6.00 net. Philadelphia: F. A. Davis Company, 1912.

The present edition of this work has been brought up to date by introduction of the essentials of recent syphilis therapy, the later advances in the technique of prostatectomy, the determination of the kidney function, pyelography, and the treatment of vesical neoplasms by the Oudin current. The author has the rare good judgment to select and ability to present in concise, readable form the vital parts of his subject, which should be included in the foundation of every general practitioner's education. Despite its general excellence, however, such a debatable statement as "gonorrhea is a *self-limited* disease——" cannot pass unchallenged, since its acceptance by an undiscerning reader might readily bring about calamitous results.

Food in Health and Disease. By Nathan S. Davis, Jr., A.M., M.D., Professor of the Principles and Practice of Medicine in Northwestern University Medical School; Physician to St. Luke's Hospital, Mercy Hospital and Westley Hospital, Chicago; Member American Medical Association, American Climatological Society, etc. Second edition. Price $3.50. Philadelphia: P. Blakiston's Son & Co., 1912.

The first edition of this work formed a volume in the series of Physiologic Therapeutics, edited by S. S. Cohen. In its present form it is much enlarged, has been thoroughly revised, and should receive a much wider recognition. The book is divided into two parts. The first part is devoted to general principles and diet in health, with chapters on: Food in Health, Uses of Water, Elements of Food, Quantity and Kind of Food Needed in Health, Animal Foods, Vegetable Foods, Beverages, Diet in Health, Infant Feeding, and Food as a Cause of Disease. The second part is on Diet in Disease, with chapters on Feeding the Sick, Diet in Infectious Diseases; in diseases of the stomach, intestines, liver, peritoneum, the respiratory organs, of the blood, of the circulatory system, of the kidneys, of the nervous system, of the skin, and in disorders of nutrition. The author calls special attention to the numerous studies of food and dietetics prosecuted under the auspices of the United States Department of Agriculture, and under the supervision of Professor Atwater. The volume is of much value, and should stimulate interest in a branch of therapeutics which has been greatly neglected.

# Society Reports.

## NEW YORK ACADEMY OF MEDICINE.

### SECTION ON SURGERY.

*Stated Meeting, Held February 7, 1913.*

DR. LUCIUS W. HOTCHKISS IN THE CHAIR.

**Ureterocele; Occlusion of Ureter and Hydronephrosis.**—Dr. LEO BUERGER presented drawings and *x*-ray plates illustrating the case of a man who entered the genito-urinary service of Mt. Sinai Hospital because of lumbar pain and pain radiating down the left lower extremity. He had been admitted to the genitourinary service because of pyuria that had persisted for almost a year. Cystoscopic examination revealed a remarkable picture. Occupying the site of the left ureter, there was a pyriform cystic mass about the size of the terminal phalanx of a middle finger, its base occupying the situation of the left ureter. At the summit, one could, with some difficulty, discern a flat slit-like opening that represented the occluded or compressed ureteral orifice. At a subsequent cystoscopic examination with the author's operating cystoscope and endoscopic knives, several incisions were made into this tumor mass, and finally the swelling was made to collapse. The ureter could then be plainly seen, lying in the center of redundant swollen mucous membrance. The telescope of the cystoscope was removed in order to introduce a catheter into this ureter, and, upon reinsertion of the telescope, the cystic mass was seen to have filled up again. It therefore was apparent that a simple incision would not suffice as a curative measure, and a large hole was punched into the cyst wall by means of the author's cystoscopic forceps. At a subsequent examination, two catheters were easily inserted into this ureter, argyrol was injected, and an enormous hydronephrosis was demonstrated by the *x*-ray plates.

Dr. FRANZ J. A. TOREK reported a case of ureterocele. He thought at first that he was dealing with the vas deferens and discovered that he was dealing with the ureter only after considerable dissecting.

**A Case of Imperforate Anus with Vaginal Outlet of the Rectum.**—Dr. LEO BUERGER presented a child sixteen months of age, on whom, three months previously, he had performed a plastic operation for imperforate anus, there being a small orifice in the posterior wall of the vagina near the posterior fornix. The child had been constipated ever since birth, because of the small size of the abnormal anal outlet. By means of a plastic operation, the rectum was freed from the posterior vaginal wall and implanted in the region of the dimple marking the normal situation of an anus. In presenting this case, in which the operative results were satisfactory, Dr. Buerger wished to point out the following facts: First, that in cases where the abnormal outlet was very small, the ampulla of the rectum became enormously dilated, indicating chronic coprostasis. It was for this reason that it would seem proper to operate upon children early because dilatation of the colon must undoubtedly occur if the chronic intestinal obstruction was allowed to persist for too long a time. Second, in treating such cases after operation, it did not seem wise to constipate the children as was proper in adults because stasis occurred, and the line of suture was stretched and torn by the expulsive effort of the child. Third, there was a tendency toward cicatricial contraction around the new formed anus which must be treated by dilatation, until such time when a plastic operation in the formation of a new sphincter arose.

Dr. FRANK C. YEOMANS said there was no sphincteric control because there were no muscular fibers present. With regard to the time for operation, none should be attempted until after the first year, when the patient could stand an operation. In those under this age there was danger from the loss of blood. Sphincteric fibers could be obtained from the gluteal muscles, dissecting the fibers out and bringing them down around the anus in a figure-of-eight fashion.

Dr. CHARLES R. L. PUTNAM reported an operation which he had performed upon a child seven years old. The coccygeus muscle was brought down into the median line where he had brought the anus out and fastened it. The result was that when the child wished to control his movements he drew in his coccyx; this was a bony action comparable to what was noted in some animals. In this case the child had but one movement a day.

Dr. LEO BUERGER emphasized the importance of dilating well the lower end of the rectum. If the child was constipated, one could see the pouch that was formed by the accumulated feces. He did not see what good purpose was obtained in giving these children some agent which would bind up the bowels for any length of time. Let them have their movements right along.

**A Case of Tuberculosis of the Kidney Diagnosticated by the Author's New Method.**—Dr. LEO BUERGER showed a case of tuberculosis of the kidney in which he had performed a nephrectomy, diagnosis having been in doubt because of the absence of tubercle bacilli in the urine, the absence of conclusive changes in the bladder mucosa, and the inability to obtain specimens from the affected side. By means of a new method, namely, the removal of pieces of edematous mucous membrane from the suspected ureteral orifice with consequent microscopic examination of the sections, a positive diagnosis of renal tuberculosis was made which was afterwards confirmed by the nephrectomy.

Dr. JOSEPH F. MCCARTHY said he had had experience with a similar forceps which he had used a great deal. He recently saw Dr. Squier do a resection of a growth in the vault of the bladder which had existed for about two months. There was much corrugation. The growth afterwards proved to be carcinomatous.

Dr. BENJAMIN S. BARRINGER said he was much interested in the method of diagnosing tuberculosis as described by Dr. Buerger, but it seemed to him that this was an extraordinary way for him to show his skill in the use of the cystoscope rather than a method of diagnosis of renal tuberculosis. The use of tuberculin would have settled the question, and should be used in cases of this sort.

Dr. HENRY DAWSON FURNISS believed that what Dr. Buerger had stated about these renal tuberculosis cases was correct and especially where there were other changes about the orifice of the ureter. There was one change in tuberculosis of the ureter which was nearly always present, a retraction into the bladder. He had now one patient under observation with this retraction and induration which could be readily felt. The urine was clear. There was frequency in urination and renal pain on one side. The radiograph showed that there were no cavities in the kidney. There was a marked reaction from tuberculin, but no tubercle bacilli could be found by any method employed; the injection of guinea pigs gave negative results.

Dr. LEO BUERGER said he was certain that the urine was coming down from the kidney, but the tubercle bacilli would not come down in sufficient number to enable him to make a diagnosis from an examination of the urine. They probably were there, but he could not detect them. He believed that in every case where there was edema miliary tubercles would be present. By removing a piece of the tissue as advocated one would be able to make an earlier diagnosis which was so important.

**Case of Arthroplasty (Murphy) for Ankylosis of the Knee.**—Dr. EDWIN BEER presented a woman who had had an old ankylosis of the knee joint. He was not at all enthusiastic over the operation, the typical Murphy one, nor over the results obtained in this instance. It was seven months since the operation and the results he did not consider at all brilliant. An interesting thing was that the joint between the patella and the femur was free, while in the one between the tibia and the femur, although freed of adhesions three times, they invariably recurred. Everything possible had been done for this patient, such as the employment of massage, hot air, Bier's hyperemia treatment, et cetera, with the result that the motion was increased but a few degrees. In looking over the report of Murphy's cases he had been very much surprised at his conclusions.

Dr. LUCIUS W. HOTCHKISS said that his experience with this operation had been very limited. He recalled one case of ankylosis of the elbow joint where the results from operation were not at all brilliant. He had his suspicion that the results obtained were caused by the extremely bad method employed. One could not, in his opinion, predicate just what the outcome was going to be.

**Traumatic Cyst of the Pancreas.**—Dr. CHARLES GOODMAN reported the case of a girl, fourteen years of age, who, nine weeks previous to admission to the hospital, had fallen from some rocks and struck on her abdomen. She was immediately taken to Fordham Hospital and an abdominal operation was performed. At the end of eight weeks she was sent home. Three days later she was seized with violent abdominal pain, rise of temperature, profuse and persistent vomiting which was not relieved at the end of two days, and she was, therefore, taken again to the hospital. She was a thin and emaciated girl. In the upper abdomen she presented an arching of the abdominal wall covering a smooth globular mass,

somewhat tympanitic on percussion; there was no rigidity. The pulse was 124, the temperature 95.5°. The leucocyte count was 10,000; the red blood cells 2,200,000. The examination of the urine was negative. The Cammidge reaction was negative. Upon opening the abdomen the stomach and greater omentum were found firmly adherent to the abdominal wall. After separating some of the adhesions they discovered a very large cystic tumor; in order to determine the point of selection of aspirating the tumor, they passed the stomach tube and found the stomach empty, contracted, and pushed up against the anterior wall where it was firmly adherent. Having outlined the greater curvature of the stomach, the cyst was aspirated, a large quantity of turbid fluid was evacuated, and a large degenerated clot removed from the bottom of the sac. There were some spots on the omentum which appeared like patches of necrosis. The sac seemed to be firmly and intimately connected with the posterior wall of the stomach. It was impossible to remove the sac wall and drainage was therefore introduced and the wound sutured. All was progressing favorably for four weeks when the patient was again seized with an attack of her former symptoms, and a swelling again made its appearance in the upper abdomen. Dr. Lewisohn, who had charge of the case during Dr. Goodman's absence, again operated and evacuated a large quantity of fluid from a pocket in the region of the lesser omentum. She improved rapidly and was discharged three weeks later. Since that time she had remained quite well and had gained considerably in weight. The stools were normal. The case was really one of so-called pseudo-pancreatic cyst, traumatic in origin. The tumor fluid was clear with some tryptolytic ferment, but no liptolytic nor amylolytic ferments were present. The cytology was negative except for leucocytes.

Dr. Leo Buerger asked how much time had elapsed between the receipt of the injury and the time of operation. It seemed to him that it was only through the pathological findings that they could assume that any cyst was of traumatic nature. They might find evidences of old organized blood, or the presence of blood pigment, or other evidences that one usually got. It should be remembered that clots might form secondarily in the cysts. However, one should look askance on this, for there might have been a secondary hemorrhage in the cyst.

Dr. George Franklin Shiels believed that traumatic cysts in most organs were unusually common; injury certainly had a causative influence. He said he had had some experience with traumatic cysts of the pancreas.

Dr. Lucius W. Hotchkiss said the classification of cysts of the pancreas was far from being an accurate one. He had had some experience with these cases and he believed that cysts of the pancreas were very difficult to describe pathologically. The results of the Cammidge reaction were rather variable.

Dr. Charles Goodman said that the patient was operated upon eight weeks after the injury. The patient fell down a hill and struck on a rock. There was a large and partly organized clot of blood in the cyst which was so common in pancreatic or peripancreatic cysts. He used large gauze packings, drainage tubes, et cetera, and he thought of the possibility of some interference with the healing process because of the presence of ferments.

**Case of Pulmonary Emphysema; Its Surgical Treatment.**—Dr. Charles Goodman presented this case. As a result of studies begun fifty years ago Freund of Berlin contended that the abnormal arrest in the development and the consequent shortening of the costal cartilages of the first rib, combined with the resultant narrowing of the superior strait of the chest, were important anatomical predisposing factors in tuberculous infection of the apex of the lung. This led him to advance the theory that a correction of this condition in flat chested people was a rational procedure, as both a prophylactic measure and a potent curative measure in the incipient stage of this disease. His pathological findings had been confirmed by other investigators. Freund also contended that the generally accepted theory that the barrel-shaped chest, in certain forms of emphysema, was caused by the condition of the lungs was not true. He claimed that the reverse was true and constantly asserted that the rigidity of the chest, due to pathological changes in the ribs and costal cartilages, was the forerunner of the changes in the lungs, which were associated with the symptom complex, recognized clinically as pulmonary emphysema.

The patient was forty-eight years of age and was admitted to the Montefiore Home after having drifted from one institution to another in efforts to get relief from his symptoms. He claimed that six years ago, after contracting a severe cold, his cough persisted, his dyspnea gradually became more marked, and his expectoration profuse. He was only able to walk a block or two without being obliged to rest to regain his breath. Walking up a flight of stairs was followed by a violent fit of explosive coughing, so that he would expectorate all over his customers. It was this disagreeable complication that made him a veritable nuisance. Through the courtesy of Dr. Wachsman he had the case transferred to the Beth Israel Hospital where he operated before the Clinical Congress. He removed a segment of the second, third, fourth, fifth, and sixth cartilages of the right side. In order to prevent a regeneration of the cartilages and a recurrence of the rigidity of the ribs, he interposed both the anterior and posterior layers of the perichondrium over the resected ends. This procedure was described by Dr. Goodman in his presentation of cases before the Section on Medicine in 1908. Since the operation the patient's chest expansion had increased from ¾ to 1½ inches and his vital capacity proportionately. His dyspnea was decidedly relieved and the cough and expectoration were very much diminished. His previously cyanotic appearance was now also absent. Of course the purpose of the operation was a purely mechanical one, viz., to correct the rigidity of the chest and give the remaining lung tissue an opportunity to functionate. It was important that these cases should be subjected to respiratory gymnastics in order to improve and restore the functional condition of the lungs as far as possible. The operation was indicated only in cases of emphysema with rigidity of the chest.

Dr. Lucius Hotchkiss asked Dr. Goodman if he had sufficient faith in the operation to recommend it in other than selected cases.

Dr. Charles Goodman replied that these patients took anesthesia very well. His first case he did under local anesthesia. He emphasized the importance of bringing over the cut surfaces the perichondrium to prevent the reformation of the cartilages. His second case was decidedly relieved by the operation in spite of the fact that the patient suffered so much from his asthmatic attacks that he took in four months seventy ounces of adrenalin chloride hypodermically to relieve him of his attacks. The first case was decidedly relieved in spite of the fact that he had all the complications that could be enumerated in emphysema.

**A New Method of Diagnosticating Renal Tuberculosis.**—Dr. Leo Buerger read a paper describing a new method of diagnosticating renal tuberculosis. Portions of the edematous mucous membrane about a suspected ureteral orifice were removed by means of a punch forceps through the author's cystoscope and submitted to pathological examination. The author's conclusions were the following: (1) It had been shown definitely that the excision of mucous membrane of the ureteric meatus might yield tissue containing miliary tubercles, at a time when no positive evidences of tuberculosis of the kidney were at one's disposal. (2) Miliary tubercles might be present in such tissue, although the only visual alterations of the mucous membrane were those which appeared as "edema" even to the trained eye. (3) Such excised pieces made a positive diagnosis possible when the ureteral catheter failed, when the guinea-pig inoculations were negative, when the urine was perfectly clear, and when the patient was presenting practically no symptoms. (4) Concentration and focalization of the tuberculous process at a ureteric meatus might occur early in the disease. (5) Such miliary tubercles might be found in the ureteric ostium even though the rest of the ureter was almost free from tuberculous change and when the pelvis of the kidney, too, was but slightly affected. (6) Cystoscopic biopsy should be performed on the ureteric orifice of the affected side in all cases of suspected renal tuberculosis where the ocular evidences were sufficient to warrant a suspicion of renal involvement; also whenever tubercle bacilli could not be demonstrated, and whenever positive evidences of the presence of a tuberculous process in the kidney were lacking.

**The Use of Needles in Fractures and Epiphyseal Separations.**—Dr. C. L. R. Putnam described this method which was illustrated by one case of fracture of the neck of the radius and another of separation of the lower epiphysis of the humerus which had been fastened with needles.

**Experimental Ligation of the Portal Vein and Remarks on the Treatment of Suppurative Pylephlebitis.**—Dr. Harold Neuhof read this paper. He stated that this report was from the pathological laboratory of Prof. Ludwig Pick, Krankenhaus Friedichshain, Berlin, who supervised the work and placed all the laboratory facilities

at his disposal. The fact that there was no surgery of the portal vein as yet developed depended upon the results of animal experimentation. Many observers had demonstrated that ligation of the portal vein led to death in a very short time—in one-half to two hours. As a result of these experiments the human portal vein had been considered a *noli me tangere*. Although the portal vein had been more or less completely ligated for accidental injury in a very few instances, a deliberately planned ligation of the vein had never been practised. The author believed that of the diseases involving the portal vein, suppurative pylephlebitis was a condition for the treatment of which a knowledge of portal vein ligation was at present indicated. With this in view the present study was made. In order to determine if animals could live after any form of portal vein occlusion, it seemed desirable to ascertain the cause of death after complete occlusion. In several successive experiments, the portal vein was completely tied off and death followed in a short time and in a surprisingly uniform manner. Respiration became superficial and accelerated. Considerable abdominal distention developed. The pulse was generally slow and compressible. In those animals recovering consciousness no pronounced weakness of the lower extremities was noticeable. Death was ushered in by generalized convulsions. Post-mortem examination revealed moderate distention of the stomach and enormous distention of the small intestine. The latter was deeply cyanotic; the intestinal wall was intensely edematous and firm, and showed numerous larger and smaller submucous hemorrhages. The lumen contained some blood. The spleen was enlarged to two or three times its normal size and was plum-colored. The organ was very firm, its capsule tense, and there were extensive subcapsular hemorrhages. The remaining viscera were somewhat anemic but not blanched. The intense acute engorgement of the intestinal tract and the extreme intestinal distention had been found to be the cause of death both in human beings and in animal experimentation carried out for various purposes, and it was now generally held that death in such instances was due to shock. It was therefore logical to conclude that death from complete ligation of the portal vein was due to shock. The next question which arose was whether death was found to follow so promptly upon portal vein ligation when the ligations were made at different levels. It was first demonstrated by Solowieff that dogs could survive occlusion of the portal vein if the branches were ligated at different times. He ligated the superior mesenteric vein at the first operation; the gastrosplenic vein a few days later, and, finally, the portal vein above the gastrosplenic. Some of the animals thus operated upon lived weeks and even months after the operation. Dr. Neuhof repeated Solowieff's experiment and could confirm his results. After citing several of these experiments, he said that it was evident that the results of portal vein ligation hinged largely upon the establishment of a collateral circulation. Attempts had been made to establish a collateral circulation experimentally by means of omentopexy and then to ligate the portal vein at a subsequent operation and occasional successes by this procedure had been reported. The method employed for this purpose was not practical in human beings and hence the author determined to attempt complete ligation of the portal vein by several operations directed at the vein itself, to ascertain if dogs would live under such circumstances, and if a definite type of collateral circulation would regularly develop. The plan was to moderately narrow the lumen of the portal vein at the first operation; at the second operation several days later to place a ligature that would further encroach upon the lumen; and, finally, to completely ligate the lumen at the third or fourth operation, depending upon the behavior of the intestine when the vein was provisionally clamped off. This general plan was successfully carried out in several instances, the details of which Dr. Neuhof described. The experiment established the fact that complete occlusion of the main trunk of the portal vein was experimentally feasible provided such occlusion was gradually induced during a period of several days. An efficient collateral circulation developed chiefly in the gastrohepatic omentum. These experiments established two facts, namely, that the collateral circulation developed with great rapidity, and that the collateral circulation in the gastrohepatic omentum was the one that regularly developed. In regard to the significance of the findings together with clinical observations in respect to the treatment of suppurative pylephlebitis, Dr. Neuhof said that as it was difficult to foresee any other than a fatal outcome from this affection, any procedure, no matter how radical, that offered a possibility of cure should be advocated. He therefore suggested ligation of the portal vein. This procedure was especially to be recommended in those cases which were not rapidly fatal. Even involvement of the liver was not necessarily a contraindication. The details of the operation could be developed by experience alone. In cases of pylephlebitis, which had existed for some time and in which the collateral circulation had had an opportunity to develop, immediate ligation would be the operation of choice. Whatever the operation of occlusion practised upon the portal vein, it should be combined with an omentopexy. This additional procedure was advocated because it might prove a valuable aid to the collateral circulation that had already developed at the time of the operation.

**Specimens of Tuberculosis of the Kidney.**—Dr. Marcus I. Blank presente dtwo specimens of renal tuberculosis. In both cases there was a history of cystitis. The specimens were but a little larger than the normal kidney.

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SECTION ON MEDICINE.

*Stated Meeting, Held February 18, 1913.*

Dr. Linsey R. Williams in the Chair.

**Artificial Pneumothorax: Its Indications and Contraindications.**—Dr. S. Adolphus Knopf read this paper. He defined artificial pneumothorax as an operation which consisted in filling the affected side of the tuberculous chest with sterilized atmospheric air or some gas, oxygen or nitrogen, for therapeutic purposes. Experience had shown that by collapsing and compressing the affected lung the production and absorption of toxines resulting from mixed infection were greatly diminished. When the affected lung was put at rest there was, concomitant with the diminution and total disappearance of the mixed infection, a constitutional improvement. The gas which had been found preferable for this purpose was nitrogen. Dr. Knopf said that his personal experience with this method was still limited, but what he had seen, heard, and done himself, together with the perusal of the literature at his disposal, enabled him to make the following statement concerning the indications for the production of artificial pneumothorax: 1. Artificial pneumothorax was indicated in all such cases as had not improved under ordinary hygienic, dietetic, climatic, and symptomatic treatment, such cases, as a rule, being moderately or far advanced. 2. It was indicated in these earlier cases in which there was no improvement because of mixed infection, or lack of recuperating powers, or when for inexplicable causes the condition remained stationary or the progress was particularly slow. 3. It was indicated in all rapidly progressing cases, whether treated in institutions or at home, and in no matter what climate. 4. It was indicated for all patients of the moderately or far advanced type who were discontented and felt that not enough was being done for them. 5. It was indicated in uncontrollable hemorrhage or chronic sanguine expectoration. Dr. Knopf stated emphatically that bilateral involvement, if one lung was considerably and the other one much less involved, was not a contraindication to the production of artificial pneumothorax. Where the disease had existed for any length of time it was seldom limited to one side. All the cases which he had seen operated upon or had operated upon himself had had bilateral lesions, and, so far as the immediate symptomatic improvement was concerned, everyone of them showed gratifying results. Casts and albuminuria were not necessarily a contraindication, but one must be guided by the general condition of the patient. Some authorities considered a basal lesion of the less affected side as a contraindication, but, in the opinion of Dr. Lapham, who had perhaps had a larger experience with this method than any other physician in the United States, this condition was not an absolute contraindication, and the production of artificial pneumothorax was permissible because of the relief which it gave the patient. The contraindications to the production of artificial pneumothorax were (1) an extensive involvement of both lungs, (2) so much cavitation that there was danger of the needle entering a cavity, (3) myocarditis, other serious cardiac complications, or serious renal complications, (4) any pulmonary tuberculosis complicated by a constitutional disease which in itself was sufficient to inhibit all possible chances of recovery, (5) when the patient was too apprehensive and strongly objected to the performance of the operation. That artificial pneumothorax was a valuable adjuvant in the treatment of pulmonary tuberculosis was now an established fact, yet in view of the possibility of an accident every practitioner should protect himself by pro-

curing the written consent of the patient, parent, or guardian, before resorting to this operation. There were various accidents which might occur, such as air, embolism, cardiac or pleuritic shock resulting in failure of respiration, spasm of the glottis, aphonia, and inability to cough. Hemorrhage or subsequent neuritis might also occur as the result of injury to a blood vessel or nerve. Pleurisy with effusion had been reported in a number of cases from artificial pneumothorax. Emphysema was also an occasional complication. Weiss had reported a case of fatal pneumonia in the other lung notwithstanding that the nitrogen was withdrawn. Dr. Knopf believed that the technique of the operation could be improved. He stated that up to a year ago he had been very skeptical about the immediate as well as the ulterior results of artificial pneumothorax, but what he had learned during the past months concerning this procedure had convinced him that artificial pneumothorax would often help when all other means had failed; however, he was not such an enthusiast as to consider it a cure all. He felt that gratitude was due the pioneers in this field for having given them a means of lessening the sufferings of tuberculous invalids, rendering them comfortable and free from many of the distressing symptoms, and in not a few instances bringing about an arrest of the disease.

**Artificial Pneumothorax: Its Technique and Results**—Dr. Mary E. Lapham of Highlands, N. C., read this paper. She stated that when a tuberculous lung was well compressed by filling the pleural cavity with nitrogen the distention of the cavity was shown by the bulging of the ribs, by the rotary breathing as if the other half of the thorax moved around a fixed point, and by the deep hollow resonance which often extended well over on the other side. This empty space was obtained at the expense of the lung which was driven up into the smallest bulk possible and held there like a dried sponge, immobile and incapable of expansion. As the lung became smaller and smaller the râles disappeared and the breath sounds became suppressed or assumed a metallic character finally changing to the sound of a drop falling into a metallic space or to a sharp metallic clink. To all intents and purposes the lung was not there, and while it was held firmly compressed connective tissue infiltration converted the tuberculous lesion into clean healthy scars. In such a recovery there was nothing to cause a relapse. There were no tubercle bacilli threatening resumption of activities. It seemed unlikely that any portion of the lung that had been destroyed could be replaced, and yet after reexpansion normal resonance and breath sounds appeared in lungs in which before compression nothing but râles and altered breath sounds could be heard. It seemed to be proven beyond question that compression of the lung did not injure the normal portions and that the diseased portions were singularly benefited. The clinical results were no less marked than the physical signs. As the pressure of the nitrogen crowded the lung upward, the decomposing masses were forced out through the mouth so that at first there might be pain, higher temperature, increased coughing, and expectoration. After about a year it was safe to allow the lung to expand and to resume its functions. Balboni said, "It is absolutely essential for the success of the treatment that the pneumothorax be maintained of such a volume and tension so as to squeeze out and practically dry the lung of all secretions." The maintenance of this volume and tension was the keynote to success and was therefore the main point of technique discussed in this paper. If dulness and altered breath sounds persisted over any part of the lung adhesions were preventing its compression. In using pressure to break up these adhesions the sudden application of too much force was to be avoided. Many cases reported as failures because of empyema, or pulmonary fistulæ, or tension pneumothorax, might be explained in this way. Later on the condition of the other lung might forbid too much nitrogen in the pleural cavity. Too much intrathoracic pressure impeded the return circulation and threatened stasis of the gastric intestinal circulation which might cause insomnia, anorexia, cardiac distress, neurasthenia, hysteria, and a host of other troubles. The other lung might become so congested as to cause wet râles and frothy sputum and this edematous infiltration must be relieved by reducing the intrathoracic pressure or broncho-pneumonia might result. The other lung needed constant examinations to detect the first signs of an edematous infiltration. Chilling and too much exercise must be carefully avoided until it is certain that the other lung was not concealing a hidden, deep lesion, or peribronchitic infiltration which did not manifest itself by physical signs until too late. If insufficient pressure to produce a breaking up of the adhesions around a cavity was applied our efforts were lost and nothing was accomplished. To keep up enough pressure to extend the resonance without injuring the patient was the problem. In these cases they had found the daily estimate of what was needed and the daily injection of enough nitrogen to meet these needs was the most satisfactory way of overcoming the difficulties. As the nitrogen was absorbed and the dulness returned, it was replaced by the resonance of nitrogen and in this way they had succeeded with infinite patience and time in compressing the lung and breaking up adhesions that seemed invincible. A fine hypodermoclysis needle was preferable to a large needle in these cases. In severe bilateral cases with great general exhaustion and poor condition of the heart and other lung, the use of oxygen had been found of great benefit. When nitrogen caused dyspnea and cardiac distress, oxygen might give the same relief that an intubation tube did to a child struggling for breath. After the insertion of the tube the use of oxygen promised to extend the usefulness of the method to cases too difficult for nitrogen because it had a tonic strengthening influence instead of the depressing one of nitrogen. As Dr. Knopf had said most of the accidents had occurred after the first injection of nitrogen and for this reason they had been laboring during the past few months toward bringing about a safe method for a permanent opening into the pleural cavity and had sought the best surgical council that they could obtain. With Dr. Thomas A. Smith's guidance and cooperation in New York and their continued experimentation in Highlands, Dr. Knopf and Dr. Lapham hoped soon to be able to report progress.

Dr. Samuel Lloyd said that during the past fifteen or eighteen years he had been experimenting in lung surgery and he was glad to hear that men on the medical side were willing to accept operative surgery in unilateral lung disease. They had met with many difficulties in lung surgery, for many years believing that the pleural cavity could not be entered except in the presence of positive pressure apparatus. Dr. Lloyd said that during the past fifteen or eighteen years he had been experimenting with cases in which a single lung was involved, trying the possibility of opening the pleural cavity without any pressure apparatus, or apparatus of any kind. The lung was approachable and could be treated without any special apparatus; the cavities could be opened and applications made from the outside. The sooner they recognized this possibility, the better. Dr. Meyer's warning regarding the possibility of cerebral embolism occurring in these operations scared many off. Six years ago a patient on whom they had produced an artificial pneumothorax became so distressed that they did not believe he would be able to get off the table. The keystone of the arch in the treatment of these cases was the use of the manometer. No distinction had been made between left and right-sided tuberculosis. Relatively speaking the heart was endangered when the tuberculosis was on the left side because of a dislocation of that organ and a twisting of the basic vessels. One should make a distinction between the two sides and be more cautious when operating on the left than on the right side. When nitrogen was introduced into the human chest at 70° F. it soon became 98°, 99°, or 100°, and in febrile cases 102° or 103°. If one injected 900 c.c. of the gas at 70°, the temperature soon rose to 100°, a difference of 30°. If one read the figures of the Robinson apparatus and with the employment of the Floyd needle, 900 c.c. of nitrogen gas introduced into the chest at 70° soon rose to 100° in the chest cavity. Dr. Lloyd thought that it was a wise precaution in all cases, especially in the young, to obtain a written consent for the operation. It should never be performed on a minor without such a consent, which would protect one if a case was brought to a court of law.

Dr. Mary E. Lapham believed that the right sided cases of tuberculosis gave more trouble than the left sided cases because of the liver disturbances which might follow.

The following were contributions from the medical wards of the Post-Graduate Hospital.

**An Intensive Study of the Prevalence and Distribution of Pellagra.**—Dr. J. F. Siler and Dr. P. E. Garrison presented this communication which was read by Dr. Garrison. Pellagra was a general disease characterized by the appearance of symmetrical lesions of the skin, usually occurring first of all on the dorsal surfaces of the hands and often confined to those surfaces. This characteristic manifestation was often preceded by more or less indefinite gastrointestinal disturbances and was nearly always accompanied by more or less severe stomatitis and enteritis with salivation and diarrhea. The immediate attack might result in death, but recovery from it was the rule, with recurrence the following year. It was largely a warm

weather disease and usually disappeared in the winter. Repeated annual attacks led to physical and mental deterioration, and as a result any latent tendency to insanity was likely to develop into serious mental disorder necessitating institutional care. Pellagra was very largely, but not exclusively, a disease of the poorly nourished. The disease was now widely prevalent in the southern United States, and a number of cases had been recognized in Pennsylvania, Rhode Island, and Illinois, the majority among the inmates of State charitable institutions. Last spring the New York Post-Graduate Medical School appointed a commission, financed by Colonel Thompson of New York and Mr. McFadden of Philadelphia, to study pellagra as it existed in the Southern States. The problem immediately before the commission in all its work was the etiology of pellagra and not its symptomatology or therapeutics, except as these subjects might throw light upon the essential nature of the disease. Accepting 280 as the minimum number of cases they had in Spartanburg County, S. C., in 1912, a minimum morbidity rate for the population as a whole of 0.35 per cent. or 35 cases of pellagra for each 10,000 of the population. Figures were presented which seemed to indicate that while congestion of population might play a part in the prevalence of the disease, it alone did not explain the marked inequality of distribution between the mill villages and the strictly rural communities. There was a strikingly excessive prevalence in cotton mill villages, and a tendency to greater prevalence in the more densely populated rural districts. The prevalence in the purely urban population about equalled that of the highest prevalence in rural districts. In Spartanburg County there were 257 cases of pellagra among 57,055 whites, or at the rate of 45 per 10,000, and 25 cases among 26,410 negroes, or at the rate of 9.5 per 10,000. In other words, while whites were present in the population in the proportion of two whites to one negro, there were ten white pellagrins to one negro pellagrin. However, the mill-village population, which appeared to show a marked excess of pellagra, was almost exclusively white. Comparing the white population outside of the mill villages and the negro population, the rates of prevalence per 10,000 for whites and negroes were 25 and 9.5. In other words, the disease appeared to be almost three times as prevalent among whites as among negroes living under similar conditions. Pellagra appeared three times more frequently among females than among males. There was a strikingly excessive rate among females between the ages of twenty and forty-five. One hundred and forty-two, or 64 per cent., gave housework as their principal occupation. It was evident that while pellagra was nine times more prevalent among the mill village population than among the rural population, this excess did not appear among the mill operators but among the adult women of the mills who were engaged in home duties about the house. Those theories of the causation based upon the idea of a metabolic disturbance due to a peculiarity of diet, such as the excessive use of maize or of cottonseed oil products or the use of spoiled maize, would seem to be inadequate to explain the excessive prevalence in certain geographical divisions or in certain groups of population. In their opinion, these inequalities in the distribution of pellagra in Spartanburg County were at least suggestive of the possible infectious nature of the disease and of its communicability.

**Metabolism in Pellagra.**—Dr. V. C. Myers and Dr. M. S. Fine presented this paper and offered the following summary: The ability of individuals suffering from pellagra to utilize the various food stuffs, as indicated by their series of experiments, appeared to be only slightly, if at all, below the normal. The elimination of mineral and nitrogenous constituents in the urine was such as would be anticipated under the dietary and physical conditions of the individuals. A lowered efficiency was indicated by the low creatinine coefficients and the elimination of small amounts of creatine in the urine. The presence of a few hyaline casts in about 45 per cent. of the cases pointed to some possible irritation of the kidney. Anacidity was a condition common to pellagra and was found in eight of their fourteen cases. It was generally associated with an entire absence of pepsin, or with pepsin in only very minute quantities. Individuals suffering from pellagra showed a marked indicanuria, which was excessive in the cases with gastric inefficiency. Though the ethereal sulphate hardly paralleled the indoxyl-potassium sulphate, the quantities eliminated were much higher where anacidity existed and they furthermore held a higher ratio to the inorganic sulphates. The feces contained decidedly abnormal amounts of indole and skatole, especially the latter. The presence of excessive amounts of indican in the urine, associated with a high elimination of ethereal sulphates, when considered in connection with the abnormal amounts of indole and skatole in the feces, pointed to some unusual bacterial conditions in the intestine. From the data at hand this putrefaction appeared to take place rather high up in the intestine.

**Some Observations on the Intestinal Bacteria in Pellagra.**—Dr. W. J. MacNeal read this paper. He said that a general survey of the fecal bacteria in pellagra was undertaken in 1910 and 1911 by the Illinois State Pellagra Commission. A brief summary of this work was published in the August number of the *Archives of Internal Medicine*, and the detailed record of the work had recently appeared in the report of the Illinois State Pellagra Commission, issued by the Illinois State Printer. Further study along similar lines had been undertaken by the Thompson-McFadden Commission at the New York Post-Graduate Medical School this past summer. The opportunity was here presented to test this culture against the sera of pellagrins in a different part of the country, South Carolina. These recent cases had been divided into four series: first, 66 pellagrins showing lesions on the skin at the time the blood was taken; second, 43 pellagrins who did not show an eruption at the time; third, 22 individuals living in the pellagrous district, Spartanburg County, S. C., but free from any sign or definite history of the disease; fourth, 27 individuals in New York. The agglutination tests were performed by the macroscopical method, a suspension of the bacteria in salt solution being mixed with an equal volume of a 20 per cent. solution of the serum in a small tube for each test, the final dilution of the serum being one in ten. It was incubated for an hour and the progress of events were recorded at intervals of fifteen minutes. Complete clumping and precipitation of the bacteria to the bottom of the tube was recorded as a complete reaction. Grades of almost complete, marked, slight, and negative were also distinguished. In the first series 51 gave complete agglutination, 5 almost complete, 3 marked, 3 slight, and 4 negative. In the second series 30 gave complete agglutination, 6 almost complete, 0 marked, 0 slight, and 7 negative. Of the whole 109 sera from pellagrins, 74.3 per cent. gave complete agglutination, 10.1 per cent. almost complete, 2.7 per cent. marked, 2.8 per cent. slight, and 10.1 per cent. negative reactions. In the third series 5 gave complete agglutination, 1 almost complete, 3 marked, 6 slight, and 7 negative reactions. In the fourth series 6 gave complete agglutination, 3 almost complete, 10 marked, 1 slight, and 7 negative reactions. Of the total 49 controls, 22.5 per cent. gave complete agglutination, 8.2 per cent. almost complete, 26.5 per cent. marked, 14.3 per cent. slight, and 28.5 per cent. negative results. These results were obviously not sufficiently clear-cut to warrant the assumption of a specific agglutination reaction of this bacterium with the serum of pellagrins, and yet they were such as to stimulate further work. The conservatism of this statement was not due to the fact that they had employed dilutions of 1 to 10 instead of higher dilutions of the serum, for many of these positive sera had been tested in higher dilutions, up to 1 in 400, and had produced very definite agglutination in such strength. The question of specificity was, however, seriously opposed by the fact that sera from normal individuals gave precisely parallel results in some instances. The work was in a very unfinished condition and no important conclusions could be drawn from it. It was presented to give an idea of one of the avenues along which they had approached the possible bacteriological phase of the problem of pellagra.

**A Case of Splenomegaly.**—Dr. O. S. Hillman reported this case. The diagnosis was made largely from a pathological point of view and by the process of exclusion. The spleen was somewhat enlarged and there were a large number of nucleated red cells. There was no cyanosis present. In the light of their present knowledge Dr. Hillman did not see what other diagnosis could be made. The leucocytes were largely increased in number as well as the number of myelocytes, the latter being as high as two per cent. There were a considerable number of mononuclears, or cells of the bone type, probably of the myeloplastic order.

Dr. Nathan E. Brill said that he recognized in the "case of splenomegaly" just reported by Dr. Hillman an old acquaintance. In fact the subject of this report was presented by him in life at the meeting of this very section in January, 1911, and reported subsequently by him in the Medical Record as "A Case of Erythemia with Unusual Features" in April, 1911. The patient had been under his observation at Mount Sinai Hospital for many months and was regarded by him as a classical instance of Vaquez's or Osler's Disease. While in England and

America the profession was wont to call the cases of polycythemia with enlarged spleen Osler's Disease, the honor of having described the first case belonged to Vaquez, who, in 1892, described in a patient, in whom he thought a cardiac lesion existed, a special variety of cyanosis and persistent polycythemia. Vaquez, three years later at autopsy, found the patient had a very large spleen but no cardiac lesion. This was the first case in literature, after which appeared, in 1899, cases described by Frenchmen, Rendu and Widal, Martin and Lefas; then by our countryman Cabot in 1899 and another in 1900. The clinical entity of the disease was afterwards hinted at by the Englishman, Dr. Russell, in Saundby's case. However, to Osler belonged the credit of having grouped the cases into a clinical entity, in 1904, by establishing the persistence in all cases of distinctive symptoms. Cyanosis, which, according to Dr. Hillman, was absent in this case, was not a necessary or essential factor of the disease. He would find in the literature many undoubted cases in which cyanosis did not exist. While this patient was under Dr. Brill's observation there was pallor though the tongue and palms of the hand were extremely red. The unusual features in this case, which he reported and which Dr. Hillman also found, were the marked hyperleucocytosis, 45,000 white blood cells, with definite myelocytosis (8 per cent.), showing a concomitant disturbance in the erythroblastic and leucoblastic activities of the bone marrow. A definite bone tenderness was also present as an exceptional feature. In fact, hyperleucocytosis had been reported by others, but a myelocytosis of eight per cent., which this patient showed, was extremely rare and with the other clinical feature of enlarged spleen, pallor, and bone tenderness might suggest the possibility of a leukemia. The erythrocytosis existing in this case absolutely excluded the possibility of a leukemia which was associated with a diminished and not with an excessive number of red blood cells.

**Contribution to the Bacteriology of the Duodenum.**—Dr. W. J. MacNeal and Dr. A. F. Chase presented this paper.

Dr. Anthony Bassler said that he had come to the conclusion that the bacteria found in the duodenum at autopsy were rarely of the pyogenic or putrefactive type of organisms. Dr. Herter believed that the duodenum probably became infected under certain conditions of the stomach and he believed, too, that the upper two-thirds of the small intestine was essentially sterile, so far as the important anaerobic bacteria were concerned. Recently Dr. Bassler had been making some observations of the duodenal contents and it occurred to him in a general way that when there was any delay in the exit of the stomach contents, with insufficient gastric secretion, this stagnation in the stomach permitted fermentation and putrefaction from bacteria, which bacteria passed on into the duodenum where they could also be found.

**Report of a Case of Digitalis Poisoning with Electrocardiograms Showing Heart Block, Fibrillation of the Auricle, Coupled Rhythm and Development of a Right Ventricular Hypertrophy.**—Dr. Robert H. Halsey made this report. The interesting features of this report were shown by the electrocardiograms, showing heart-block, auricular fibrillation, coupled rhythm, and the development of an hypertrophy of the right ventricle. He believed that a great deal was to be gained from a careful study of these electrocardiograms, and this study was along the line of work that had been done by Dr. Thatcher. In those cases with edema where digitalis was given without any prompt response by an increased output of the urine and a disappearance of the edema, one should be very cautious about pushing the doses of digitalis, or in keeping up large doses for any length of time. All these cases did not have nausea and vomiting as a preliminary symptom of digitalis poisoning; therefore, one should be very careful not to damage the heart by the too free use of this drug.

Dr. T. Stuart Hart said, in reference to hypertrophy of the heart, that ordinarily this developed very slowly, and that he had studied a series of cases (early valvular disease, early nephritis, etc.) in which hypertrophy might be expected to develop; repeated electrocardiographic records often showed only insignificant changes even after a period of six months. Another class of cases that Dr. Hart had studied were those in which the heart had been *displaced* by a hydro, or pneumothorax. After a *short time* when the fluid or air was removed, with a change in the position of the heart, there was a change in the electrocardiogram comparable to the changes in Dr. Halsey's records. It had also occurred to him that Dr. Halsey might have had an acute dilatation of the right heart with which to deal. He did not know whether this condition had been studied with the aid of the electrocardiograph; this was merely a suggestion. Dr. Halsey brought out a very important point regarding the effect of digitalis in increasing the irritability of the heart. In cases of auricular fibrillation everybody wanted to know what was the cause of the fibrillation. Patients with mitral disease with regularly acting hearts often had dilated auricles. In such a weakened cardiac musculature, might not digitalis increase the muscular irritability and thus be an efficient cause in inducing fibrillation? Cases had been reported in which the administration of digitalis had been followed by auricular fibrillation. Might not the digitalis be a very important factor in developing fibrillation?

**Galactose Test.**—Dr. Berton Lattin presented this communication in which, after reviewing briefly the galactose test of hepatic function, he gave the results of this test in their hands. They had used it on 58 patients 63 times. The results of 40 of these tests seemed worth while reporting and included all the cases in which liver disease could reasonably be excluded and all the cases in which an unequivocal diagnosis could be made. The following technique was employed: Forty grams of chemically pure galactose were dissolved in 500 c.c. of tea and given on a fasting stomach at the breakfast hour. The urine of the patient was collected just before the test and every hour up to four hours after the test. The specimens were examined qualitatively by the Fehling test and quantitatively by the polariscope. Following the arbitrary division of Reiss and Jehn, values under two grams for the four hours were considered slight galactosuria; two to four grams, moderate, and over four grams indicated pathologically diseased tolerance. The results of the investigation were summarized as follows: 1. Of 19 cases with livers clinically normal, 89.5 per cent. showed normal tolerance for galactose, 10.5 per cent. showing moderately alimentary galactosuria. 2. Of seven cases of hepatic cirrhosis, 29 per cent. showed moderately decreased tolerance for galactose, 71 per cent. showing normal tolerance. 3. Of eight cases of chronic passive congestion of the liver, all showed normal tolerance. 4. Of three cases of catarrhal jaundice two showed marked alimentary galactosuria, the third showing normal tolerance. 5. A single case of long standing jaundice, with solitary stone impacted in the common duct, showed normal tolerance.

**Visualization of Some Obscure Lesions of the Gastro-intestinal Tract by Means of the Röntgen Ray.**—Dr. Arthur F. Holding presented some radiographs showing among others the following: (1) Normal esophagus; (2) cardiopasm; (3) carcinoma of the stomach which involved the esophagus, producing as well a dilatation of the latter; at operation the lesion was found to involve the lesser curvature of the stomach; (4) ulcer of the stomach with an hour-glass contraction; (5) another case of ulcer of the stomach with hour-glass contraction (in both cases the clean cut indentation showed the process to be benign); (6) perforative ulcer of the stomach; the opening led into the lesser peritoneal cavity. He believed that much knowledge was to be gained by means of the fluoroscope which might be lost radiographically. In the paper he intended to read he brought out the fact that the sense of sight was better for diagnostic purposes than the sense of touch and lesions could often be visualized by this method more accurately than they could be felt at the operating table. (7) Carcinoma of the pancreas pressing upon the stomach; this occurred in a young child. (8) Metastasis from a teratomatous testicle pressing on the stomach posteriorly and producing characteristic deformity. (9) Duodenal ulcer; this case was diagnosed as a stenosis of the pylorus by clinical methods. In the radiograph the lesion was found to have been primarily in the duodenum, in its first portion, and secondarily to have caused dilatation of the stomach. In many of these cases of duodenal ulcer there was hyperperistalsis and beginning dilatation present. (10) Normal colon of an adult. (11) Congenital dilatation of the colon occurring in an infant three or four years old, the so-called Hirschsprung's disease or congenital dilatation of the colon.

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**Sputum and Blood Cultures in Lobar Pneumonia.**—T. W. Hastings and E. Boehm note that typical cases of lobar pneumonia, in which no pneumococci are to be found either in the blood or sputum, probably exist more frequently than is generally supposed. These cases are not to be distinguished from the pneumococcus group except by blood and sputum cultures. *Streptococcus hemolysans* (*longus*) is an organism which may give rise to such a case. Schottmüller isolated *Streptococcus mucosus capsulatus* from the blood in a case of croupous pneumonia. There is probably no prognostic value in the bacteriological findings in lobar pneumonia.—*Journal of Experimental Medicine.*

# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

### Tennessee State Board of Medical Examiners.

*May 1 and 2, 1912.*

#### ANATOMY.

1. Name the bones that form the wrist and hand.
2. Name the bones, which, when joined together, form the shoulder-joint.
3. Describe the sternum and give number of bones connecting with it.
4. Name the muscles that flex and extend the arm at elbow-joint.
5. Describe the nasal fossæ.
6. What bones erter into the formation of the nasal fossæ?
7. Name the articulation of the occipital bone.
8. Give a general classification of bones, and describe each class.

#### PHYSIOLOGY.

1. Define the terms (a) osmosis; (b) endosmosis; (c) exosmosis.
2. Describe ovulation.
3. How are the different sounds of the heart produced?
4. Name and describe the salivary glands.
5. Describe the act of micturition.
6. What constitutes a reflex act? Give an illustration.
7. How is audition accomplished?
8. Describe the red blood-corpuscles; (b) the white corpuscles; (c) what is phagocytosis?

#### CHEMISTRY.

1. What is the usual composition of urinary calculi? Give the test for recognizing the principal ingredient.
2. What chemical reaction takes place when $H_2O_2$ is applied to sloughing wounds?
3. Give the chemical action of chlorinated lime in the disinfection of typhoid fever stools.
4. Describe your method of procedure in making a chemical examination of suspected urine.
5. Give an explanation of the formation of ammonia in the urine.
6. Give two chemical tests that you would use in water supposed to be contaminated by sewage.
7. Give the physical and chemical properties of hydrochloric acid. How is hydrochloric acid prepared?
8. Give tests for the purity of chloroform.

#### MATERIA MEDICA.

1. Name four alkaloids of opium, and dose of each.
2. Name three principal salts of potassium and dose of each.
3. Name three medicines which act as galactagogues.
4. Name five drugs containing large quantities of tannic acid.
5. Name three of the most important mineral acids and give dose of each.
6. Name three medicines which produce rashes.
7. What are the effects of digitalis in medicinal doses?
8. What is the adult dose of the following tinctures: belladonna, aconite, valerian, veratrum, and hyoscyamus.

#### PATHOLOGY.

1. Describe a pathologic condition produced by excessive use of alcohol, other than its effect on the liver and stomach.
2. Describe a pathologic condition produced by tuberculosis, other than the lung.
3. Define torticollis, pleurodynia, hemiplegia, gastritis, and gastralgia.
4. Give the pathology of pellagra.
5. Describe the pathology of the tonsils and pharynx in diphtheria.
6. Describe the pathology of the mucous membrane of the large intestines in mucous colitis.
7. Describe the pathology of the large intestines produced by constipation.
8. Give pathology of acute pleuritis.

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## ANSWERS.

#### ANATOMY.

1. *The bones that form the wrist and hand* are: The carpus (scaphoid, semilunar, cuneiform, pisiform, trapezium, trapezoid, os magnum, and unciform); five metacarpal bones, and fourteen phalanges.

2. The bones which form the shoulder joint are the scapula and the humerus.

3. The *sternum* is a flat, narrow bone situated in the median line of the front of the chest. It consists of three portions: the manubrium, the gladiolus, and the xiphoid process. At the junction of the manubrium and gladiolus is the angle of Ludwig, on a level with the second rib. It gives attachment to the pectoralis major, sternomastoid, sternohyoid, sternothyroid, triangularis sterni, diaphragm, and aponeuroses of the external oblique, internal oblique, transversalis and rectus abdominis muscles. It is connected with the clavicle and seven costal cartilages on each side.

4. *Flexion, at the elbow-joint is caused by:* Biceps, brachialis anticus, coracobrachialis, pronator radii teres, and the flexors of the wrist and fingers. *Extension is caused by:* Triceps, and anconeus.

5. The *nasal fossæ* are two irregular cavities situated in the middle of the face. They open in front by the anterior nares, and behind into the nasopharynx by the posterior nares. They are separated by the septum, which is generally deviated to one side. The mucous membrane lining the nasal fossæ is called the Schneiderian membrane. Each fossa has a roof, a floor, an inner and an outer wall. From the outer wall there project into each fossa the superior and middle turbinated processes of the ethmoid bone, and the inferior turbinated bone; these bony processes divide each fossa into a superior, middle, and inferior meatus. The nasal fossæ communicate with the sphenoidal sinus, the anterior and posterior ethmoidal cells, the frontal sinus, and the antrum of Highmore.

6. *The bones which enter into the formation of each nasal fossa* are: Nasal, frontal, ethmoid, sphenoid, vomer, palate, superior maxillary, lacrymal and inferior turbinated.

7. *The occipital bone articulates with:* Two parietals, two temporals, sphenoid, and atlas.

8. *Bones are classified* as: (1) *Long,* which consist of a shaft and two extremities, also called diaphysis and epiphyses; they are not straight, but curved. Examples are humerus, tibia, and phalanges. (2) *Short,* consisting of cancellous tissue covered with a compact substance; the carpal and tarsal bones belong to this class. (3) *Flat,* consisting of broad, flat plates intended for protection, such as scapulæ and parietals. (4) *Irregular,* such as vertebræ and ethmoid.

#### PHYSIOLOGY.

1. *Osmosis* is the diffusion of liquids through an animal membrane. The passage outward constitutes *exosmosis;* and the passage inward is called *endosmosis.*

2. *Ovulation:* "The ovisac, at first very minute, is embedded in the cortical layer of the ovary. Its wall consists of a layer of cells called the membrana propria, within which is found a second layer, the membrana granulosa. An accumulation of these cells forms a little mound called the proligerous disc, and in this the ovum is situated. These cells secrete within the ovisac an albuminous fluid. While the ovisac increases in size it also approaches the surface of the ovary, having then attained a diameter of one-fourth to one-half of an inch. At this point it stops growing, while the fluid continues to be secreted in its interior. This finally subjects the ovisac and the overlying covering of the ovary to a bursting pressure; the ovisac is ruptured, and the ovum, with some of the fluid and epithelium of the ovisac, is extruded upon the surface of the ovary." (Landis' *Obstetrics.*)

3. The *causes* producing the *first* sound of the heart are not definitely ascertained; the following are supposed to be causatory factors: (1) The vibration and closure of the auriculo-ventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall.

The *second* sound is caused by the vibration due to the closure of the semilunar valves.

4. The *salivary glands* are the two parotid, two sublingual, and two submaxillary glands. They are compound racemose glands, made up of lobes, which in turn are made up of lobules, and each of these latter is composed of tubular alveoli or acini connected with a duct. The ducts from the various lobules join together to form larger ducts and these eventually combine to form the main duct of the gland. The *parotid gland* is the largest of the salivary glands, and is situated outside the mouth, below and in front of the ear: its duct is called Stenson's duct; it crosses the masseter muscle, pierces the buccinator, and opens in the mouth opposite the second upper molar tooth. The *submaxillary gland* is situated beneath the lower jaw, and its duct is Wharton's duct, which opens at the side of the frenum of the tongue. The *sublingual*

gland is in the mucous membrane at the side of the frenum of the tongue, and its ducts (ducts of Rivinus) open on the floor of the mouth near the frenum of the tongue.

5. "The urine trickles drop by drop down the ureters into the bladder, where it collects and gradually distends it. The exit from the bladder is opposed by the sphincter vesicæ, or, as some believe, by the elastic and muscular fibers of the urethra. The urine is expelled by the contraction of the walls of the bladder, more especially by the detrusor vesicæ, and is assisted when much distended by the contraction of the abdominal walls. Micturition is a reflex act but one which (with the exception of infants) is under the influence, if not under the control of the will. The mechanism appears to consist of an automatic center in the lumbar part of the cord, maintaining the constant contraction of the sphincter, a second center, which, when stimulated, excites contraction in the detrusor. These centers are antagonistic, so that an afferent impulse from the bladder excites the detrusor center, at the same time inhibiting the sphincter center. These centers are normally under the control of the will, so that, although an afferent impulse may ascend from the bladder to the centers of the cord and up to the sensorium, yet by an effort of will the sphincter center may be assisted and the detrusor inhibited, or *vice versa*. Thus when the bladder becomes distended an afferent impulse from the bladder reaches both lumbar center and the brain; if the opportunity is favorable for micturition the controlling influence of the will is removed, the reflex contraction of the detrusor taking place, assisted perhaps by the voluntary abdominal muscles." (Ashby's *Physiology.*)

6. *Reflex actions* are involuntary or unconscious movements due to suitable stimuli. They depend upon the integrity of the *reflex arc*, which is a complex made up of: (1) A surface capable of receiving an impression; (2) an afferent nerve; (3) a nerve cell capable of receiving and also of sending out impulses; (4) an efferent nerve, and (5) a surface capable of responding in some way to the impulse conveyed by the efferent nerve. *Example:* The patellar reflex consists of a contraction of the extensor muscles of the leg and a movement of the foot forward when the ligamentum patellæ is struck; the quadriceps extensor must first be slightly stretched by putting one knee over the other. Its integrity depends upon a healthy condition of the entire reflex arc, consisting of tendon, afferent or sensory nerve, posterior roots, and anterior horn of the spinal cord, the efferent or motor nerve, and the muscle itself.

7. "The waves of sound are gathered together by the pinna and external auditory meatus, and conveyed to the membrana tympani. This membrane, made tense or lax by the action of the tensor tympani and laxator tympani muscles, is enabled to receive sound waves of either high or low pitch. The vibrations are conducted across the middle ear by a chain of bones to the foramen ovale, and by the column of air of the tympanum to the foramen rotundum, which is closed by the second membrana tympani, the pressure of the air in the tympanum being regulated by the Eustachian tube. The internal ear finally receives the vibrations, which excite vibrations successively in the perilymph, the walls of the membranous labyrinth, the endolymph, and, lastly, the terminal filaments of the auditory nerve, by which they are conveyed to the brain."

8. The *red blood-corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. They carry oxygen from the lungs to the tissues. The *white blood-corpuscles* are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes; (2) large mononuclear; (3) transitional; (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain: it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

*Phagocytosis* is the faculty of certain cells (notably the mononuclear and polynuclear leucocytes) to take up and destroy bacteria and other cells.

### CHEMISTRY.

1. *Urinary calculi* are usually composed of uric acid, or acid urates. *Test for uric acid:* Moisten a piece of the dust from a section of the calculus with nitric acid, and then with ammonium hydroxide; a purple color denotes the presence of uric acid.

2. In the presence of pus hydrogen dioxide effervesces, in consequence of the liberation of oxygen.

3. Free chlorine is released from the chlorinated lime and it kills the bacilli and their products.

*An analysis of urine* includes: Estimation of total quantity passed in twenty-four hours, color, odor, reaction, specific gravity, total solids (by aid of Haeser's coefficient). Then examine for albumin by Heller's test, or by heat and nitric acid; then for glucose, by Moore's test, with potassium hydroxide, or with Fehling's solution, which contains copper sulphate, sodium hydroxide, and Rochelle salt; then for blood with potassium hydroxide solution; then for bile pigments by Gmelin's test; then for indican, using lead acetate, hydrochloric acid, ferric chloride, and chloroform. Then quantitatively for urea, using solution of sodium hypobromite; for chlorides, with silver nitrate solution; for sulphates, with barium chloride solution. Microscopical examination should then be made for casts, cylindroids, crystals, and tubercle bacilli.

5. The ammonia in the urine is believed to be derived from that part of the protein decomposition which has escaped conversion into urea.

6. (1) Nessler's reagent (saturated solution of mercuric potassium iodide in ammonia-free distilled water, rendered alkaline with caustic soda or potash) gives a yellowsh tinge to the water in presence of sewage.

(2) Add a small quantity of sulphuric acid and enough potassium permanganate to give the mixture a red color. On boiling, the solution becomes decolorized in the presence of organic matter.

7. *Hydrochloric acid* is a colorless gas, with a sharp penetrating odor, very irritant to the respiratory tract and skin; it does not burn in the air or support combustion; it reddens litmus, is very soluble in water, is a powerful corrosive, also a disinfectant and bleaching agent. It is made by the action of sulphuric acid upon sodium chloride:

$$H_2SO_4 + 2NaCl = Na_2SO_4 + 2HCl.$$

8. *Tests for chloroform:* "Chloroform should be tested for excess of alcohol by specific gravity; for hydrochloric acid and chlorine by shaking it with water, which afterward should not give a precipitate with silver nitrate; for aldehyde by heating with solution of potassium hydroxide, which should not be colored brown; for empyreumatic and other organic compounds by shaking with an equal volume of pure sulphuric acid, which should remain colorless; or by evaporation, when no residue should be left and no odor should be perceptible after the chloroform has been volatilized." (Simon's *Chemistry.*)

### MATERIA MEDICA.

1. *Four alkaloids of opium:* (1) Morphine, dose gr. 1/5; (2) codeine, dose gr. ½; (3) thebaine; (4) papaverine.

2. Potassium acetate, dose gr. xxx; potassium chlorate, dose gr. iv; potassium iodide, dose gr. vij.

3. *Three galactagogues:* Pilocarpus, castor oil (leaves applied locally), and strychnine.

4. *Five drugs containing tannic acid:* Nutgall, catechu, witchhazel, oakbark, and logwood.

5. Diluted hydrochloric acid, dose ♏xv; diluted nitric acid, dose ♏xxx, well diluted; diluted sulphuric acid, dose ♏xxx, well diluted.

6. *Three medicines which produce rashes:* Arsenic, bromides, quinine.

7. DIGITALIS. *Physiological action:* It is a gastrointestinal irritant, it slows the rate of the heart, prolongs diastole, increases the force of the heart, it contracts the blood-vessels, and causes a rise in blood pressure, it also acts as a diuretic.

8. Tincture of belladonna, dose viij; tincture of aconite, dose ♏x; tincture of valerian, dose ʒij; tincture of veratrum, dose ♏xv; tincture of hyoscyamus, dose ♏xv.

### PATHOLOGY.

1. The excessive use of alcohol is very apt to produce *arteriosclerosis.* In this the subendothelial connective tissue of the intima of the arteries is thickened, and the media undergoes degeneration (generally fatty or hyaline). The muscular coat may be hypertrophied or atrophied.

The patches of degeneration may become infiltrated with lime salts, and thus nodules or large plates are formed.

2. *Tuberculosis of the intestine* may affect the ileum, cecum, or colon. The ulcers attack the submucous and mucous coats, and may even perforate. If cicatrization occurs stricture of the intestine may result. The ulcers are to be differentiated from those found in typhoid. The tubercular ulcer has its long axis at right angles to that of the intestine, and the edges are infiltrated and undermined.

3. *Torticollis* is a spasmodic contraction of the muscles of the neck, chiefly the sternomastoid and the trapezius.

*Pleurodynia* is a painful rheumatic affection of the intercostal or thoracic muscles.

*Hemiplegia* is paralysis of one side of the body (and of the opposite side of the face).

*Gastritis* is inflammation of the stomach.

*Gastralgia* is pain in the stomach.

4. The pathological changes in *pellagra* are neither definite nor constant. Atrophy of muscles, heart, liver, and pancreas have been found; the intestines may be ulcerated or contain parasites. The nervous system may show no changes, or there may be degenerative or sclerotic areas in the spinal cord; degeneration or round cell infiltration of some of the nerves may be present. Its origin is unsettled; protozoa and the eating of diseased maize are two of the theories to account for it.

5. In *diphtheria*, the pharynx and tonsils are usually covered by a false membrane which consists of a network of fibrin, round cells, connective tissue cells, Klebs-Loeffler bacilli, and streptococci; this membrane is removed with difficulty and recurs.

6. In *mucous colitis*, the mucous membrane lining the colon is thickened and the mucous glands secrete abundantly; later on atrophy of the mucous membrane occurs. A pseudomembrane may form and be discharged from the rectum as a cast of the bowel or in masses of mucus. Ulceration is sometimes present.

7. In *constipation*, the muscular coat of the descending colon may be hypertrophied, the whole colon may be distended, ulcers may be found in the cecum; on the other hand, there may be no pathological lesions visible. The cause of the constipation may produce lesions.

8. *Pathology of acute pleuritis:* "The first stage is marked by congestion and irregularly diffused redness of the membrane with scattered flakes of exudation. The second stage is characterized by the copious formation of lymph, which more or less completely covers the membrane, giving it a dull, cloudy, or shaggy appearance. If the inflammation ceases at this period, it is termed *dry pleurisy*. If the condition progresses an effusion is poured out into the pleural cavity, which may be serofibrinous, fibrinous, or purulent. The serofibrinous variety is most frequent and consists of a straw-colored fluid containing fibrinous flocculi, blood, and epithelial cells. Its quantity is usually rather large. When the exudate is fibrinous, the amount is small and the consistency is greater than that of the preceding. It undergoes organization quickly and gives rise to adhesions and pleural thickening. The exudate becomes purulent (empyema) only as the result of microorganismal infection. The effusion may become bloody in some instances as the result of ulceration (tuberculous or cancerous) and grave blood diseases. Displacement of the viscera is common in this stage; if on the right side, the effusion pushes the heart farther to the left; if on the left side, the heart is displaced to the right, the impulse often being seen to the right of the sternum. The lungs are also compressed and displaced upward and against the spinal column. On removal of the fluid they again expand, except in cases of chronic pleurisy, in which the adhesions interfere with the functional activity of the pulmonary structure. Absorption of the effused material is the natural sequence in most cases. Unabsorbed portions undergo organization, producing adhesions, which, in extreme instances may obliterate the entire pleural cavity. Sacculation of the effusion by adhesions is not uncommon, especially in purulent exudations in which the adhesions form an abscess wall. Varying degrees of adhesion of the opposing pleural surfaces are encountered, depending on the character of the exudate."

**Life of Connective Tissue Outside of Organism.**—A. H. Eveling performed a series of experiments which showed that connective tissue can be kept in a condition of active growth outside of the organism for more than eleven months, that its mass increases considerably, and its power of proliferation, after such a long period, is more active than at the beginning of its life *in vitro*.—*Journal of Experimental Medicine.*

CLINICS, DEPARTMENT OF PUBLIC CHARITIES

CALENDAR, APRIL, 1913

MONDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Surgery | Dr. Dawbarn | 2:30 P.M. |
| | Dermatology | Dr. Fordyce | 3:00 P.M. |
| *Cumberland Street Hospital*, Brooklyn | Surgery | Dr. Walmserf | 3:00 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |

TUESDAYS

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|---|---|---|---|
| *Neurological Hospital* | Neurology | Dr. Byrne | 9:00 A.M. |
| *N. Y. City Chil. Hospitals and Schools* Randall's Island | Orthopedic | Dr. Ogilvy | 10:00 A.M. |
| *Cumberland Street Hospital*, Brooklyn | Ophthalmology and Otology | Dr. Lloyd | 3:00 P.M. |
| | Surgery | Dr. Iler | 3:00 P.M. |
| *Kings County Hospital* | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Barber | 11:00 A.M. |
| | Genitourinary Surgery | Drs. Morton and Fraser | 2:00 P.M. |
| *Coney Island Hospital* | Surgery | Drs. Fisk, Bogart, Murphy and Lack | 10:30 A.M. |
| | Medicine | Drs. Hall, Nash, Hegeman and Byington | 3:30 P.M. |

WEDNESDAYS

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|---|---|---|---|
| *City Hospital* | Surgery | Dr. Dawbarn | 9:00 A.M. |
| | Medicine | Dr. Quimby | 1:30 P.M. |
| | Genitourinary Surgery | Dr. Greene | 2:00 P.M. |
| | Obstetrics | Dr. Dorman | 2:30 P.M. |
| *Metropolitan Hospital* | Surgery | Drs. Ostrow and Harrington | 2:30 P.M. |
| April 2, 9 and 23 | Medicine | Dr. Seward | 2:30 P.M. |
| April 2, 16 and 30 | Medicine | Dr. Swift | 2:30 P.M. |
| April 9 and 23 | Medicine | Dr. Moore | 2:30 P.M. |
| April 16, 23 and 30 | Medicine | Dr. Thomas | 2:30 P.M. |
| April 30 | Medicine | Dr. Hathawait | 2:30 P.M. |
| April 2 and 16 | Neurology | Dr. Howard | 2:30 P.M. |
| April 2, 16 and 30 | Ophthalmology and Otology | Dr. Boyle | 2:30 P.M. |
| April 9 and 23 | Genitourinary Surgery | Dr. Carleton | 2:30 P.M. |
| April 9 and 23 | Laryngology and Rhinology | Dr. Foster | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Maloney | 10:00 A.M. |
| *Cumberland Street Hospital*, Brooklyn | Gynecology | Dr. Pierson | 2:30 P.M. |
| *Kings County Hospital*, Brooklyn | Dermatology | Dr. Winfield | 1:00 P.M. |
| | Orthopedics | Dr. Truslow | 9:00 A.M. |
| | Orthopedics | Dr. Napier | 2:00 P.M. |
| *Coney Island Hospital* | Pediatrics | Drs. Beck, McQuillan, Pendleton and Van Wart | 3:30 P.M. |

THURSDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Medicine | Dr. Evans | 9:00 A.M. |
| | Medicine | Dr. Brooks | 2:30 P.M. |
| | Gynecology | Dr. Stearns | 2:00 P.M. |
| *Cumberland Street Hospital*, Brooklyn | Surgery | Dr. Walmserf | 3:00 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| *Kings County Hospital*, Brooklyn | Obstetrics | Drs. Commiskey and Judd | 10:00 A.M. |
| | Otology | Dr. Alderton | 1:00 P.M. |
| | Surgery | Dr. Barber | 2:00 P.M. |
| *Coney Island Hospital* | Gynecology | Drs. McEvett, Mills, Mayne and Rankin | 10:30 A.M. |
| | Surgery | Drs. Fisk, Bogart, Murphy and Lack | 10:30 A.M. |

FRIDAYS

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| *City Hospital* | Ophthalmology | Dr. Wiesner | 9:00 A.M. |
| | Laryngology and Rhinology | Dr. Dougherty | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr Abrahamson | 9:00 A.M. |
| *Cumberland Street Hospital*, Brooklyn | Ophthalmology and Otology | Dr. Lloyd | 3:00 P.M. |
| | Surgery | Dr. Iler | 3:00 P.M. |
| | Surgery (Oral) | Dr. Shea | 4:30 P.M. |

SATURDAYS

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| *City Hospital* | Pathology | Dr. Larkue | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Walsh | 2:00 P.M. |
| *Kings County Hospital*, Brooklyn | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Neurology | Dr. Brush | 11:00 A.M. |
| | Surgery | Dr. Barber | 11:00 A.M. |
| | Gynecology | Dr. McNamara | 1:30 P.M. |
| | Medicine | Dr. Stivers | 3:30 P.M. |

**Congenital Atresia of the Esophagus.**—W. P. Shukowsky and A. H. Bacon report the case of an infant that manifested a slight degree of asphyxia at birth and that was not able to perform the act of sucking. There was a persistent discharge from the nose of a tenacious grayish white secretion. Death occurred in forty-eight hours. At autopsy there was found a dilatation of the esophagus that terminated below in a blind pouch. This communicated by means of a slitlike fistula with the trachea.—*Archiv für Kinderheilkunde.*

## Miscellany.

**Certainty in Surgical Diagnosis and Treatment.**—As interesting as statistics of operation-series are details of the personal qualities of surgeons. A trained eye will note many little tricks of gesture in an operator, as well as the technical points which engage the attention only of the novice. In one's earlier days as assistant, one remembers having to endure from one's nominal "chief" a fusillade of questions, such as: "Do you think I have taken it all away?"—"Will that stitch hold?" These show only a fussiness and lack of self-confidence that ought to point to an early retirement into private life. Another type is the man who looks on the presence of spectators as furnishing an opportunity for giving an anatomical demonstration.

Spectators themselves forget their rôle and display a loquacity about totally irrelevant matters while the surgeon is trying to fix his attention on his immediate work. Surely the most priceless gift for a surgeon is certainty—in diagnosis and in technique. In the former, this by no means involves a lightning diagnosis. The impulse to fly at a new patient with a diagnosis in one hand and a scalpel or medicine bottle in the other, is one which every "house-man" has to overcome. The scientific opinion is that which thinks of all possible causes of the condition, admits one as the most likely, and is quite prepared to reconsider it on cause shown. Such an attitude contributes to justice, and lessens the risk of a totally unwarrantable reproof of an assistant for not having told the surgeon of something he may otherwise discover only at the operation—a fault which Kocher has never to blame. Again, it is entirely distinct from a habit of "hatching" cases. It has happened before now that a patient with fever and inflammation over the mastoid process has been allowed to continue in this condition for some days, merely because the prospective operator has not had the judgment to recognize that immediate operation is necessary. In technique, fussiness is shown by zeal for large incisions, whereas men like Roux of Lausanne, and Caird of Edinburgh, will content themselves with an aperture barely two inches long when they have to remove an appendix. It is possible that such a spirit is fostered by the English custom of having half a dozen nurses on the floor of the operating theater, to wait on the operators, and even on the anesthetist, when all ought to do as much for themselves as possible, to avoid sepsis and needless alarms.

There is a blatant type of operator whose irritability, or what is even more offensive, whose sudden anxiety to teach his house surgeon details, increases with his audience. Some men will become excited by any mishap, others remain stolid because they really do not recognize what is happening. It is possible to be concerned about a patient's condition without becoming ululatory. The ideal is to recognize when operation is necessary, to do it quietly, knowing what one has to do and where it must be done, and to avoid attending to other men's work. A nervous surgeon who was alarmed about his patient asked an unusually placid anesthetist, "Is she all right?" The answer, given in a marked drawl, was, "Yes! Why? What have you done?"—*Universal Medical Record*, February, 1913.

**Portrayal of the Blind in Japan.**—From earliest times the blind have been favorite subjects for the artist's brush, and portraits of the blind alone do much to reveal the standard of painting at various epochs. The subject was treated with great realism by the Greeks, but the most relentless realism was displayed by the Dutch painters. With the exception of the Dutch school, however, Japanese artists are, according to Professor Greeff, the most faithful portrayers of blindness in its many aspects. In an interesting paper he brings out many curious features of the life of the blind in Japan, and of their portrayal by Hokusa, who was born about the year 1759. He ranks in European opinion as Japan's greatest painter, yet he appears to have been ignored by his contemporary fellow countrymen, and to have died in poverty and obscurity. After middle age he issued a series of sketches representing life in Japan, and he depicted as many as twenty-four distinct types, among the blind. His vivid realism lays him open at first sight to the charge of caricaturing. But Professor Greeff thinks that such an interpretation is unjust, and that the artist has caught true, but possibly fleeting, expressions of the blind. Some appear happy and scarcely affected by their blindness, others bear the stamp of sorrow and resignation, others look stupid, and others again are portrayed as idiots. Their attitude, gait, and expression betray the action of a common affliction on characters of widely different type.

Massage is an accomplishment commonly acquired in Japan by the blind, whose sense of touch is naturally well developed; and, as massage has been in common use since the eighth century, the blind masseur is well established. Massage is to-day prescribed for almost every form of illness, and it is commonly employed after baths or exercise. It is therefore not surprising that even the smallest villages in Japan can boast a blind masseur, and that he has been frequently depicted in the exercise of this art. Professor Greeff reproduces two such scenes depicted by Japanese artists, who evidently have caught characteristic expressions of both the masseur and his subject. The former, in one sketch, wears an expression of grim determination as he apparently digs his elbow into the small of the back of his subject. The latter's quaint expression of resignation scarcely suggests pleasurable sensations. In the other sketch, the masseur's expression denotes extreme despair and exhaustion, while the fatuous and languishing expression of his subject suggests the placid contentment of a pig being tickled.—*British Medical Journal*, February 8, 1913.

**Changing One's Diagnosis.** — Sir Berkeley Moynihan once said that some surgeons seemed to think that it was a humiliation for them to open an abdomen, after making a diagnosis on reasonable grounds, and not to discover the particular condition which they had supposed to be present. He had himself no compunction in throwing his diagnosis aside as soon as it was found to be wrong and going in search of something else. And if any precedent was required it could be found in the example of Saul, who went in search of his father's asses and found a kingdom.—*Clinical Journal*.

**The Surgical Ligature.**—J. G. Mumford notes that Ambrose Paré never dreamed of claiming that he had invented the ligature. This was used by Galen and by many others in ancient times to control hemorrhage from wounds; but strangely enough the thought of controlling hemorrhage from amputation wounds seems to have occurred to none before the time of Paré.

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## Original Articles.

### A SUMMARY OF THE ORIGINS, TRANSFORMATIONS, AND PRESENT-DAY TRENDS OF THE PARANOIA CONCEPT.*

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THERE was a time, in the history of this Society when psychiatric subjects were discussed almost as frequently as those of more strictly neurological interest. I therefore feel that in my choice of a subject from psychiatry as a presidential address I am not departing from the usages of this body, and inasmuch as there seem to be many indications of a marked interest in the subject of paranoia, I felt I might bring to your consideration some suggestions, old as well as new, which might prove of profit.

I have thought to give my address somewhat of a historical cast, feeling as I have done so that if I am successful in robing and disrobing the figures of ancient as well as of modern psychiatry, and in making them pass rapidly before you, it may serve to indicate, after all, how variable is what we are apt to call truth. Furthermore, I trust my review will serve to orient the present traveler in the field of psychiatry as to the drift of opinion to-day relative to the paranoia question.

It is almost trite to say that with each new generation newer methods of solving old problems arise, and that refinements in methods of analysis, with sounder syntheses result. Old lines fade away, new boundaries are run, and radical rearrangements are everywhere apparent.

This is as it should be, and is an indication of healthy mental activity, and in no field of psychiatry is this forward push more apparent than in the consideration of the paranoia domain.

Seen from one point of view, it might appear that my discussion is dealing with a subject the trend of the development of which is tending toward an elimination of the concept entirely. Like the famous snakes of Ireland; so with paranoias—one might almost say that "there are none." On the other hand, another present-day trend points in the direction of the unraveling of some most fascinating and highly important mental mechanisms, which play a large rôle in the psychopathology of everyday life. The paranoid character, if I may so speak of it, promises to offer a clue to the further elucidation of many important situations, and which, lying outside of the more restricted field of present-day paranoia, give me more justification for dealing with them than I otherwise might hope for.

I shall not occupy your time unduly with the psychiatry of antiquity; yet I would remind you that the term paranoia is even pre-Hippocratic. While I am not clear in my mind what Hippocrates meant when he used the term, yet I feel sure that he may have employed it other than as was his more usual custom, as a general term including "craziness," as a whole, and therefore synonymous with his general terms "mania," "melancholia," etc. He speaks of paranoia as being a kind of thinking, which was common to a number of psychotic pictures, and inasmuch as he employs it as present in his phrenitis, his mania, his melancholia, —which latter are not to be conceived of as in any sense corresponding to later-day symbolic symptom groupings—it would appear that he meant that the thought was "beside itself." It was delirious, delusional, deranged, mad thinking.

But contemporary poets made use of the term, in two instances at least, in an extremely interesting and suggestive sense, as explanatory of a type of thinking which lay behind conduct of a peculiar type—and not allied to the ordinary conduct of the mad man, as seen even in the phrenitis, the mania, or the melancholia of Hippocratic classifications.

In Æschylus' (756) "The Seven against Thebes," we read, chorus (740):

"For of the crime I tell
Of which of old, swift vengeance fell
Yet whose dead issue the third age doth wait;
When Laios 'gainst Apollo's will divine,
From Pythia's central shrine
Who thrice proclaimed the sacred oracle,
"Die without issue would'st thou save the State."

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Yet he, by friends o'erpowered, perverse of mind,
Begat the proper woe.
In Œdipus, the parricide, who dared,
In field unhallowed whence he sprang, to
Sow, a bloody offshoot. *Frenzy blind*
In wedlock the infatuate couple paired.

In Buckley's translation we find the place translated as:

"T'was *phrenzy* linked the distracted pair."

And in Euripides' "Orestes," (821), the chorus, in lamenting upon the murder of Clytemnestra by her son Orestes, says:

"Oh, 'tis the slight
Of impious sophistry putteth for right
The wrong; 'tis the sinner's [andron paranoia]
*infatuate folly.*"

Here we see that the word "paranoia" was used in a sense quite apart from that which a too strict reading of Hippocrates might give it.

*Presidential address before the New York Neurological Society, February 4, 1913.

We also meet with the word in Plato, in Aristophanes, in Aristotle, here used more or less in the Hippocratic sense. But I shall not linger in these far off times. There are more pressing needs about us.

Celsus turned it bodily over to "Insania," thus making it synonymous with the old time conception that all madness was one.

Aretæus seems to have been the last of the ancients to use the word, and, as far as I can make out, he attaches to it a purely general significance.

We now pass through the long period of the medicine of the Monasteries, which extended from the second to the ninth century, the period of the school of Salerno, from 850 to 1200 A.D. The scholastic period of the thirteenth century, the prerenaissance quite to the middle of the eighteenth century before paranoia again appears as playing any rôle in psychiatric terminology .

These periods are not without considerable interest to the student of the history of general psychiatry. But we cannot linger with them. Under the influence of Plotinus, Porphyry, Iamblicus, and their followers neo-Platonism occupied the minds of physicians and philosophers. Roman culture, it is true, retained for many centuries the objective and empiric point of view of the ancient Greeks in medicine but by a gradual series of changes which one roughly speaks of as the influences of neo-Platonism, of Mithraism, of Manicheism, and of early Christianity, the vigorous and sound objective interpretation of the schools of Hippocrates, of Asclepiades, of Aretæus, and of Galen gave way to the silly fantastic superstitious series of speculations, in which stars, planets, fire, and water, angels and demons, were influences at work in causing mental disturbances. Thirteen hundred years was occupied in this wallow of crude interpretations, with here and there some suggestions of rational psychiatry. In fact, it was not until the middle of the sixteenth century apparently that the first attempts at a nosology of mental disorders was made by Felix Plater.

This is Plater's general scheme:

1. *Mentis imbecillitas:* Hebetudo, tarditus, oblivio, imprudentia.

2. *Mentis consternatio:* Somnus immodicus, carus, lethargus, apoplexia, epilepsia, convulsio, catalepsis, ecstasis.

3. *Mentis alienatio:* Stultitas, temulentia, amor, melancholia, hypochondriacus morbus, mania, hydrophobia, phrenitis, saltus viti.

4. *Mentis defatigatio:* Vigiles, insomnia.

Mania and melancholia, principally the latter, are the general terms used throughout this entire period as a general term for insanity, until the time of Vogel.

Just what led Vogel to pick up the term paranoia is not apparent. This was in 1772. He employs it in two ways. In the first place as synonymous with insanity as a whole—for we note that the science of mental disease still hung on to the unitary idea of all of these psychoses as one—a belief, strange to say, advocated by many English psychiatrists at the present day—but Vogel here spoke of the paranoiæ, in the plural, and then we find him trying to create more or less specific trends among the psychoses—a tendency which was largely due to the stimulus given by the work of Linnæus in natural history.

It was just about this time that that memorable work of this Swedish botanist, the "Genera Plantarum," appeared (1753). It would only be natural that its principles of classification and those followed in his "Species Plantarum" should receive a much wider application and be reflected in the work of the medical as well as of the biological sciences. This is the case, and we find the first indications of it in the field of psychiatry, in the work of Vogel mentioned.

Then came an efflorescent period. Binomial nomenclature ran wild, and the work of Linnæus himself, of Sauvages, Plocquet, Valenzi, and Cullen show hundreds of species.

Here are amentias, anoias, paranoias by the score, including much that was sensible, thus as in Sauvages:

Amentia senilis, seracis, a venenis, a tumora, microcephalia, melancholia, scytharum, anglica, tædium vitæ, mysanthropica, milesiana, cynanthropica. Paranoia here was delirious thinking.

1772—Plocquet's "Paranoia" included:

1. Paracope (delirium), with sub-titles: (a) Pathetica, (b) phronestica, (c) entomica, (d) encephalica, (e) hyperesthetica, (f) sympathica.

Such a complex synonymy could not possibly endure—especially as, it was based upon so many fanciful and even superstitious foundations, remnants of the neo-Platonistic decadence previously outlined, and by the beginning of the new century we find the whole structure crumbling—but the *term* paranoia still persists.

One can say that throughout this period it still retained much of its most ancient significance. It usually went with a confusional, delirious type of thinking. The French reconstruction by Pinel threw it out of court entirely. His sweeping reduction to mania, melancholia, and dementia, however, was too simple, and even in France within a generation one finds the cropping up of Esquirol's monomania—destined to cause so much disturbance in the clumsy medicolegal machinery.

But let us pause just a moment to glance at paranoia in its German dress, especially as seen in the work of Heinroth (1808), for here one finds the first approaches of that century old discussion, the chief reverberations of which still linger in our present day psychiatry.

All through the period of which we have been speaking, the mental faculties were thought of as consisting of the intellect and of the will. Aristotle had set his stamp upon this dual system, and it persisted until the later part of the eighteenth century, when Kant, following Mendelsohn's general suggestion, augmented it to a trinity in which the intellect, the will, and the feelings became the ruling psychological categories.

The psychiatry of Heinroth is largely Kantian in this respect. In his synoptical table, one gets an excellent idea of the drift of Heinroth's psychiatry. He retains "Seelenstörung" as his general class—synonymous with the "Paranoiæ" of Vogel. He then makes an Exalted, a Depressed, and a Mixed group—occurring with three genera of each, according to whether the Feeling, the Intellect, or the Will is affected.

The Feeling *Exaltations* include a "paranoia ecstasia."

The Intellectual Exaltations—Verrücktheit—are given the group name "paranoia." The Will Exaltations make up the "manias."

The Feeling *Depressions* are termed "melancholias," the Intellectual Depressions, "dementia," and the Will Depressions, "aboulias."

The Mixed forms contain *confusions*—in the narrow sense "paranoia anomala"; confusion with furor, "paranoia anomala maniaca," general confusion, "paranoia anomala catholica."

Here, I think, we can find the origin of most of the paranoias of the nineteenth and twentieth centuries.

The time at my disposal will not permit a more detailed following of the situation in these early years, even if it seemed advisable. Neither shall I attempt to correlate, nor to describe, the gradual transformations of the English, French, and Italian terms, corresponding to the forms of Heinroth. I should like to do this, for, although it is not altogether possible, it would show the influences at work in the gradual evolution of the situation up to the time when the recognition of general paresis, as a distinct type of mental disease, commenced to overthrow the unitary concept of mental disease, and to revolutionize the entire outlook.

Such a discussion would show that from the time of the appearance of Bayles' "Chronic Arachnitis," of Falret, Sr.'s, "Folie Circulaire," of Kahlbaum's "Katatonie," and Kahlbaum and Hecker's "Hebephrenie," a gradual shift in the entire viewpoint towards mental disease has been taking place, in which etiological and clinical factors have slowly supplanted purely psychological and monosymptomatic criteria.

At the beginning of this period we see excitement and depression as dominating monosymptomatic designations for "mania" and "melancholia." And the ruling psychological conceptions followed servilely the pigeon hole psychology of the feelings, the intellect, and the will.

We purpose, however, to keep to the paranoia trail, and it is a striking feature, apparently not duplicated by any other group of psychoses, that the paranoias, so-called, developed along two increasingly divergent lines—lines already apparent in the Heinroth skeleton.

In Heinroth's Mixed Excitements and Depressions, it will be recalled, that among the Intellectual disturbances was what he called Confusion. The Simple Confusions made up the "paranoia anomala"; when Combined with Furor, "paranoia anomala maniaca," and the General Confusions made up the "paranoia anomala catholica." This general path was one taken by many psychiatrists, particularly in later years by Mendel, and still later by Ziehen. Under this concept then paranoia symbolizes all of those patients with primary delusional ideas with hallucinations, chiefly of sight and of hearing. These might be acute or chronic.

A rigid adherence to this point of view then presents us with a situation, still retained but by few psychiatrists, that *any combination of delusions with hallucinations* would constitute a "paranoia." Thus delirium tremens is the purest type of an acute paranoia with Ziehen. Following this general trend, it becomes evident that artificial and temporary similarity—a cross section as it were of a psychosis—would be sufficient to constitute a diagnosis, *i.e.* a nosological conception, and so far as acute paranoia is concerned, the lion and lamb might occupy the same pen. Such an attitude of mind permits a rapid classification, which possibly would change from day to day, or from month to month, and confuse many issues of etiology, pathology, prognosis, and treatment. The acute paranoias, according to this notion, are conceived of in the crude classical sense, as in Hippocrates, as delirious, delusional, mad thinking. Thus, Ziehen says in his last edition (4, 1911), "paranoias are those functional psychoses whose chief symptoms are primary delusions or hallucinations. If primary delusions enter into the foreground of the picture, one speaks of it as a paranoia simplex; if hallucinations are the chief symptoms, it is a paranoia hallucinatoria. Acute and chronic forms are to be recognized." Such a definition presupposes the concepts functional and primary—both of which have no place in any experiential or pragmatic psychiatry. Thus, in the simpler types, the various amentias, largely made up of severe, often fatal exhaustion psychoses; polyneuritic psychoses, of alcoholic, diabetic, syphilitic origin; infectious psychoses of streptococcus, influenzal, typhoid, syphilitic origins find a place together. Delirium tremens is a peracute hallucinatory paranoia. The delirium of bromides, of lead, of cocaine, of chloral, etc., would fall into the same group.

It is not my purpose to criticise the position taken by Ziehen in this matter. I simply desire to sketch this trend of a situation that tends to place the symptomatological picture in the foreground, and to desregard other types of relationships. It permits an hysterical, epileptic, alcoholic, syphilitic, puerperal situation to be grouped under the same symbol, because they all show primary delusions and hallucinations.

Neurology is hardly yet free from similar modes of thinking. Paraplegia, hemiplegia, epilepsy are some of the symptomatic generalizations of this type still sleeping in the neurological camp.

Retracing our steps to Heinroth, in order to orient the second trend one finds the German words, Verrücktheit, Wahnwitz, Wahnsinn. Here are Heinroth's Excitements, chiefly in the Intellectual sphere, which made up the other chief group of the paranoias. It is the following of this path which leads us more or less directly to the present day controversies. It is here particularly that one finds the attempt to use the General Paresis concept of an entity in mental diseases. Insanity, as such, no longer exists in medicine. Insanity is a medieval concept, which, unfortunately, still finds an abiding place in law. Instead we have the concept of different psychoses in a sense comparable to disease pictures of other organs of the body.

I need not rehearse how vigorously the psychiatrists of the nineteenth century fell upon the old mania, melancholia grab bags. How from these old generalizations new forms were erected, some of more enduring value than others. I shall not repeat before this body how Falret, father and son, constructed the Periodic Manias, Circular Manias, and related forms, which later were drawn together by Kraepelin into his Manic-depressive concept. It would be useful to detail the early studies of Kraepelin upon the Exhaustion and Infection groups—which made a great inroad upon the miscellaneous manias of early psychiatry, and still called Mania by many of the English school.

The rise and fall of the various paranoia concepts during this time, is one of the most instructive features of historical psychiatry, and we shall confine ourselves to its consideration.

To pass over with only the mention of Heinroth's great contemporaries, Ideler, Jacobi (who insisted that *Tobsucht* was not an entity), Blümroder, and others, it is worth while to stop with Griesinger a moment, where we find two at least of Heinroth's chief groups, namely, Wahnsinn and Verrücktheit. By Wahnsinn Griesinger understood those states of exaltation with affirmative, expansive affect, with

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continual self overvaluation, with transitory extravagant and fixed delusional ideas. These he says are identical with Heinroth's "paranoia ecstasia," with Esquirol's Monomania, and may be found in the work of Rush, our American psychiater, under the title Amenomania. The majority of these cases, he said, end in dementia. Here are found the lovers of princesses, and of courtly ladies, or, the women dream of intrigues with Knights or Kings. Here are the Napoleons, the world reformers, millionaires, Gods and Heroes. From the fact that Griesinger speaks of certain of these cases ending in paralysis, I suspect certain paretics strayed into his records as suffering from this type of Wahnsinn, although he says, in another place, the paretic ideas of grandeur have much more irregular and weaker features than the true Wahnsinn's. The hallucinations present are chiefly of hearing and are not forgotten, but encourage and reinforce the delusional ideas. Theomania, erotomania, are applied to certain forms when the delusions are more set or specific.

He spoke of an acute onset like furor, and of a chronic course. Some get well, as if "scales fell from their eyes" (certain katatonics), but those that do not, stay permanently in states of marked exaltation and finally dement.

Griesinger placed his "Partielle Verrücktheit" and "Böldsinnigen" in a common group of "Mental Weaknesses." Together they made up the great mass of the patients who were to be found in institutions. He conceived of those patients as having "Partielle Verrücktheit" who showed striking fixed delusional ideas, which had developed more or less secondarily to what he called mania, or melancholia, or, as perhaps we might say to-day, following periods of acute excitement or depression. Monomania is a good term, he said, though not in Esquirol's sense. He said the careful study of these patients had been neglected. They developed their delusional ideas slowly, following the attacks of mania or melancholia. These patients gradually underwent a new state of psychical tonus. They developed a change of character. They were not normal men, plus a delusion—they were changed throughout. There was an apathy, a loss of all psychical reactions, an indifference, and a diminished energy of the will. They took no more interest in the external world, could neither love nor hate, and showed only superficial passing periods of excitement, of irritability. Hallucinations were extremely frequent. He spoke of those who walk back and forward in a cage, of those who rhymed, or those who habitually hummed a tune, or repeated a verse or movement.

I have selected Griesinger's paranoias since neither Reil, nor Jessen, nor Feuchtersleben, nor Fleming, all names to conjure with in the psychiatry of this period, give enough point to their descriptions to enable one to make any correlations with present day symbols.

While Griesinger's ideas were leavening German psychiatry, those of Morel were active in France. Morel practically admitted only two psychoses, General Paresis and "Insanity," and his idea of "degeneration" reigned supreme in French psychiatry, and had a great influence in fashioning English thought, while Laségue (1852), dubbing the "paranoia" of the Germans "delusions of persecution," gave the push to this monosymptomatic tendency which has always characterized English as well as American psychiatry.

The periodical literature of this period—*i.e.* from 1850 to 1880—is occupied greatly with lengthy discussions as to whether paranoia was to be regarded as a disorder of the intelligence, or of the feelings.

This psychological tendency, mingled with the Morel doctrines of degeneration, and the ideas of Falret and Kahlbaum of *entities* in psychiatry, provide us with the developments leading up to the actual present. I might almost say in a general way that one aspect of the present day situation, as exemplified in the work of Kraepelin, has arisen from the gradual development of the clinical ideas of Falret, Kahlbaum, and Schüle, while another aspect of the situation, which is being fashioned by the Freudian school, has come from the psychological trends which we have seen were roughly foreshadowed in Heinroth.

The concepts given in the text book of Krafft-Ebing, represent the full bloom of the paranoia period. Morel's "degeneré" here has full recognition in his "Psychical degeneration." Paranoia is now the symbol under which 80 per cent. of the asylum patients are grouped, and they are either Primary Paranoias—Sander's creation of a special and rare early type—and the Acquired, or later forms, with Persecutory and Expansive Paranoia as the chief sub-titles.

The Krafft-Ebing picture is all too recent to need much elaboration. It, like most of the writings of Krafft-Ebing, was repeated almost verbatim from edition to edition, and as there were many editions, and as Vienna was enjoying much popularity as a medical center in the eighties and nineties, the conception of his text book of 1889 became widespread.

The chief features in his delineation were: (1) Chronicity, (2) Hereditary Taint, (3) Constitutional Neuropathy, (4) Delusions and Hallucinations. These delusions were not founded on the basis of the affect life, as was seen, he said, in mania, and in melancholia, but are contrasting pictures to the confusional deliria, by reason of the methodical, systematic, and formally logical development of a delusional system, which goes on for years and years, and is incapable of correction, or of cure. Hallucinations are an integral part of Krafft-Ebing's picture—they are of touch, sight, taste, and smell, but auditory hallucinations are most frequent. Krafft-Ebing's paranoia patients did not dement, *save* following *intercurrent disease*, or *masturbation*, or *other psychoses*. He nowhere gives any details of how often these complications occur, and hence one is left to speculate regarding the prognosis so far as deterioration is concerned.

Persecutory Paranoia was his commonest type. So firmly has this monosymptomatic expression come to rule psychiatric thought, that ideas of persecution came to be almost synonymous with paranoia. We are all familiar with the description of this large and miscellaneous group of Krafft-Ebing, and also with its sexual, jealousy, and litigious sub-groups.

His Expansive Paranoias were largely taken over from the masterly study of Magnan, of the "Délires chroniques à l'evolution systematiques."

Here the familiar Paranoia inventoria, reformatoria, religiosa, and erotica are portrayed.

The paranoia of Krafft-Ebing is the paranoia of the average layman, the lawyer and the general practitioner of our own day. It is the concept that many present day psychiatrists find sufficiently valuable to permit them to refuse to modify it, but, like every other general notion in science, it has had its day;

it has served its useful purpose; and has given way to other trends, which now occupy the main arena in psychiatric thought.

It soon became evident that Krafft-Ebing's Paranoias were a large, illy-assorted group of very heterogeneous disease trends. His idea of mental deterioration being a secondary process following "masturbation," "intercurrent disease," "mania," or "melancholia" soon showed its insufficiency the moment the patient's psychosis was studied for a longer period of time. These "other things" were really parts of distinct disease processes. They were essential bits of one situation; they were not "secondary" elements which determined a deterioration of a paranoia. It was no longer a question of two diseases the moment that Kraepelin insisted on studying life histories instead of brief episodic expressions.

The plaint was raised, and I hear it still, "one has to wait until a patient dies before a diagnosis can be made." "Yes," the answer is, "that is just what has happened." Kraepelin watched and waited, and followed his cases to the grave, and the results he has thus far obtained has justified his point of view. They are of value in that one may forecast what is likely to happen better than ever one has been able to do it before, and moreover therapy has become less a matter of guess work.

The large group of paranoia now began to suffer rapid dismemberment, and, out of the mêlée, we recognize the groups of (1904) dementia præcox of Kraepelin, and paranoia. Nearly all of the hallucinatory types have gone over to the former group, with its hebephrenic, katatonic, and paranoid subgroups, while for the latter a much restricted concept has been retained.

It is unnecessary to suggest to this audience that the disease pictures of mankind have not changed. They have, in large measure, always been much the same as they are now. The external, anecdotal features—Marconigrams, wireless telegraphy, and the like—are only more up-to-date externalities of which a paranoid schizophrenic, for instance, may complain; quite analogous to the influence of the stars of his astrologically trained homologue in Babylon many centuries ago. It is not the real underlying psychotic picture that has changed—it is only the hypothesis used to explain it, or describe it, namely, the symbol that has changed. Or, the symbol is retained and arbitrarily utilized to envisage an analytical or synthetic revision of previous concepts. It is not a question of where are the "paranoias" gone. There never were any definite things, *i.e.* "paranoias," to go—there were only mentally constructed, artificial groups, corresponding to a purely intellectual symbol. One shifts one's point of view, and reassembles the material in a different way for purely practical purposes—namely, one by which society will be the gainer in its practical problems.

Most of us here have lived through the dementia præcox controversy. We still have the reverberations of "no dementia" and "not præcox," but such criticisms arise from too narrow a construction of the validity of a symbol to represent a group synthesis.

We have now come in our review to the period in which the use of the term paranoia is restricted to smaller and smaller groups of individuals, following Kraepelin in large measure.

Without expressing at this time the counterpoints in the discussion, it is my purpose briefly to state the latest Kraepelin position, which was outlined before the Society of Bavarian Psychiatrists in Regensburg, June 29, 1912.* Here he traces some of the ground we have gone over. He points out that it soon became apparent that the ideas primary and secondary had little significance. The content of the delusional ideas was of little value—persecution as persecution is not at all limited—it is found in all psychoses; even the fixity of the delusional system is not to be counted upon. He raises the question whether or not the term paranoia might not be abandoned entirely, but he is inclined to retain it as symbolizing those delusion-forming psychoses originating from internal causes, with an extremely chronic development of an intellectually produced, unassailable delusion, in combination with complete "retention of the integrity" of the personality. One sees at once how far we have travelled from the concept in which "transformation of the personality" was a necessary *sine qua non* of a paranoia. Kraepelin speaks of this not as a disease process, but as a variety of psychical teratological mal development, which shows itself as a reaction to the struggle with life. He points out a paranoid constitution which has a mixture of measureless self overvaluation and of suspicion.

For the most part these people are able to get along in society, though they come at times very close to the border of serious conflict. They may be reformers, discoverers, inventors, founders of religion, or statesmen, and they have sprung, they claim, from those of noble blood. Kraepelin grants that some of this type of person may be regarded, as Specht has claimed, as forms of a constitutional manic mood—a variant possibly of a manic-depressive psychosis. Many of the members of this Society have sparred in the legal ring over just such a situation in the person of a well known iron worker.

Again, it is possible to regard others in this group as latent forms of the Schizophrenia of Bleuler. They do not show the intellectual dilapidation that occurs in the schizophrenic. Naturally an analogous picture is not rare in dementia præcox, but the affect changes, the impulsive motor phenomena, the hallucinations, and the looseness and silliness of the delusion formation, which come to rule the picture, exclude this category of patients. A paranoid feeblemindedness is another group to be separated from this limited collection.

Kraepelin now erects a new symbol "paraphrenie"—unfortunately another old Greek term, used for almost as many mental pictures as paranoia. Under this concept he purposes grouping a number of his previous paranoid types of dementia præcox, whose relationship to dementia præcox he now would call in question. He still shows allegiance to Kantian psychology and the old Heinroth subdivisions, for in these patients it is largely the intellectual, rather than the emotional and will sphere that is affected. The personality suffers less change than in the dementia præcox patients. This group "Paraphrenie" is a purely provisional one, and time alone will decide, he says, whether it will be of value or not as a principle of group separation. His sub-groups are Paraphrenia systematica, Paraphrenia expansiva, Paraphrenia confabulatoria, Paraphrenia fantastica.

*Paraphrenia systematica* is Magnan's classical "délire chronique à évolution systematique," with the exception that Kraepelin takes out from Magnan's group some true dementia præcox cases, and

*Zeits. f. d. g. Neur. u. Psych. 11, 1912, pp. 6, 7.

those who show more than a mental enfeeblement. Paraphrenia systematica will not include profoundly dementing forms. These must not be considered as paranoias in his sense, since there are hallucinations, and there is a definite disease which leads to definite invalidism.

*Paraphrenia expansiva* is a term for a rarer type: apparently a truly feminine type. There are gradual development of ideas of grandeur, with mild excitement, loquacity, and occasional outbreaks. Ideas of persecution (visions) are subordinate. The conduct is usually orderly, and not continuously influenced by the delusional ideas. There is marked chronicity, with slight diminution of judgment, and more diffuseness, but no true dementia.

*Paraphrenia confabulatoria* envisages those individuals with delusions founded upon memory falsifications. The patients are orderly and clear, have delusional ideas of persecution and grandeur, associated with delusional experiences of the past, which they dress up and continually remake, adding new to old, all on a basis of memory falsification. The patients are usually active and approachable, but their general conduct is often influenced by their delusional interpretations. There is a gradual breaking down of the patient with increasing incoherency in the delusional ideas. Hallucinations are not present, there is no schizophrenic modification of the personality.

*Paraphrenia fantastica* takes in the majority of Kraepelin's previous dementia paranoides cases. These may be atypical præcox cases. He expresses the hope that anatomical data may avail to separate them.

Kraepelin then goes on to discuss other paranoid conditions, such as occur frequently in other psychoses. He lays stress upon such states as are found in the manic depressive, senile, and presenile and toxic paranoid states, such as cocainism, alcoholism, tabes, certain syphilitic psychotic states. Paranoid prison psychoses are mentioned, paranoid psychoses of the deaf, paranoid mental contagions, and finally a group of the litigious or querulants, so well written upon by Serieux and Capgras. I must limit my discussion to this bare outline of his recently expressed views.

And now in conclusion let me briefly sketch the development of a paranoia concept, along entirely different lines. These are trends that show less interest in the psychotic picture—they seek if possible the genesis of the condition. Not how does it look and what shall we call it—but, how did it come to be, and what can we do for it? Can the condition be understood in terms of dynamic agencies; is its development comprehensible; and must it necessarily go on to the final ends which present day descriptive psychiatry is foretelling?

There have been attempts at dynamic explanations. Sophocles and Euripides involved the Brown Furies. The devil of the Middle Ages loomed large in the psychiatry of this long submerged period. A recent District Attorney of New York City declared that thrashing would drive out the "evil of a mind diseased."

The dynamic, or genetic conceptions of the Freudian school, were first foreshadowed in an interesting study appearing in 1896 (on a patient suffering from what he termed a chronic hallucinatory paranoia).* Freud first enunciated here the idea that this type of case may represent a form of defence to painful reminiscences, and the content of the psychosis, *i.e.* the clinical picture, is determined by the content of the repressed painful ideas. Special forms of displacement or distortion probably have to be sought for, and Freud believed he saw in this patient processes allied to the defence mechanisms found by him in the Compulsion Neuroses. The initial reproach—usually resulting from certain infantile foolish actions—often of a sexual nature—becomes repressed through a primary defence—often of self distrust. The return of the repression then determines the content—voices—hearing one's thoughts read or spoken. The secondary defences, such as appear in the compulsion neuroses, *i.e.* the compulsive thinking, ties, acts of touching, etc., etc., did not show in this patient, but there resulted a transformation of the ego as a reaction compromise. He did not pursue the question further at this time, but this work supplied the stimulus and gave direction to the studies of Bleuler, Jung, and Firenczi, which have resulted in the masterly synthesis of Schizophrenia, and the development of the psychanalytic method for the study of the psychoses.

The necessarily summary character of this address precludes the laying down of the steps which made it possible for Freud to outline at greater length his conclusions regarding paranoid mechanisms as shown in the now celebrated case of Schreber, the one time President of the Senate of Saxony.* And furthermore, I regret that I can only give you a very fragmentary condensation of the situation as he sees it. To obtain an adequate grasp of the mechanisms at work one must read the Schreber case. Furthermore, Bjerre's excellent résumé of a four months' psychanalytic treatment of a paranoid condition of ten years' duration should be read and re-read if a true estimate of this trend of thought relative to paranoid states is to be obtained. This therapeutic victory, over a disease process which has been so resistant to all therapy in the past, marks a milestone in psychiatry.

Bjerre, in discussing the theoretical aspect of his case, first accepts the Bleuler-Jung hypothesis of the "complex." But the relationship of the buried complex alone to the rest of the personality is not enough, he says, to explain the whole situation. Other mechanisms are at work. There were an unusually marked "male protest," marked sexual repressions, strange sublimations, and also some peculiar constitutional anomalies. The repressions which he worked out are considered in a strictly Freudian sense. Freud has thought to show that, varying with the mode of handling these repressions one can posit certain reaction types. If the repressions are *converted* into bodily symptoms, the well known hysterical reaction type appears; if *substitutions* and defences are resorted to, one has the obsessional, compulsive type of reaction, while if the repression is of a certain type and is handled by an outward *projection*, one speaks of it as a paranoic reaction type.

This projection, Freud suggests, takes place in somewhat of the following manner: An inner realization, or perception, is suppressed, but apparently must come into consciousness and be disposed of in some manner. When this handling takes place, it is by a process of disfigurement or distortion, as a perception from the outside world, and then one speaks of it as a delusion. A delusion of persecution, for instance, then is to be read as a disfigurement or a distortion of a love impulse, which love

*Neur. Centralblatt* XV, 1896, p. 442. "Nervous and Mental Diseases, Monograph Series," No. 4. Second Ed., 1912, pp. 165-174.

*Jahrbuch für Psychoanalyse, Vol. III.

becomes impossible for reasons peculiar to the individual and his cultural, ethical standards. The love then becomes transformed into hatred, and is projected upon the outside agent. There is, in Jung's phraseology, a projected negative transference.

Why is it that love becomes impossible, and must suffer a negative transference as hatred? This in Freud's view is apparently the crux of the situation. For him it is because of the unconscious existence of an accentuated homosexual component in the personality of the particular individual who shows a paranoid type of reaction.

It may be recalled that, in his "Three Contributions,"* Freud attempts a sketch of the normal psychosexual evolution of human beings. The term "autoerotic" symbolizes one of the large phases of this evolution towards a normal heterosexual development. This phase or period occupies much of the so-called "latent period" in childhood, and is divisible into a number of periods—the Narcissism and the homosexual period being most characteristic. These may be recognized as intermediate stages, which some individuals never pass beyond. They remain attached or fixed in smaller or larger part to these developmental stages.

In the average individual the homosexual component finds adequate outlet in friendship, in companionship, in the altruistic feeling for humanity and its common good. Those who cannot rise completely out of Narcissism, and are thus prematurely fixed or arrested in the evolution of their psychosexual disposition, are exposed to the danger that a flood of energy, which finds no outlet (thus the frankly homosexual, in the vulgar sense, rarely suffers) sexualizes their social tendencies, and causes the sublimations which culture has evolved, to be reversed.

The results of those analyses thus far obtainable point to the fact that the paranoid patient is engaged in a struggle against the sexualization of his social tendencies, and that he has a *locus minoris resistentiæ* in his autoerotic, narcissistic, or homosexual phases.

There may therefore arise several possibilities in the paranoid type of thinking. Thus the paranoid erotomaniac endeavors to evade the issue—he is unable to say "I do not love *him*"—a homosexual object—but, "I love *her*, to devotion," which by a process of projection becomes—"She loves me."

A male paranoid is in an unconscious struggle with the dimly perceived, or instinctively-felt longing for another man. His defence is the conscious projection of being hated, being persecuted by the man. The love which must not be permitted to exist is distorted into the hatred which he must feel for one, who at one time was much admired, but who now projectively persecutes him.

It is not needed that I go further into this situation by further examples of the paranoid distortions that take place in the delusions of jealousy so frequent, for instance, in alcoholic paranoid states. Here the reductions of cultural, sublimation processes induced by the alcoholism, raise the homosexual possibilities nearer to conscious perception, and thus there is established an active need for a defence reaction. It shows itself as a jealousy directed against the woman, and a projection in which the males become loved by the wife.

Freud soon met with the experience that the projection mechanism alone was not a sufficiently pathognomonic mechanism to utilize as a diagnostic criterion. In fact projection may appear as a perfectly normal mechanism. We all use it every day. Much of our dislike for our fellow men is projected as faults which we assume they possess. When, however, projection appears with the autoerotic fixation, the after active repression, or negative transference, and a final failure or breaking through of the repression into consciousness, there to be handled by projection—then one has the paranoid type of thinking.

It would be a fascinating program to endeavor to fit the various clinical series, which have been outlined as Kraepelin's latest deductions, with the general mechanisms here briefly outlined. For even as now understood there are enough variants, particularly in the autoerotic fixations, to permit an attempt at such a series of correlations. Freud views the whole delusional dynamic as one of reparative value. It is a reconstructive or healing process. Those who seem to come off best in the fight, it may be suggested, are apparently the simon pure paranoias of Kraepelin, so far as dilapidation of the personality is concerned. Here the regressions only sink to those auto-erotic phases most closely allied to present states of culture. Should the regressions sink lower, however, the distorting projections are more violent, and the personality suffers more. These are, I may suggest, the various Paraphrenias of Kraepelin's scheme. Whereas, if the regressive libido sinks to the lowest levels—if it is withdrawn entirely from the outside world, *i.e.* if the conflict between instinct and ethical standards demands the sacrifice of the sexuality entirely, then there is nothing but death, either by suicide or by the withdrawal of the individual from the real world into a world of phantasy. Here the mechanism spells dementia præcox; in its hebephrenic form an unconditional surrender; in its katatonic types with periodic stormy protests and violent cataclysms, out of which occasionally the patient comes into reality, having fought out in the delirium its deliverance from some phase of its soul conflict.

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*"Nervous and Mental Disease, Monograph Series," New York.

## SURGICAL CONDITIONS OF THE ABDOMEN IN THEIR RELATION TO LIFE EXPECTATION.*

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In these days of rapidly advancing progress in surgical endeavor, when dreams of wondrous cures come true at the almost magic touch of the aseptic scalpel, when the domain of the internist is constantly and successfully being invaded by the surgeon, when living pathology is a fascinating reality and not a meaningless word, when men on every side are capable of solving difficult diagnostic problems and then of applying soundly and skillfully the needed operative measures, it is well to pause to note the sum total effect of all of this remarkable advance upon human expectation of life. In a general way we realize that great good has been accomplished. The growing popularity of surgery in the public mind stands upon the firmest of foundations—actual achievement. While definite and specific datum is not easy to secure, the broad evidence is eloquently presented in our vital statistics which show that human existence is appreciably

*Read before the Philadelphia Medical Examiners' Association, February 4, 1913.

lengthened decade by decade. Beyond a doubt preventive medicine is entitled to the first honors in this accomplishment, but surely next in order must be placed surgery, using the term in its widest acceptation; and when we add to the longer span of years, the decrease of pain and suffering and the consequent increase in human efficiency, the aggregate result becomes tremendously impressive in its magnitude.

The purpose of this paper, however, is not to pay tribute to surgery nor to hazard a prophecy as to its doubtless brilliant future, but to present to you certain generalizations, derived from surgical experience, which are applicable to life insurance examinations. It is, of course, impossible to specifically deal with any question concerning so uncertain a matter as the future, but just as the wise investor bases his judgment of the security of his investments upon past earnings, so it is possible for us to shrewdly estimate what an individual's expectation of life may reasonably be after we have closely investigated all phases of his past and present physical condition, and inasmuch as there are frequently arising problems which depend for their correct solution upon some appreciation of the surgeon's point of view, such as a latent surgical lesion the recognition of which is not easy, or the permanency of cure after operation, or the effect of operative procedures upon the general health, a short summary of the generally accepted opinions upon some of the commoner surgical conditions may prove acceptable. Of necessity my contribution must be incomplete and fragmentary in discussing so large a subject within reasonable limits.

Before taking up the few topics I have selected for discussion I wish to urge, with all the emphasis I can, a greater diligence and care in the methods employed to arrive at a sound conclusion as to insurability. Too often it happens, in my experience, that conditions which would have a material bearing upon the final judgment are either undiscovered, or, if noted, are glossed over as being relatively unimportant. It must be borne in mind that in modern diagnostics we are in a period of transition in which the older methods of physical diagnosis in many instances are being supplemented, or, indeed, sometimes supplanted by laboratory tests of tried and sterling worth. Forsooth, what hospital of today would assume to identify malaria without a blood examination or syphilis without a Wassermann? The lay public has learned to respect the ophthalmoscope, the stethoscope, and the clinical thermometer, but it has not yet come to the point of accepting with equanimity and conviction our routine examinations of the blood, of the employment of blood pressure apparatus, of the use of the Röntgen ray in other conditions than that of fractures, of the cystoscope, and of various other modern procedures the whole object of which is to make diagnosis more and more precise.

Of first importance in forming a sound conclusion, especially in abdominal conditions, is a good history. Only a few days ago I heard it stated in open discussion that the general practitioner never bothers to take a history. Personally I cannot believe that such neglect generally obtains. Certain it is that in life insurance work a history is always required, but it has seemed to me that sometimes it has been too circumscribed, too often bound down by the formalism of printed questions which must be answered, and not often illuminated by the searchlight of high intelligence. To secure a satisfactory history is a matter of tact and time, coupled with a keen appreciation of the relative importance and significance of the facts elicited. To illustrate my point I may mention a circumstance which occurred in Philadelphia not long ago. A physician of international reputation was called in consultation from a neighboring city to see a prominent man who was acutely and seriously ill of an obscure abdominal disease. He devoted just an hour to the development of a painstaking and thoughtful history, about five minutes at the bedside, and then stated in tones of conviction that the disease was acute pancreatitis. Operation was immediately done, the diagnosis confirmed, and the patient recovered.

In the actual examination of the applicant for life insurance insufficient attention, as a rule, is paid to the abdomen. Much may be learned by systematically inspecting, palpating, percussing, and, indeed, auscultating the belly. To the trained observer it is an interesting region from flank to flank, from the umbilicus to the posterior layer of the perinephric fascia. While slight variations of location of some of the abdominal viscera are entirely compatible with perfect health, yet the boundaries beyond which organs do not go without indicating disease should be clearly recognized. The margins of the liver and spleen are usually outlined in routine examinations but how often are the kidneys investigated save by urinary examination? The normal situation of the gall-bladder, the appendix, the pylorus, the cecum, and the sigmoid should always be kept in mind and these areas carefully palpated. In the absence of bismuth meal skiagraphs we can still do something in determining the size and location of the stomach, colon, and small intestine by closely observing the pitch of the percussion note as it varies with the different calibres of the alimentary tube. Even the anterior abdominal wall may be highly suggestive of intra-abdominal disease. Inequality of muscle resistance, alteration of abdominal reflexes, dilation of the superficial venous tracery are three factors, among others, which are never without significance. But these are merely a few suggestions, and many others will doubtless occur to you.

One of the most interesting of intraabdominal diseases is that of appendicitis. As far as its acute forms are concerned it is obviously not a subject for consideration by the life insurance examiner. However, not infrequently questions arise as to the insurability of, first, the individual who has had an attack of acute appendicitis but who has recovered without operation and in whom there may or may not be indications of appendiceal irritation; second, the individual who has definite signs of local tenderness at the time of examination or whose history shows transitory attacks of the so called appendiceal colic, and, third, the individual who has undergone operation.

As to the first question it may be stated axiomatically that a patient who has had one attack of appendicitis is always liable to another unless the appendix has been removed. This liability is proportionately greater if, by reason of the first attack, there is left ulceration, or narrowing or blocking of the lumen at any point. Fortunately these changes give rise to a palpable and tender appendix, at least at times. Naturally such a patient cannot be considered a good insurance risk under any circumstances and should be advised to undergo an interval operation, an operation which,

as you know, carries with it substantially no mortality in the hands of a competent operator. Now and then there are cases which are seemingly well during the interval but a second, or yet a third, attack, finally points the way to the operating table. Like every good rule there are occasional exceptions to it, and every physician of wide experience has seen a few instances where an attack, usually a mild one, has completely cleared up and the patient has remained exempt throughout the rest of his life. The obvious impossibility of picking out these rare exceptions leaves us no alternative to our ordinary advice.

As to the second question I have already indicated my views with respect to the patient who has a tender and palpable appendix at any time and a history of a previous attack of acute appendicitis. Sometimes you will meet an appendix subject to a low grade, catarrhal infection. It is usually characterized by occasional twinges of pain, frequently vague digestive disturbances and constipation, now and then a little local tenderness, but never fever nor vomiting, and never any serious manifestations. Sooner or later there is an overgrowth of connective tissue fibres and by process of cicatrization there is a gradual obliteration of the blood vessels, lymphatics, and the epithelial elements. It is the type of appendicitis in which the patient diagnosis his own malady and lets you know all about it in tiresome detail. Dr. Robert T. Morris has delightfully, though metaphorically, described it as the form in which one end of the appendix is attached to the cecum and the other to the cerebral cortex. Practically it has no mortality and as such might be acceptable to the insurance companies, but the general impairment of health due to the digestive derangements and to the associated mental perturbation makes it highly desirable that operation be done. As a matter of fact my experience has been that patients having obliterative appendicitis are only too willing to submit to the knife.

On the question of judgment in accepting for insurance postoperative cases I have a suggestion or two to make. In an otherwise healthy person who has been operated on during an interval or at an early period of an acute attack, in brief the ordinary case which is closed without drainage and in which there have been no complications, I can see no reason why such a person should not be taken as a first class risk, provided always that at least three months shall have passed since the operation. My reason for this short delay is because there is a remote possibility of incisional hernia occurring within that period but not later.

It is in the cases where abscess has occurred, or general or diffuse peritonitis has been present, the cases of necessitous drainage, that we are sometimes in considerable doubt as to the probable future state of health. Sound judgment here is only possible with the fullest information about the acute attack. Fortunately, as a rule, this is available through hospital records, since these cases are almost without exception treated in a hospital. Perhaps the first question to be determined is whether the appendix has been removed. The consensus of surgical opinion is decidedly in the direction that an unremoved appendix, or even an appendiceal stump, may relight in inflammation at some future time. The older idea that the appendix always sloughed away and gave no further trouble has been shown to be erroneous. Coley concluded after investigating a large number of cases that about 20 per cent. recurred. Another phase worthy of inquiry concerns the extent and character of the adhesions. These are important in their bearing upon disturbed intestinal motility and particularly upon the future liability of obstruction, either acute or chronic. While it is not possible to accurately gauge postoperative adhesions something may be surmised by learning the extent and direction of the infection, the character of the drainage and its duration, and perhaps the bacteriological findings. Secondary operations for residual abscesses, for obstruction, or for any other cause not only raise the immediate mortality rate but also increase the chances of future morbidity. As a matter of fact, it has been amply demonstrated by autopsy and by operation for other subsequent conditions that the primary adhesions of the average operated case largely disappear in the absence of continued infection. Mumford says that 94 per cent. are ultimately well, while only 6 per cent. show by pain or other phenomena the presence of disturbing adhesions. There is, however, in all drainage cases a distinct liability to acute obstruction within a period which may be roughly put at about two years after operation.

Finally it must never be forgotten that the scar resulting from appendiceal drainage, no matter where placed, is a weak one and singularly liable to hernia, and, furthermore, that incisional hernias are apt to become dangerously strangulated.

In summing up I would advise the acceptance of a person who had been drained for appendicitis provided two years had elapsed during which no obstructive or painful phenomena had occurred, no hernia was then present, and it was affirmatively shown that the appendix had been removed in its entirety.

With reference to ordinary hernia I am told that the usual practice of the insurance companies is to accept men so affected if they agree to wear a truss. It would seem that this attitude represents a compromise forced upon the companies by the relative frequency of the condition, a compromise in which business has had a voice. Surgically speaking, every man who has a hernia is materially substandard in physique and the wearing of a truss is only a precautionary measure which is often sadly inadequate. I am under the impression that personally I have operated for strangulation more often on truss wearers than on non-truss wearers. The truss does good and apparently accomplishes many cures but this is always prior to the 20th year. Between the 20th and 40th years, in the period of life when radical cure can be done with ease, safety and success, it may prove competent but frequently does not. After the 50th year, despite its use, there is a progressive likelihood of inflammation, incarceration, or strangulation.

The risk in ordinary reducible hernia must be estimated purely from the basis of possible complications, since there is no impairment of the general health incidental to its presence. Assuming that the present ruling holds it is still thoroughly worth while to verify the simple character of the rupture. The possession of an inguinal hernia of unusual size, or of one which frequently eludes the truss, or of one which can only be reduced with effort or pain, or of one which has omental or intestinal adhesions in the sac or even to the margins of the hernial opening, would in my judgment serve to disqualify; and further it might always be well to thoughtfully weigh such collateral facts as occupation, personal habits, and usual habitation in their

relation to that particular hernia in that particular individual before deciding affirmatively.

In passing, attention must be called to the frequency with which maldescent is seen associated with hernia and to express an opinion that such cases are not insurable on account of the well-known tendency of the undescended testicle to sarcoma, as well as for other causes.

Femoral hernia carries a somewhat greater risk than inguinal hernia. The control exercised by a truss in the femoral region is far less certain and satisfactory; strangulation is distinctly more apt to occur and is decidedly more liable to be followed by fatality. And, finally, some forms of hernia should always be declined on account of the unusual or undeterminable risks. I refer to umbilical in the adult, incisional, and the rarer forms like interstitial, sciatic, gluteal, and others.

The postoperative phases of hernia may be dismissed in a few words. As is perfectly well recognized, the modern radical cure is one of the most certain and satisfactory operations known. It has a theoretical mortality of one-quarter of one per cent., practically amounting to nothing, while the chance of recurrence varies from 5 to 8 per cent. The latter sometimes can be anticipated at the time of operation, for example, failure is apt to follow wound infection, but this is not always true and now and then a recurrence is seen without ascertainable cause. However, in the vast majority of cases a relapse, if it is going to occur, will be apparent within six months. Strangulated hernia, or hernias in which there are any unusual features, show a much higher percentage of relapses, and it should always be remembered that with the former secondary operation for obstruction is not infrequently necessary.

In turning our attention to the upper abdomen we approach a region which holds deep interest for all of us. While a huge mass of literature upon the various surgical conditions of this area is available on almost every question which concerns us as practitioners of physic yet when a search is made for specific information to guide us in estimating the remote effects of surgery in relation to life expectation we are disappointed by the meagre material at hand. The reason for this is not far to seek. As we know active interference in the upper abdomen has been extraordinarily successful in its immediate life saving results, but when it is recalled that this has only been true within the last ten or fifteen years, when many of the more important operative procedures have been placed on a sound and generally accepted basis, it is not strange that insufficient time has elapsed to give us a proper perspective in this direction. It is therefore only possible to venture opinions in a conservative and tentative manner. From other possible topics I have selected for brief consideration two groups of disease in this neighborhood, the gall-bladder in its relation to infection, and ulcer of the stomach or duodenum.

The symptomatology of chronic or latent disease of the biliary passages is too complex and difficult for casual presentation and therefore in this paper I shall strictly confine myself to some remarks upon the postoperative aspect. It is singular that with the immense literature now at our disposal there are very few papers which deal with end results in a comprehensive and instructive manner. Kehr, McWilliams, Taite, Monroe, and, more recently Stanton, are notable exceptions who have furnished valuable statistics in this field. The latter, in a paper on "End Results in Gallbladder Surgery," published in the Transactions of the Surgical Section of the American Medical Association in 1911, has made a careful analysis of a large series of cases operated upon by Ochsner, McMullen, and himself. Substantially his conclusions coincide with those of the other writers I have mentioned.

Stanton divides his cases into those in which gallstones were found and those where cholecystitis was present but no gallstones were found. In the first group 79 per cent. were found to be entirely cured by the operation, according to the statements of the patients, while 6 per cent. reported themselves as well with a few minor discomforts, so that a total of 85 per cent. of good results may be reported. Of the remaining 15 per cent., 9 per cent. were improved and only 6 per cent. were doubtfully improved or no better than before the operation. In 2 per cent. secondary operations were necessary to accomplish cures, in 3 per cent. postoperative hernias ensued, and in 1 per cent. there was recurrence of calculi. Chronic pancreatitis was found in 4 per cent. and of these 90 per cent. were cured.

In the second group, that of cholecystitis without gallstones, the end results were anything but satisfactory. Only 46 per cent. of the patients reported themselves to be cured and 10 per cent. were classified as satisfactorily improved. With 23 per cent. there was improvement and in 19 per cent. there was no benefit or the patient was worse.

As might be expected in both groups the proportion of poor results was increased by associated visceral lesions elsewhere, and particularly was this true if the lesion was pelvic. Among all cases from all sources, numbering nearly 1,800, I have been unable to find one of carcinoma of the liver or biliary passages in which recovery has taken place.

It will be seen, therefore, that the permanent results of operations for the removal of calculi are perhaps as satisfactory as those seen in any important field of surgical endeavor. He who runs may read, and the life insurance examiner may very properly infer that the great majority of individuals who have been operated on for gallstones, and in whom after a reasonable lapse of time there have been no untoward phenomena, are perfectly acceptable for insurance. With respect to the operated cases of cholecystitis without gallstones, especially if there are other visceral lesions, an attitude of considerable wariness would seem highly advisable.

It is highly probable that at least one-twentieth of all mankind are affected at some time during adult life with gastric or duodenal ulcer. Between the ages of twenty and thirty it is apt to be acute and only involve the mucous membrane, to be more often seen in women, and its site is usually gastric; from thirty to fifty it is apt to be chronic and cause deep induration and adhesions, to affect more men than women, and the situation of the ulcer is more frequently duodenal. The area subject to ulceration is not extensive and a distance of six inches, with the pylorus at the center, will cover the great majority of all peptic ulcers. As a rule, the acute ulcer either disappears spontaneously or is readily curable by simple measures, and, as far as known, the resultant scar is innocuous. Exceptions occur but in the main a cured acute ulcer generally may be dismissed as a life insurance factor of importance. But with chronic ulcer the situation is vastly different and the subject is entitled to our careful consideration.

In no disease which presents such wide variations

of symptoms as chronic peptic ulcer is it possible to formulate the phenomena which will unerringly point to its certain recognition. Especially handicapped is the medical examiner, who is shortsightedly denied the opportunity of verifying his suspicions in this direction, by such valuable and oftimes conclusive measures as the bismuth skiagraph and the gastric analysis for blood, pus and hydrochloric acid. It is, therefore, incumbent upon him to develop the diagnostic faculty to the highest possible degree with the limited means at hand. Of these by far the most important is the personal history. Just as our suspicions of biliary duct disease should always be aroused by a history of typhoid fever, so should a history of chronic indigestion, especially a painful indigestion which may or may not have long periods of quiescence, direct our keenest diagnostic focus toward the area of the stomach and duodenum. In this connection it may be comforting to recall that in actual practice many cases of chronic ulcer are satisfactorily diagnosed by the history alone and with which the laboratory tests are only used for confirmation.

Let us briefly run over the more important symptoms in the average case derived from a good history. Pain is a very constant phenomena and occurs in nearly 95 per cent. of all cases. In gastric ulcer it referred to the epigastrium and may radiate to the left shoulder; it is increased by the ingestion of food, and is experienced from half an hour to three hours after eating. In duodenal ulcer pain is also felt in the epigastrium, with occasional referred pains in the back, but it occurs in definite cycles lasting a few days or several months with complete remission of all symptoms during the interval. It is most marked from two to five hours after eating. It is relieved, at least in part, by food, water, alkalies, or vomiting. To be awakened at night by pain which is quieted by the indigestion of a biscuit or a glass of milk is a story typical of duodenal ulcer, and quite as characteristic is the self-taught habit of using bicarbonate of soda to temporarily relieve the distress and burning pain. Epigastric tenderness in either form of ulcer may or may not be present and is only well marked in the presence of localized peritonitis. Vomiting is a prominent symptom in many cases of gastric ulcer and it usually occurs with some degree of regularity between one and four hours after eating. It is not so frequent with duodenal ulcer though it may occur irregularly and at intervals of three or four days. Gaseous and sour eructations and gastric distention are seen in nearly every case. Hemorrhage is common only in acute gastric ulcer, uncommon in chronic gastric ulcer, and very rare in duodenal ulcer save in an occult form. As a rule, loss of weight is slight, and any great reduction of weight should arouse strong suspicions of malignancy. Finally, neurasthenia in its minor phases is very frequently associated with chronic peptic ulcer, especially if it is on the duodenal side of the pylorus.

It is a matter of the utmost importance to sound insurance work that any form of this disease should always be recognized if it is humanly possible to do so. There can be no debate upon the question of the non-insurability in peptic ulcer, acute or latent. I would even go so far as to give as my personal opinion, that an honest suspicion of the presence of this lesion is sufficient grounds for a medical examiner to decline any applicant for insurance. To merely enumerate the serious and dangerous conditions which are liable to develop furnishes convincing argument in favor of this opinion. One possibility is hemorrhage, which may be constantly slight but enough to lead to serious anemia, or intermittent which may profoundly depress the vitality and lower the bodily resistance, or sudden and overwhelming which speedily results in death. Another is perforation, either acute and causing one of the most classic of abdominal tragedies, or chronic and giving rise to perigastric, subphrenic, or subdiaphragmatic abscess with a discouraging rate of mortality. In a third group may be mentioned perigastric adhesions, pyloric stenosis, or cicatricial distortions of the stomach, any one of which may seriously and permanently affect gastric function and lead to invalidism and death. A fourth possibility of indirect character is seen when von Mikulicz's statement is quoted that 20 per cent. of these cases die of pulmonary tuberculosis. And, finally, must be mentioned the relationship of chronic ulcer to cancer. Writers differ somewhat upon this point but all agree that gastric carcinoma has its origin in ulcer tissue in at least 5 per cent. of all cases of stomach cancer. My own view, unfortunately without much experience to base it on scientifically, is that it is very much higher. Only a few days ago Dr. J. G. Bloodgood, of Johns Hopkins, told me that out of thirty excised ulcers examined by him, none of which were suspected, he found in two commencing cancerous change.

Much, though not all, of this dire record fades into nothingness as the result of modern surgery. Precise statistics are wanting but it is probable that from 60 to 70 per cent. of all cases of peptic ulcer are permanently restored to perfect health by the performance of simple and well-recognized operations, of which posterior gastrojejunostomy is the most widely applicable. If it were not for the remote possibility of cancer developing later in the scar of the healed ulcer these cured patients might be considered quite as good risks for insurance as if they had never had a lesion. As it is the recognition of this fact, as well as the growing knowledge that ulcers may be the actual though unsuspected seat of cancerous or precancerous change, has led many leading operators to routinely excise the ulcer at the time the gastrojejunostomy is done. For reasons which are not clear the liability of cancer is much greater in gastric ulcer than in duodenal ulcer.

To sum up the subject of peptic ulcer in its relation to life insurance I may offer the following conclusions: That the history of an acute ulcer in early life, followed by a perfect recovery as shown by unimpaired gastric function, may be ignored.

That any fact or facts pointing to the presence of gastric or duodenal ulcer, active or latent, at the time of examination should absolutely preclude a favorable recommendation.

That a history indicating the existence of a chronic ulcer in the past, in which recovery has apparently taken place and where considerable time has elapsed, should be considered as doubtful. In this connection it should never be forgotten that over 50 per cent. of medically cured cases recur.

That in an operated case the judgment may be favorable if full information of the nature of the lesion and of the operation is obtained, if the patient has been symptomless and shows other evidence of full recovery, and if sufficient time has elapsed, say three years, to insure the permanency of the cure.

That incisional hernias in the upper abdomen are very rare, at least with the American surgeon, and a full half of those that occur are featureless.

In closing I wish to apologize for many omissions pertaining to the subjects I have discussed, and particularly do I regret that the limitations of a short paper have prevented even a mention of such interesting fields as the kidney, the prostate and bladder, the rectum, the female pelvis, visceroptosis, and others.

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## VAPOR ANESTHESIA AND ITS ADVANTAGES.*

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About a year ago the French Hospital acquired a Gwathmey Vapor Apparatus, which has since been used by the internes in all cases, approximately 800. The advantages of this method over the closed and drop methods formerly employed, were so apparent that it soon replaced them as a routine procedure.

The apparatus consists of three bottles placed together, with a single stop-cock. In the first large bottle is placed 4 oz. of ether; in the second, which has a small glass container, 10 oz. of chloroform, and in the third some hot water, to which may be added one or two drachms of the essence of orange, in order to disguise the odor of the ether. The foot-pump which comes with the apparatus, forces the air through the ether, and then through the medicated hot water, heating it and disguising its odor before it reaches the patient. The chloroform is treated the same way. The stop-cock is so arranged that the anesthetics may be given separately or in combination as desired.

Instead of using the open mask which comes with the apparatus, we use a metal one made according to a design kindly loaned us by Dr. Gwathmey. This mask allows the use of the gas-ether-vapor sequence. It also gives us a closed method of anesthesia.

According to our custom, the interne anesthetist makes it a point to see all patients before they come to the operating room, and usually orders ⅛ gr. morphine one hour before the operation, and another ⅛ + 1/150 atropine a half hour before. The quantity of morphine, and of atropine when it is given, varies according to the age, size, and condition of the patient.

The patient in due time is brought to the etherizing room. The gas bag is filled and the mask is placed over the patient's face. Before the gas is turned on, however, warmed air, carrying some of the essence of orange, is pumped into the mask so as to allay the patient's nervousness; then the gas is turned on. When the patient shows signs of beginning unconsciousness, the disguised ether vapor (warmed) is turned on; the quantity being gradually increased until the air carried through the tube is saturated with ether.

Owing to the preliminary medication, the patient comes to the etherizing room in a tranquil state of mind, and takes the anesthetic quietly, the chances of psychic shock being thus lessened.

On turning on the warmed ether vapor, the smothering sensation, coughing, or spasm of the larynx, which patients sometimes experience with cold ether, does not occur. The patients go under easily, and the stage of excitement is almost always absent. The respirations are normal, the pulse is regular, and the color is good. The operation can easily begin in from 5 to 10 minutes after the mask is applied.

For alcoholics, athletes, and in all patients who require larger doses of ether than usual in order to become narcotized, we attach between the gas bag and the face piece the ether chamber from any closed ether apparatus. I have noticed in almost all cases where this arrangement is used that when the cold ether is turned on, however gradually, the patient immediately begins to swallow and show signs of ether irritation, even though previously getting a saturated warmed ether air.

The majority of patients say that the sensations while narcosis is being induced are not as disagreeable as they were led to believe. If they have taken a cold anesthetic on a previous occasion, they usually mention the absence of the disagreeable "smothery" feeling during the induction. In the hands of the experienced anesthetist the patients do not have this feeling, but one-third to one-half of the patients narcotized by the average interne will complain of it. This is eliminated when warmed ether vapor is used.

During the narcosis the patient's pulse and color are nearly normal, the respirations are quiet and regular. The mucous râle and snore are absent.

Another advantage of the Gwathmey vapor apparatus is that the percentage of air and ether can be kept at an even plane and increased or decreased at will. This apparatus allows a more even plane of anesthesia, because in it we have a mechanical device with which we can absolutely regulate the amount, so that the patient gets the same strength vapor with each inspiration and more or less according to necessity. On the other hand with the drop and closed methods, the amount of ether given is regulated by the eye, and is learned only from long experience, vapor strength even then being irregular.

A fact which very soon came to our attention after using the warm ether vapor was that sponges, suction apparatus, and other means for the removal of saliva and mucus from the throat, were unnecessary as the warm ether vapor did not excite the salivary glands to hyperactivity.

We also noticed that there was little or no bronchial irritation. The patients with chronic lung affections did as well with the warmed ether as with cold chloroform. Since this apparatus has been in use, we have narcotized ten patients suffering from pulmonary tuberculosis, and in none of those cases did any post-operative bronchial irritation develop.

In operations on the head and neck the vapor method is far superior to the other methods, as it requires the anesthetist to use less space than with the open cone or closed mask, there being no need of dropping ether on the mask or in the ether chamber. When the patient is under and the mask set, the operative field may be draped without fear of the anesthetist dislodging the towels or unsterilizing the field by his movements.

In operations on the nose and throat, this apparatus, plus the Gwathmey-Ferguson mouth gag, allows the maintenance of an even, continuous narcosis with the anesthetist absolutely out of the way of the operator or his assistants. After an operation for ranula, in which this method was used, the operator remarked that he had had as much comfort and freedom of movement as in any laparotomy.

*Read by invitation before the New York Society of Anesthetists at New York Academy of Medicine on May 15, 1912.

In tonsillectomies, where the operator wishes to work slowly and carefully, the mouth-gag method, plus a suction apparatus for the blood, gives an almost ideal field for operating.

According to animal experimentation, consciousness will return more quickly in a warm room than in a cold one. With this apparatus we are able toward the end of the narcosis to pump into the mask a large amount of warm air. This not only seems to hasten the recovery of consciousness, but also to reduce the post-operative nausea.

The post-operative vomiting is absent in about 60 to seventy per cent. of all cases. We seldom have a case of protracted vomiting. In the six months just passed, no patient has had to have his stomach washed for post-operative vomiting from the anesthetic where the warmed ether vapor was used. In the six months previous to that, when cold ether was used, we had an average of one or two a month.

The post-anesthetic delirium or "ether jag" is absent since using the warm ether vapor with a preliminary hypodermic of morphine. The patients are placed in bed, and instead of tossing about and requiring to be restrained, they rest quietly for from 4 to 5 hours and then awake as if from a natural sleep.

The last fact with regard to the apparatus which I wish to consider is the small amount of ether used to keep the patient narcotized. In a series of 100 cases, 60 per cent. of which were laparotomies, we averaged 2½ to 3 oz. per hour. The excretion of this small amount of ether throws less strain upon the vital organs. With our former methods, 95 per cent. of the patients had post-operative albuminuria, and about 70 per cent. of these had hyaline casts. With warmed ether 30 per cent. of patients showed an albuminuria and only about 3 to 4 per cent. had casts. Of secondary importance is the saving of one half in the expense of the anesthetic, which recommends the apparatus for institutional work.

## THE DIFFERENTIAL DIAGNOSIS OF LOBAR PNEUMONIA.*

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When a patient is seized with a sudden chill, followed by chest pain, fever, cough, rusty sputum, herpes facialis, and respirations which are accelerated to a greater proportion than one to each four pulse beats, it hardly needs the corroboration of increased vocal fremitus, dullness on percussion, bronchial breathing with bronchial voice and whisper, to establish the diagnosis of pneumonia. But all cases are not so frank. Any of the classical symptoms or physical signs may be either wanting or misleading. This is due to the fact that pneumonia is not an inflammation of the lungs, but a general pneumococcus infection with the lesion in the lung as but one of the manifestations. Physicians who have been trained to look to the lungs, and to the lungs only, for evidence of pneumonia, will therefore often be in doubt, and will hesitate to announce the diagnosis. Yet the local lesion in the lungs may bear no proportion whatever to the severity of the pneumococcus infection, and, after the crisis has passed, the physical signs may show no change in the lung condition although the patient has come from a condition of extreme hazard into one of safety. The results of bacteriological examinations at autopsy have shown that general pneumococcus infection may even occur without any distinct localization in the lungs.[1]

The three classical stages of pneumonia usually described—engorgement, red hepatization, and gray hepatization—are not similar to any results of inflammation which we observe in other organs than the lung. The stage of engorgement is probably due to a slowing or complete stagnation of the blood current in the capillary vessels, which stagnation results in the escape into the air-cells of leucocytes, red blood corpuscles, desquamated epithelial cells, small strands of fibrin, and a large amount of serum. This stage lasts but a few hours, until the contact of air causes this transudate to coagulate into a solid, firm and airless exudate, and we then have the stage of red hepatization—so-called. These results are plainly mechanical and physical rather than inflammatory, as we ordinarily conceive the meaning of that term. But now begins Nature's effort at repair, shown by the pouring out of polymorphonuclear leucocytes which infiltrate this exudate and inaugurate the warfare which, when successful, results in the removal of the transudated material and the return of the lung tissue to normal. The consolidation of the lung, therefore, which occurs in pneumococcemia, is incidental to the curative process which Nature must set up to rid the organism of its invaders. And it must always be remembered that other bacteria besides the pneumococcus can cause the same leucocytosis and consolidation. It is probable that this process finds its site of election in the air cells of the lungs, because at that point the blood is most likely to undergo coagulation, for the reason that it is here that the blood loses its $CO_2$ and it is known that $CO_2$ has some effect in hindering the formation of fibrin. And as the lower lobes of the lungs are the most active, they are the lobes most frequently affected.[2]

This sketch of the pathology of pneumonia explains why we naturally turn to investigation of the lungs for the evidence on which to base our diagnosis, remembering always that pneumonia is a disease of protein manifestations and that it often presents abnormalities of type. Some points in the clinical history should put us especially on our guard. A good history is half the diagnosis, occasionally the entire diagnosis. During the prevalence of epidemic influenza, which prepares the soil for the microbe of pneumonia, especial care is necessary, as the physical signs may then be delayed until the fourth or fifth day and much harm may be done meanwhile by the use of coal-tar depressants, used for their analgesic effects. These cases of "grip penumonia" are usually cases of unrecognized lobar pneumonia from the beginning, and would show a leucocytosis from the beginning, in contrast with influenza. Of course, pneumonia may follow influenza as a sequel, especially when patients go out too soon, and it is a grave complication when it occurs. Abdominal pain may be a prominent symptom of the stage of invasion, especially in children, but will usually not be associated with rigidity of the abdominal wall. Meningeal symptoms are apt to mislead, and it should always be borne in mind that pneumonia in children looks like cerebral disease. Earache in children with disturbed pulse-respiration ratio should invite attention to the chest.

*Read before the Eastern Medical Society, January 10, 1913.

Convulsions are encountered in children, epileptics, neurotic individuals, drunkards, and the insane. Delirium may arise from various causes: fever, toxemia, inanition, delirium tremens, cyanosis, and meningitis, all occurring as complications of a pneumonia.

Free hemoptysis is very rare as an initial symptom and should always arouse the suspicion of a latent tuberculosis.

| | Pleurisy with Effusion. | Primary Lobar Pneumonia. |
|---|---|---|
| Onset: | Chilliness, persisting for a few days. | Acute, rigor, lasting one hour. |
| Pain: | Sharp, stitch-like, localized. | Acute, similar, but soreness more diffused. |
| Cough: | Frequent and irritating; no expectoration. | Accompanied by rusty or bloody expectoration. |
| Sputum: | Absent. | Shows pneumococcus. |
| Fever: | Moderate, continuous, decline by lysis. | Intense; crisis 5th to 9th day. |
| Prostration: | Moderate. | Marked. |
| Countenance: | Pale and anxious. | Congested; mahogany flush. |
| Herpes: | Does not appear. | Quite common. |
| Thorax: | Marked distention. | None. |
| Fremitus: | Diminished or absent. | Marked. (Absent when bronchus plugged.) |
| Percussion: | Flatness with great resistance. | Dullness, less resistance, sometimes tympany. |
| Neighboring Organs: | Displaced. | No displacement, if uncomplicated. |
| Change in Percussion: | By position, if sac is partly filled. | Absent. |
| Breath sounds: | Diminished or absent. | Increased. |
| Bronchial breathing: | Frequent, but diffused and distant. | Harsh, close to ear, localized. |
| Râles: | Absent as a rule. | Present in 1st and 3d stages, unless bronchus plugged. |
| Vocal resonance: | Diminished or absent. | Bronchophony (loud) unless bronchus plugged. |
| Friction sound: | In early and late stages. | None, except crepitant râles in first stage. |
| Aspiration: | Yields serum. | Yields few drops of thick blood. |

A moderate range of fever is not to be dreaded in pneumonia. Fever usually betokens a specific reaction against injurious materials which affect the tissues, and is, in its essentials, a protective reaction.[3]

The pulse rate is regarded by many as an index of the severity of the infection, and when it exceeds 120 in an adult is of grave concern. But the pulse rhythm, volume, and tension, must also be considered, and a comparison of the pulse rate with the systolic blood pressure as shown by the sphygmomanometer is helpful. When the blood pressure reading does not fall below the pulse rate, the outlook is excellent. The character of the breathing is often absolutely diagnostic. When the respirations are restricted by pain so as not to be sufficiently deep, cyanosis soon develops with distended jugular veins and cold extremities.

| | Primary Lobar Pneumonia. | Acute Tuberculous Pneumonia. |
|---|---|---|
| Onset: | Sudden, with chill and chest pain. | Gradual, with chilly sensations and bronchitis. |
| Sputum: | Viscid, sticky, rusty, contains pneumococcus. | Purulent, copious, blood-tinged, contains tubercle bacillus. |
| Temperature: | Continuous, ends by crisis. | Remittent, intermittent, without crisis. |
| Herpes: | Common. | Less so. |
| Sweating: | Not severe until crisis occurs. | Profuse night sweats. |
| Emaciation: | Not marked. | Well marked. |
| Consolidation: | Followed by resolution. | By cavity formation. |
| Limitation: | To one lobe or lower part of lung. | Extends from apex and affects both lungs. |

| | Lobar Pneumonia. | Bronchopneumonia. |
|---|---|---|
| Age: | Between 3 and 8. | Under 3, chiefly under 2. |
| Previous Health: | Good. | Delicate and debilitated. |
| Bacteria: | Pneumococcus. | Primary, pneumococcus; secondary, streptococcus, but usually mixed infection. |
| Onset: | Sudden, with well marked symptoms. | Gradual, sometimes insidious. |
| Course: | Typical, crisis usually 5th to 8th day. | Not typical, rarely crisis, lasts 3 or 4 weeks. |
| Involvement: | Unilateral, left base most, right apex next. | Bilateral, both lower lobes most frequently. |
| Râles: | Only early and in resolution. Unilateral. | Heard throughout. Bilateral. |
| Consolidation: | 2d or 3d day. Area sharply defined. | 4th to 7th day. Shades off. |
| Resolution: | Rapid, usually complete. | Slow. Often incomplete. May become chronic. |
| Relapses: | Rare. | Frequent. |
| Sequelæ: | None, except empyema. | Empyema, interstitial pneumonia, tuberculosis. |
| Mortality: | 4 per cent. of all cases. | 50 per cent. of primary, 65 per cent. of all cases. |
| Dyspnea: | Less marked. | Marked. |

Albuminuria is found in about one-half the cases. It is usually transient, except in drunkards and those previously afflicted with kidney insufficiency. Splenic enlargement, as in other acute infectious diseases, is often found. The blood furnishes valuable diagnostic, as well as prognostic, information. A moderate leucocytosis is distinctly favorable. A high mortality attends cases with leucopenia. Thus of 108 cases without leucocytosis, 94 were fatal.[4] In diagnosis, the presence of leucocytosis excludes malaria, typhoid fever, uncomplicated influenza, uncomplicated tuberculosis, measles, and non-suppurative parotitis.

In contrast to the usual type of pneumonia, certain clinical varieties are sometimes puzzling. Wandering or migratory pneumonia may affect different small areas at different times, prolonging the course, delaying the evidences of crisis, and making recognition difficult. Senile pneumonia has a very insidious onset, without much fever, with low leucocyte count, with very evident cardiac weakness, and with tendency to failure of resolution ending in fatality or with termination in abscess or gangrene of lung. Apical pneumonia is usually attended with delirium and hyperpyrexia. Central pneumonia, beginning in the deeper parts of the lung, may not show definite physical signs until the process approaches the surface, but will present fever, leucocytosis, and accelerated respiration rate. Postoperative pneumonias are becoming less frequent since greater attention has been paid to skill and care in anesthesia. Lobar pneumonia in childhood often presents a very different clinical picture from that in adults, and yet one so characteristic that the Sisters of Charity in charge of the children's wards at St. Vincent's, and at the Foundling Asylum, often make the correct diagnosis by inspection

alone. The children are listless, "dopy," flushed, feverish, coughing, and the respiration-pulse ratio increases from 1 to 4, to 1 to 3, or even to 1 to 2. You may get dullness or râles later in the disease, but in the beginning you must depend upon sudden onset, fever, prostration, and disturbed respiration-pulse ratio, as indications of the invading toxemia.

Keeping in mind then the various aspects which pneumonia may present, we next invoke the aid of physical signs to elucidate our diagnosis. Mensuration of the chest yields little information of practical value. Inspection may show limitation of the respiratory excursions of the chest and diaphragm with perhaps compensatory excursion of the healthy side and increased action of the accessory muscles of respiration. The results obtained by percussion during the early congestive stage or even throughout the disease in central pneumonias, may leave us much in doubt. Auscultation gives us the most characteristic sign in the early stages, namely, the crepitant râle, and associated with this we have diminished vesicular murmur, which later becomes bronchovesicular and finally broncheal or tubular breathing. But often tubular breathing is absent throughout the attack owing to obstruction of the small bronchi with excessive secretion. In fact, in very many cases of pneumonia in the early stages we must depend for diagnosis upon a circumscribed area of feeble and indistinct breathing compared with the opposite side, crepitant râles, slight increase in intensity and clearness of vocal resonance.[5]

When a careful review of the patient's symptoms is supplemented by these physical signs we are prepared to admit the diagnosis of lobar pneumonia, but must bear in mind the possible complications of that disease. As these are really expressions of the pneumococcus infection, they are very numerous. The limitations of this paper exclude their individual descriptions and allow only of their partial enumeration, as follows: Laryngitis and bronchitis, pleurisy, empyema, pneumothorax, hydropneumothorax, abscess of lung, gangrene of lung, subphrenic abscess, mediastinitis, gastro-intestinal complications—especially tympanites, which should be guarded against early, endocarditis, pericarditis, thrombosis and embolism, albuminuria, nephritis, jaundice, acute hepatitis, meningitis, neuritis, hemiplegia, acute otitis media, acute parotitis, acute arthritis, and finally the coincident occurrence of other infectious diseases. From this list it is evident that the differential diagnosis of lobar pneumonia is by no means an easy task in cases with complications. Even cases apparently typical must not be confounded with other resembling chest conditions, of which the most important is pleurisy with effusion. The differential table, taken from Anders' "Practice," 4th Edition, shows the contrasting points.

The next puzzling condition is acute tuberculous pneumonia, and its differentiation is shown in the second table.[6]

In children bronchopneumonia is recognized by the differential points shown in the third table.[7]

Other lung conditions which may give us trouble are pulmonary congestion, which time will usually resolve; pulmonary infarct, which has hemoptysis as a signal symptom and the presence of thromboses in the extremities or in the periuterine veins, and endocarditis as causative factors; and atelectasis, which is indistinguishable from severe bronchopneumonia in delicate infants. Secondary pneumonias occurring in the course of other diseases are often overlooked, but should be suspected and carefully sought for when the respiration-pulse ratio is disturbed. Unresolved pneumonia should never be accepted as a diagnosis until the exploring needle proves the absence of serofibrinous or purulent pleurisy, always remembering that an interlobar empyema may elude the needle. I have seen the very elect of pediatric specialists deceived by interlobar empyema.

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## BLUNDERS MADE BY NATURE.

### THE PART PLAYED BY NATURE IN CAUSING DISEASE OF THE DIGESTIVE AND NERVOUS SYSTEMS.

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It is a fact well known among arborists that the bark of many trees grows so tight that the life of the tree is endangered from strangulation. The arborist remedies this by slitting the bark. It has been pointed out how nature could easily overcome this defect by a simple arrangement of the corky layer into narrow vertical strips.[1] Careful study of animal and vegetable life in all its forms will show endless examples of how nature through carelessness brings destruction and death to its progeny. It is not necessary, however, to leave home for examples since our own body is full of them. In this article a few of the more important are mentioned, most of which are well known, but few of which are fully appreciated in the etiology of disease. Beforehand, however, it may be well to point out that the line is not always sharply marked between nature and civilization as the predisposing cause of disease. Thus, an inguinal hernia may be encouraged by the weakness of the abdominal muscles due to the more inactive life of civilization, but the underlying cause is certainly a natural defective spot in the belly wall. None will deny that a corn on the small toe is caused by a tight shoe, but few will recollect that the small toe is by nature a degenerative part and for this reason less resistant to any irritation. Diseases encouraged by our walking on two legs instead of four will certainly be acknowledged by all as due to nature and not ourselves. Accepting the estimate of more conservative anthropologists as to the life of man on earth at 400,000 years,[2] we may certainly claim that to walk upright is our natural posture and not a new fashion now in vogue among man and higher apes.

#### THE DIGESTIVE SYSTEM.

Beginning with the digestive system it may be well to start at the top and work down. The teeth in man are by no means naturally perfect and digestive disorders are often encouraged by this fact, but as natural mischief makers of the mouth the wisdom teeth play the leading rôle. These are useless additions to the mouth and in

spite of their size they are never great chewers; on the other hand the pain they cause in making their début and the trouble they so often produce, including abscess, diffuse suppuration, necrosis of the jaw bone, and even cancer, is common knowledge to us all. About 17 persons out of 100 in our race cheat the dentist by not cutting their upper wisdom teeth; they may well consider themselves lucky.

Passing back from the mouth into the throat we come across two little bodies standing up on either side like little tombstones. The simile is a good one since the tonsils and the grave are closely related. Evidently placed by nature as sentries to guard the throat from the invasion of bacteria taken in the food, they have not only failed in their duty, but they have apparently in many people become centers of attraction for all stray germs. It is only necessary to mention the frequency of tonsillitis and the relation between tonsillitis and diseases such as rheumatism, appendicitis, sepsis, scarlet fever, diphtheria, and nephritis. Very similar to the tonsils are the adenoids so common in younger life. Here we have a natural overgrowth of tissue, of little or no use, which on the one hand plugs the breathing space and causes general ill health and deformity of the chest, and on the other hand predisposes the nose and throat to recurring catarrhal affections, including inflammation of the inner ear and deafness.

The stomach and intestines furnish several good examples of the part played by nature in causing disease. Judging by the length of our intestines we should be expert vegetable eaters, but when we consider the digestive juices we are apparently better off on a meat diet. As a matter of fact we are built to eat both bread and meat and can do neither extra well. When nature gave us over 25 feet of intestines to lead a vegetarian life it certainly never intended that we should eat our potatoes hash brown or our rice à la creole; cooking is purely a product of civilization and without cooking what chance would we have against a raw potato, or a bowl of uncooked rice? The nourishing part of vegetable food is locked up in little walls of cellulose which no digestive ferment of ours can break through and it is only by our cooking and our milling of grain that a vegetable diet is made digestible. Herbivorous animals chew their grain until the grain gives off a self-made ferment, but man would evolve many a friendly laugh from the family cow were he to try grinding and rechewing his oats in imitation of this patient animal. The bacterial metropolis in the lower bowel, of course, breaks up much of the cellulose of raw vegetables, but the food is mostly liberated too late for absorption and we can feel sure that these little offenders are not doing all this through mere kindness to ourselves. The cooking of meat, as we knew, is much less important than of vegetables; overcooked meat in which all the albumen is coagulated is known to be more indigestible than raw meat, but meat underdone has the advantage over the uncooked in that the indigestible fibrous network of the meat is broken down.

Similar in importance to cooking, man's cultivation of vegetable products, which has been going on for untold ages, has done much to make these foods less indigestible. As Campbell of London says,[3] "To-day no existing race of man is capable of subsisting upon the products of the uncultivated vegetable kingdom alone," our vegetables and fruits of to-day represent the "finished products of a cultivation . . . started in the unfathomable past." Our unfortunate relative, the chimpanzee, always picks up rapidly in weight when brought from the wilds and placed on a diet of cooked vegetable food in place of the raw products he is used to.

Metchnikoff, who has probably found more fault with the intestinal tract than any other man, points out[4] the disadvantage of such a long digestive tube —how this encourages the retention of food and its decomposition from putrifying bacteria, whose poisonous by-products sweeping through the blood help to make life short and miserable. He claims that the whole of the large bowel is superfluous and cites an instance of a woman who lived happily thirty years with no large bowel at all. It certainly does seem a nuisance to have to waste so much energy eating and working on a lot of indigestible material only in order to keep the large intestine from becoming constipated, instead of being able to satisfy ourselves on a limited amount of concentrated nourishment; even worms and insects have the advantage over us here.

Although no longer needed by us, the colon has remained as a blessing to many homeless bacteria. The colon bacillus, as we know, is the chief inhabitant. If there is any excuse for starting trouble within the abdomen the colon bacillus is right on the spot ready for action. It attacks the feeble appendix, inflames the peritoneum, rots the gall-bladder, plays havoc with the pancreas, causes catarrh of the bowel, the kidney pelvis, and the bladder, produces sterility in the female and makes motherless many a new born infant; sometimes it passes into newer fields, causing pneumonia, purulent bronchitis, meningitis of general sepsis—and all this because we are forced to carry around in us a charitable institute for unappreciative germs. In a recent article Morris[5] of New York writes that now since we are gaining control over many pathogenic microorganisms the colon bacillus remains as nature's chief means for thinning out the human race. It shall be ourselves and not nature who will thin out the race of the future, for the days of the colon bacillus, as of other germs, are numbered. Although nature tries to reduce the race as a whole it still gives individual members many valuable weapons against infections. This is seen in the antiseptic action of the stomach juices, especially the hydrochloric acid, and in the bacteriocidal effect of the succus entericus together with the mechanical action of mucus and the peristalsis.[6] These means are effective in keeping the stomach and small gut sterile, but do not protect the colon; each single grain of residue in the bowel has been found by different examiners to contain from 1,000,000 to 117,000,000,000 bacteria. Bile was once thought to be a great intestinal antiseptic of nature's, but now we use bile in the laboratory as a bacterial food. The valve between the large and small intestine does a great deal to prevent the bacteria of the colon from passing upwards, but it might be noted here that in 150 autpsies Krause[7] found the ileocaecal valve naturally incompetent in twelve cases.

Under the fanciful delusion that everything which is natural is best, medical authorities once considered the bacteria of the colon as beneficial to the body in that they aided in splitting up food which the digestive ferments could not handle. Now we know that the food they break up is liberated too low in the digestive tract for much absorption to take place and that any benefit derived from this

source is completely overshadowed by the harm done from absorption of the dangerous toxic products they likewise manufacture from the food. Constipated individuals get more of their money's worth from the food they eat, but they have to pay a higher price for it in the end. The view of modern authorities is that the intestinal flora, besides exerting no beneficial action, may be of itself, under certain conditions distinctly dangerous, predisposing to constipation or diarrhea. Indol and other bodies belonging to the heterocydic and aromatic series are elaborated and absorbed in the colon and severely taxed the functions of the body and, therefore, of the liver.[8] That intestinal bacteria are not indispensable to life has been recently well proven in France by Cohendy, who kept young chickens alive and healthy under absolutely sterile conditions.[9] The part played by intestinal autointoxication in the production of arteriosclerosis and old age is familiar to all; following the lead of the director of the Pasteur Institute thousands of us to-day are trying to cultivate a flora of friendly buttermilk germs in our colons to outrun the less desirable inhabitants, in order that we may lead a happier life and a longer one.

The orifice or ampulla of Vater where the pancreatic juice together with the bile enters the intestine is so well made that infection passing up from the intestine must be very unusual. Sometimes the pancreas has a second duct of its own which opens independently into the intestine. This is a wise provision on the part of nature and allows the pancreatic secretion to flow freely when the common duct is plugged by a stone. Nature, however, sometimes does good only half way, for the value of this second duct is handicapped by the fact that its orifice is not nearly so well guarded from contamination of intestinal contents as the ampulla of Vater, thus inviting infection and not infrequently being a cause of pancreatitis.[10]

The frequency of visceroptosis, especially in women, would suggest that the support of the abdominal organs is not as perfect as it might be and is not entirely suitable to the erect posture of man. Acute intestinal obstruction is likewise sometimes encouraged by natural architecture. This is especially so in children when a section of gut telescopes itself and plugs the canal. Although the attachment of the mesentery is very efficient in preventing the intestine from kinking on itself like a garden hose, the occurrence of ileus under what is frequently slight encouragement shows that this arrangement is not perfect.

Finally, in connection with the digestive system, what are we to say about the vermiform appendix, that antique of the salad age which is of use to no one unless to the abdominal surgeon? We certainly have no thanks to give nature for this miniature gut which because of its low vitality and ease of strangulation has become the target for all abdominal infections. The frequency of appendicitis is one of the bywords of our times. That nature still has a warm spot in its heart, however, is shown by the fact that about one out of every four persons has an appendix the canal of which is partially or wholly occluded, making the possibility of appendicitis less frequent or preventing it altogether. Very similar to the appendix is Meckel's diverticulum, a remnant of embryonic life which occasionally arises from the lower part of the small intestine and is predisposed to give trouble.

NERVOUS SYSTEM.

The brain and spinal cord representing as they do the switchboard which controls the whole body mechanism, it is not surprising that nature takes special pains to protect them from trauma and infection. This system of protection for the most part is excellent, but there are a few bad loopholes for which even nature cannot be excused. The roof of the nasal cavity is the most conspicuous example. The interior of the nose as we know is always swarming with germ life taken in with the air. Above, the nasal cavity is separated from the brain by a thin plate of bone which would serve its purpose perfectly had not nature perforated it full of holes like the top of a salt shaker. Through these holes run the short nerves of smell together with little lymph channels. As has long been known there is an intimate connection between the lymphatic vessels of the nasal mucous membrane and the lymph spaces beneath the brain, and these little lymph channels form the connecting link between the two. If there was one large nerve of smell which approached the nasal cavity at a less hazardous point and which did not branch until after it left the interior of the skull acute epidemic infections of the brain and cord would be rare. As it is, every germ of epidemic meningitis and acute infantile paralysis which enters the nose with the air has a short and convenient path to the brain along the nerves of smell. That more people are not attacked during an epidemic of one of these diseases is probably due to laziness on the part of the germ than to any lack of encouragement on the part of nature. The apparatus of smell itself being a degenerative organ (since man no longer depends on the odor of his enemies in order to avoid them), like all degenerative and undernourished parts, forms an ideal approach for invading bacteria. Not only do bacteria from the nose gain entrance to the brain, but bacteria from the brain in an infected individual find their way out again upon the nasal mucosa so that they may be puffed and sneezed into the faces of innocent bystanders. Thus Flexnor in a late communication on poliomyelitis[11] states that experiments so far undertaken are in favor of the mucous membrane of the nose being the site of both ingress and egress of the virus of infantile paralysis. In his Huxley lecture he said in part, "The conclusion is unavoidable that the virus [of poliomyelitis] ascends by the nerves of smell to the brain, multiplies first in and about the olefactory lobes, and in time passes, as I believe, into the cerebrospinal liquid which carries it to all parts of the nervous system."[12]

A second natural weak spot in the protection of the brain is the roof of the middle ear. The Eustachian tube carrying infection from the throat to the inner ear is, as well known, responsible for the frequency of inflammation in this delicate organ. Once the hearing apparatus is filled with pus the brain is in constant danger, for as one writer points out, "The roof of the middle ear is a thin plate of bone no thicker than paper. This is all that separates the middle ear from the temperosphenoidal lobe of the brain. Erosion of this plate of bone results in epidural abscess, brain abscess or meningitis."[13] A third natural blunder which encourages infection is the close relation between the veins of the face and scalp and the venous channels within the skull. A pus infection

of the scalp is always a menace to the brain since the emissary veins which pass inwards from the scalp through the skull are always ready to carry infection to start up a meningitis or brain abscess. The reason a simple boil in the cheek is so dangerous is well known.

The bony walls of the brain and spinal cord save many deaths from injury to these delicate parts, but there is one vulnerable point in the adult which stands out conspicuously. The ease with which the neck is broken has probably attracted the attention of many and has long been used as a convenient method of ridding society of a less desirable element. Passing along the back of the unprotected neck surrounded by the weakest part of the vertebra column lies the most vital spot of the nervous system. The slightest twist or blow here may cause instant death. A slender neck with delicate movable vertebræ may add poise and grace to the human form, but when we are flying through the wind-shield of a motor car or receiving the impetus of a falling ceiling, our future prosperity depends chiefly on what happens to our neck, and like the turtle the less neck we have the better.

Since our brain became sprinkled with the ganglionic cells of higher thought it has become the pride of our anatomy. No matter how inferior we may be to other animals in other respects we can always point to our intellect as something unequaled elsewhere in natural history; it is, therefore, unfortunate that our higher ganglionic cells are not near as sensitive to stimulation and do not retain their impressions near as well as the chemicals on a photographic plate or the wax of a phonographic cylinder. This is responsible for the frequent errors of judgment and the many failings of memory so common among otherwise normal persons. The natural capacity of the intellect also seems to be very limited.

There is certainly an age limit to learning. It also seems that for a person to have special knowledge or talent in one line he must pay for it with the rest of his mentality. A remarkable artist or a great scientist is often as simple as a child in the ordinary affairs of life and any number of normal alienists (if there are any) would readily sign his committal to a home for the feeble minded were he not protected by the label of genius. The natural make-up of such an unfortunate or fortunate individual is certainly more responsible for his one-sidedness than his own self-education, for many of these men make elaborate preparations for all kinds of businesses which turn out complete failures. This one-sidedness of the cerebrum, as a whole, is better illustrated in the development of the centers of speech and writing on only the left side of the brain if the individual is right-handed, and only on the right side if he is left-handed, so that when a blow puts one side out of business the other side is as unprepared to take up its work as it was at birth and must be educated from the beginning. Of course there is some question here as to whether it is our own choosing or nature's that we are not ambidextrous, since persons using both hands equally have their centers of speech and writing equally developed on the two sides of the brain.

The central nervous system like other parts has its rudimentary and degenerating structures whose usefulness is in inverse proportion to the harm they are able to do. Mention may be made of the pineal body, that vestige of a central eye in lizard-like animals, no longer of any use to us but not very rarely the birthplace of brain tumors. It is well known that nature in an effort to shorten our trunk is allowing the lower end of the spine to degenerate; there is a tendency to degeneration of the lower part of the spinal cord leaving only the filum terminale. As Wiederscheim, in his interesting little book, "Der Bau der Menschen,"[14] has pointed out, this natural degeneration of the lower cord would help to explain the frequency of disease in this part, most especially locomotor ataxia.

The nerves which branch throughout the body are often compared with telegraph wire, since they both carry messages to and fro. In making this comparison, however, it is well to remember that the wires made by man carry their messages much faster than the nerves made by nature, and that while a single telegraph wire will carry several messages at once, the nerve trunk must have a separate fiber for each. Telegraph wires do not lie as often as nerves do. Thus it is not rare to see a child with beginning pneumonia or pleurisy who has severe pain far down in the abdomen instead of over the chest, sometimes causing the surgeon to operate for appendicitis. A one-legged unfortunate will often experience pain in his amputated limb for months or years after he and his leg have parted.

Improper arrangement of nerves in the body is not uncommonly the cause of trouble. Mention may be made of the left recurrent laryngeal nerve which, instead of branching off from the vagus in the neck, where it is intended, does not branch until the vagus reaches the chest, when it must retrace its steps all the way back to the larynx again. The pathogenic significance of this is that loss of the voice from paralysis of the left vocal chord is often caused by the pressure on the left recurrent laryngeal nerve of an aortic aneurysm, a distended left heart ventricle, or a tumor of the chest. Those under the delusion that what is natural is best will possibly claim that the reason nature makes the laryngeal nerve run down into the chest and back again is in order that the physician may more readily diagnose a thoracic aneurysm. As much as our telegraphic system excels the nerve service of nature what is this last compared with our ability nowadays to send messages through space without any wires at all?

Of our organs of special sense the eyes are the most important and we value our sight next to our life. We do not expect our eyes to see as far as a telescope, as minutely as a microscope, or as quickly as a camera, but we do demand that our eyes be perfect in structure and this they are not. The natural errors of the eyeball have caused endless gossip among eye men for years, and given many phycicists a chance to rap at nature as an optician. Achromatic aberration, astigmatism or spherical aberration, imperfect transparency of the cornea, crystalline lens, and vitreous humor, and one large and several small blind spots in the retina are the chief faults which have attracted attention. These faults are, of course, a great handicap to our sight, and it is only because we have two eyes instead of one and are constantly changing our glance that we are able to get along as well as we do. Thus if we had only one eye and a fixed glance the large blind spot where the optic nerve enters the retina (as one example) would be constantly shutting off large fields of vision. As Helmholtz said nearly fifty years ago, "The blind spot is so large that it might prevent our seeing eleven full

moons if placed side by side at a distance of only six or seven feet."[15] Helmholtz after summing up the defects of the eye as an optical instrument adds, "Now it is not too much to say that if an optician wanted to sell me an instrument which had all these defects, I should think myself justified in blaming his carelessness in the straightest terms and giving him back his instrument." For an idea of the handicap nature has placed on the progress of man through faulty eyes one has only to glance through the pages of Gould's "Biographic Clinics."[16]

Our hearing apparatus plays its part fairly well, but the frequency of mistaken sounds and false ones condemns this organ as imperfect. The mistake nature made in connecting the delicate inner ear with the germ-laden throat by a tube open to infection has been mentioned. The Eustachian tube itself, of course, is of value, but surely nature did not have to let it open into the throat at such a hazardous point. The canal through which the sound reaches the ear secretes a yellow, sticky substance termed wax, which is placed there to catch foreign particles and uninvited insects. Very frequently nature, in its liberality, causes too excessive secretion of wax, the excess plugging the meatus as a ball and causing deafness. Partial loss of hearing from natural causes, especially as age advances, is quite common. There are a number of changes that could be readily made in and about the ear to increase our hearing. Without going into its complicated inner mechanism mention need only be made of the most conspicuous shortcoming, namely, the outer ear or pinna. Funnel shaped ears are valuable to collect the sound waves, but the value of a small, almost flat, fleshy disc like we possess, except for ornamental purposes, certainly cannot be great. When we place our hand to our ear to catch a sound we are doing what nature should have already done in shaping the pinna. Of course now that our own taste in the matter is fixed we would not readily exchange our ears for those of an ass, no matter how much we may envy the sound-catching quality of this good animal's revolving ear trumpets. We are perfectly willing to sacrifice hearing to favor fashion.

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# A CELLOIDIN-PARAFFIN METHOD FOR EMBEDDING AND HANDLING TISSUE.


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NOTWITHSTANDING the fact that there are apparently sufficient methods now in use, each with its own advantage and disadvantage, I want to offer a new and, in a good many ways, a quite convenient method, a method that is somewhat of a modification and a combination of the two older standard methods of celloidin and paraffin.

I would like to state that I have used this method now over a year with all kinds of tissue, especially nervous tissue, and checked it against the two standard methods for some time with pieces of the same tissue and find no shrinkage or artifacts above what we may expect normally. I do not offer this as universally applicable, but merely as a convenience in many ways which will be appreciated by both small and large laboratories.

1. Fix and harden the select tissue in the usual way, *i.e.* Orth's fluid, 5 days; Glia-Beiz, 7 days, etc.

2. Wash in running water 12-24 hours. I usually wash over night in a good stream of tap water. Then cut your sections in the forms and sizes indicated. I try to keep them about 1½ cm. x ½ cm. thick.

3. Pass the blocks through 50 per cent. alcohol, 3 hours; 70 per cent. alcohol, 3 hours; 90 per cent. alcohol, 3 hours; then 96 per cent. alcohol over night.

4. Absolute alcohol 10-12 hours or during the next day. One can keep this absolute by keeping a layer of anhydrous copper sulphate with a piece of filter paper covering it in the bottom of the bottle or jar used.

5. Absolute alcohol and ether over night.

6. Thin celloidin, 24 to 48 hours, the longer period the better.

7. Thick celloidin, 24 to 72 hours, the longer period the better.

8. Pure chloroform, 6 hours.

9. Xylol, 1 hour.

10. No. 1 xylol-paraffin, over night, 12 hours. This is a half saturated solution of 52°-54° paraffin.

11. No. 2 xylol-paraffin, 12-24 hours. This is a saturated solution at room temperature.

12. Melted 52°-56° C. paraffin for 6 hours in the oven at even temperature at 55° C., not over.

13. Orient face down and block with melted paraffin in paper boats properly labeled, and cool rapidly by floating in ice water.

14. When hard trim down specimen to proper size, record label and sketch shape and size of specimen if necessary. Mount on paraffin holder with warmed spatula, or file away until ready to be cut.

15. Cut sections the desired thickness. I find that they apparently cut and can be handled best at 10 micra with a dry knife, as for paraffin sections. Or if sections are larger they may be cut on a celloidin microtome dry with a slanting knife.

16. Carry cut specimens from the knife into xylol to dissolve out paraffin.

17. Carry over into chloroform, to wash out the xylol. This also helps to remove paraffin and straightens the sections somewhat.

18. Carry over into 80 per cent. alcohol. Here they may remain until needed for use or one can put them into small bottles of 70 per cent. alcohol for preservation or transportation.

19. Carry over into water and straighten out. If one has many sections he can here discard those of no use before staining.

Steps Nos. 16, 17, 18, 19 can be performed with single sections or upward to 100 collectively, using a glass lifter and draining each loopful as carried over.

20. Now stain by the selected method.

I would like to state that for the above method I have found a preparation called "Parowax" to answer all purposes well. In fact I have gotten my best results with it.

In summing up we first find a disadvantage in its apparent somewhat lengthy course of handling, and I may state that after the thick celloidin one can mount and cut a few sections then start the block through the solutions, again beginning with the absolute alcohol and employing about one-third the time allotted to each solution up to the thick celloidin. It does not harm the other specimens to remain in the thick celloidin until this block has caught up with them.

One great advantage over the celloidin method is that these blocks can be stored the same as paraffin. After cutting just cover the cut surface with a thin film of paraffin easily applied with a warmed spatula. The blocks in this condition will keep indefinitely in a cool place and can be cut over and over again. I have some now over a year old and one cannot notice any change in the cut and stained section.

In cutting we have some very great advantages over the regular celloidin method and some over paraffin. The sections are cut perfectly dry, thereby doing away with the alcohol slop so inconvenient with its always present tendency to rust the knife edge and if neglected for a few minutes without their alcohol feed the drying out, shrinking and hardening of the celloidin blocks in which state they may be ruined and lost forever.

Sections up to 1 cm x 1 cm or 2 cm x ½ cm may be cut very readily on a Minot paraffin microtome or on a Leitz freezing microtome. On the rotary Minot paraffin microtome one can readily cut 50 to 100 sections, 5 to 15 micra (although I find 10 micra cut and turn out the best) in 5 minutes, and handle the same number on the Leitz freezing microtome in about 10 minutes, or one can cut from 10 to 20 sections from as many different blocks in 30 minutes. If sections larger than the above mentioned sizes are necessary one can use any good celloidin microtome and with the knife set at the usual angle for cutting celloidin one should be able to cut as well and more rapidly than if he were cutting standard celloidin sections and without the disagreeable alcohol slop being present.

Another thing, these celloidin sections will be smooth and without a wrinkle to try the patience of the one that has to stain and mount them.

In staining I find they take the stains somewhat better than the regular methods; that is, a much clearer picture can be obtained. They may be stained by any method that either celloidin or paraffin will take. If paraffin methods are needed one can run the sections on the slide in the regular way and dissolve out the celloidin first with absolute methyl alcohol, then fix to the slide by heat method as in paraffin, then dissolve out the paraffin. Alcohols to water and stain.

If serial sections are wanted embed only small pieces not over ½ x ½ cm and in trimming down leave a fairly wide edge of paraffin. After cutting, bring upon the slide in the usual way, then fasten by methyl alcohol method dissolve out the paraffin with xylol, wash out xylol with chloroform, then 90 per cent. alcohol, 70 per cent. alcohol, 50 per cent. alcohol, into water, when they are ready for staining.

Now, last but not least, we have a celloidin section cut 10 micra or under with all its well known advantages over paraffin.

## SURGICAL TUBERCULOSIS.*

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Usually when we speak of tuberculosis, we naturally associate the disease with the lungs, but there is a surgical side of the disease which is just as interesting to deal with from the surgeon's standpoint as is pulmonary tuberculosis to the internist. In a short article as this must needs be, we shall allude to only a few of the most common forms of surgical tuberculosis amenable to operative treatment and to their differentiation from other diseases.

The tuberculous abscess is one of the most common surgical conditions with which we have to deal. They are sometimes designated as chronic, congestive or cold abscesses; they are devoid of the acute inflammatory process of the ones caused by staphylococci and streptococci. These abscesses are likely to occur wherever the tubercle bacilli may be deposited and are consequently in the lymphatic glands, joints, and bones more than in other portions of the body. They are the result of the breaking down of the tubercles which may be accomplished without either pain or acute inflammatory processes. If these deposits of tubercles happen to be under some dense aponeurotic membrane (as pus moves in the line of least resistance) it may follow these fascial planes and come to the surface on the anterior aspect of the thigh or above or below Poupart's ligament, when it originally started in the lumbar vertebræ, as in psoas abscess. The same source of infection may be the cause of an ischiorectal or perineal fistula.

The treatment of an abscess tract of such far-reaching dimensions has been attempted by opening and washing out the tract with weak solution of tincture of iodine or 1 to 5,000 bichloride of mercury, following the injection of the tract with a bismuth vaseline paste. The great danger in the treatment of such cases by open method is the adding of streptococcus, or stapholycoccus infection, to the tuberculous. When an evacuated tuberculous abscess continues to suppurate and remain open for long periods of time it is because of this mixed infection.

Joints and their membranes are liable to tuberculous infection. The knee is more frequently infected than the other articulations, supposedly on account of so much joint surface being exposed to trauma and the large number of lymphatics and blood vessels in the knee joint. The synovial membrane and osseous structure are involved in about equal proportions. The starting point in the bone variety is usually in the head of the tibia or in the femur and the joint may become ankylosed with the leg in the flexed and externally rotated position.

Tuberculous disease of the joints is secondary to that of the lungs, bowels, or lymph glands in nearly all cases. This metastasis is effected through the

*Read by title before the Surgical Association of Jacksonville, Fla.

blood streams and lymphatic vessels; it is very slow in its process, usually confined to one joint, and quite often seems to follow some injury to the joint. It is just as essential for a patient with tuberculous joint disease to require rest, open air, and forced feeding as it is for those patients suffering from the pulmonary form of the disease.

Tuberculous coxitis has the same pathology as in other joints. It is first noticed in children by their standing on the sound limb in order to rest the other, and in adults by a severe hip lameness the next day after any violent exertion. In its first stages the motion of the joint is very little impaired.

The pain may be referred to the knee joint as the anterior crural and sciatic supply both joints, the limb may appear lengthened. A blow on the heel or on the trochanter causes pain. The limb becomes flexed, abducted, and everted. As the disease progresses the spinal column takes on a lateral curvature of the spine, with convexity toward the diseased hip. Abscess usually opens internal to the great trochanter or passes directly backward into the gluteal region.

The most helpful condition for any tuberculous joint is to be at perfect rest. Friction of the opposed surfaces of the affected bones in walking or movement of any kind aggravates the condition, spreading the tuberculous infection. Nature tries to throw up barriers against the invasion of new territory by the tubercle bacilli, but all her efforts come to naught unless the joints affected are kept at absolute rest, the two ends of diseased bones practically being pulled apart. This is equally true whether the infection is Pott's disease of the vertebral column or hip or knee-joint tuberculosis. The best mechanical means for bringing about this absolute position of rest in Pott's disease is the well applied plaster of paris jacket, which has for its resting point the brim of the pelvis and for its support the back and axillary space. Application of these plaster jackets should only be made when the patient is suspended from a tripod by the axillæ and head so that the vertebræ are relieved of the weight of the body and lower extremities. A double closely fitting knit undershirt should cover the entire surface of the body snugly, all bony prominences should be padded. The first rolls of the plaster dressing should be applied during forced expiration, so as to insure its fitting snugly and supporting the vertebral column as it should. While the bandages are being applied, wood, aluminum, or steel strips may be applied on either side of the spinal column, extending the full length of the plaster jacket. The patient should be kept quiet for a couple of hours after the dressing has been put on, in order that no cracks may occur in the bandage. The bed should be located on the gallery or near an open window in all except the most inclement and coldest weather. The patient should be encouraged to eat the most nourishing food, small in quantity, and often repeated so that the very best chance for recovery can be had.

The hip joint, which is the next most frequently involved in tuberculous infections, is amenable to treatment in the same way as the knee, with a light plaster cast extending far up above the pelvis and down the leg so as to immobilize the knee. In treating the hip joint some form of extension apparatus should be fixed to the foot of the bed and adhesive straps held to the inner and outer side of the thigh by a roller bandage. To these adhesive straps a five to ten-pound weight should be attached at night; the foot of the bed being raised for counterextension.

Operative measures about the hip joint are more serious in their consequences than in other tuberculous joints of the body. The latest recommendation in extensive abscesses and destruction of the joint membranes, where operation is imperative, is to remove all the diseased bone, mop the cavity with carbolic acid, followed by alcohol, or with strong tincture of iodine, pack with iodoform gauze, to be removed within a week or sooner, and allow the wound to heal by granulation. X-raying such joints and fistula as are treated in an institution where it is convenient is recommended, as also minute doses of tuberculin combined with the above mentioned methods.

Tuberculous testicles between the ages of twenty and forty are not very uncommon secondary manifestations of the disease. Trauma to the testicle or epididymitis predisposes to tuberculous infection. Fistulous tracts or tuberculous abscesses commonly follow unless an early castration is done. As the physiological function of the testicle is early destroyed after its involvement in the tuberculous forms, no contraindication exists to castration.

Tuberculosis of the kidney is found in about two per cent. as a secondary manifestation of the disease. In 3,500 autopsies only twenty-four cases were of renal tuberculosis, and these were all of secondary involvements. The disease usually being unilateral suggests nephrectomy, provided climatic and hygienic treatment does no good. Removing the kidney should never be done when there is even a moderate amount of pulmonary involvement.

Tuberculosis of the breast is a very rare disease; the breast seems to be involved secondarily to the lungs through the blood and lymphatic vessels. Cold abscesses of the breast are usually tuberculous in origin, the glands in the axilla enlarge just as they do in carcinoma; the abscess is usually painless, the bacilli are few in number in the pus; in fact, they may not be found. Usually these cold abscesses of the breast are relieved by simply opening, mopping out with alcohol and tincture of iodine, and packing with iodoform gauze; if the disease is extensive throughout the breast, complete amputation should be done if the patient is in moderately good health and there is no serious pulmonary involvement.

The post operative treatment in every tuberculous case should be absolute out of door rest, forced feeding, and if possible change of climate, the same as is practised in first stage cases of pulmonary tuberculosis.

505 Medical Building.

**Multiple Lupus Vulgaris Following Measles.**—J. M. H. MacLeod reports the case of a child who had had measles two years previously, and in the convalescent stages of fever an eruption of reddish-brown spots had appeared, which, when first noticed, were about the size of a split-pea and were situated on both arms. These lesions had gradually grown, until at present they varied in size from a sixpence to a florin. They were confined to the arms, there being nine on one arm and ten on the other. The lesions were of the lupus type only; they had been considerably inflamed by some irritating ointment which had been applied, and several of them had become impetiginized. The child was one of a family of twelve, and there was no history of tuberculosis among them, nor, as far as could be gathered, in the antecedents. A physical examination of the child failed to reveal any other stigmata of tuberculosis. Cases of this kind were by no means uncommon. They suggested the possibility that they were the result of an embolic shower of tubercle bacilli, emanating from some broken-down focus of tuberculosis, such as a mesenteric or bronchial gland, which had reached the cutaneous capillaries and there produced the tuberculous lesions.—*Proceedings of the Royal Society of Medicine.*

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## THE ESSENTIAL CAUSE OF PROSTITUTION.

IN the various investigations, conducted from time to time with the end of getting at the root of the social evil, there seems to be for the most part a tendency to overlook the fact that practically all prostitutes are essentially different from normal women. In the limelight of investigations and under the influence of publicity the naturally vain and shallow-minded women who follow this profession as a livelihood are usually made to appear the victims of economic pressure which forces them into such a life in order to prevent their starvation. Practically all students of the subject, who are in reality students, that is, those who have made the subject their life work rather than the hobby of a few days or weeks, are agreed that economic pressure is one of the least of the contributing factors to the evil.

When sifted to its last analysis it will be found that as a rule prostitutes are women who have been arrested in their mental development at or about the age of puberty. All the sexual desires of the adult are present in them but the self-control is that of a child of fourteen or fifteen years. Likewise, the constructive ability is that of early youth rather than of adult life. They are in other words mentally incapable of meeting abnormally hard conditions of life by the putting forth of abnormally hard efforts. Just as there are occasional normal habitual criminals so will there occasionally be encountered mentally normal prostitutes. But this is the exception rather than the rule. Tested by the Binet-Simon method for determining mental efficiency, the inmates of the Bedford Reformatory are being found almost universally to fall below the mental age which should tally with the chronological. This falls in line with the argument furnished by the every-day experience of physicians that women of this class are inherently different from the normal. That economic conditions are among the least of the contributing factors to prostitution is also borne out by reflection upon the evil of prostitution as it exists in rural communities and villages. Here it is well known that almost every rural community has one or more women who hold their virtue at the price of less than a square meal in any ordinary city restaurant. It is with them not a question of making a living at all, because were they inclined to do any kind of honest hard labor they could easily live decently among the farmers and villagers. It is not the lack of work that drives them to the life, but the fact that they are incapable of performing honest labor. The Jukes family, with its abnormally large number of prostitutes, as well as the Kallikak family, whose history has lately been compiled by Goddard of the Vineland Training School for feeble minded, are both notable examples of the intimate relation existing between prostitution and feeble mindedness.

At the risk of being thought somewhat radical and, perhaps, a little iconoclastic, we also venture the assertion that as a rule the men who make a business of patronizing prostitutes are below the average in mental ability. Perhaps most men have been guilty in this respect at some period of their lives, but the normal man with normal ambitions and normal ability (of course, there are exceptions) soon tires of such degrading practices and either becomes continent until marriage or else strives to establish sexual relations upon a basis that is not purely commercial. In both men and women the sexual relations, when put upon a strictly commercial basis, argue a grade of mentality which is below the average. Owing to the essential difference in the sexual instincts of the two sexes, it is, no doubt, not quite so much an index of mental inferiority in the man to patronize prostitutes as it is in the woman to practise prostitution. However, the principle is the same in both cases and the inferiority is one of degree rather than of kind.

We are inclined to the belief that a campaign of education of the young men, which includes not only the inculcation of the principle that continence is compatible with health but also that the practice of frequenting places of prostitution betokens a low grade of mentality, coupled with a eugenistic movement to eliminate the feeble-minded strains from which prostitutes are almost universally recruited, offers the most practical plan of getting rid of the evil. Before this plan of action is condemned offhand as visionary and impossible, it would be well to remember that up to the present moment no plan ever yet devised has succeeded in the abatement of the evil by one jot or tittle. From time immemorial nations have suffered the nuisance without being able to cope successfully with it. If all the old plans have failed, why should we not avail ourselves of the knowledge which the comparatively new science of eugenics has taught us and tackle the problem in the light of the fact that practically all prostitutes are mentally below par?

## CONSULTANTS AND CONSULTATIONS.

THE medical consultation is an ancient institution. Hippocrates spoke slightingly of those physicians who did not seek the advice of their colleagues. He was probably the first to recognize the principles of ethics that should govern consultations. For he said that "doctors should not contend with one another, nor make one another appear ridiculous; for in no case should one physician discountenance another because of the latter's opinion." Still, even in the

early days of medicine there was no unanimity of opinion as to the efficacy of consultations. "Turba medicorum perdidit Cæsarem" is mentioned by Pliny as the alleged epitaph of Hadrian. This sentiment is reflected in many of the gibes flung by modern wits at the consultations of medical men, which are only too frequently regarded by the general public as useless and expensive formalities, even if they do not cover up the errors and shortcomings of the original medical attendant. The importance of the consultation was however fully recognized in many countries as long ago as the middle ages. In cases of serious illness physicians were compelled by statutory enactment to summon their colleagues in consultation. This practice reached its climax in the sixteenth century. It is related of Henry IV of France that when he visited his friend the Marquis d'O who was suffering from a retention of urine, he found the patient surrounded by as many as sixteen physicians.

A great deal has been said and written about the medical consultation. Rules governing it have been written into the ethical codes of the medical profession in various countries. As an example may be cited the eight sections comprising Article III of the Principles of Medical Ethics of the American Medical Association. Careful reading of these paragraphs reveals nothing that would not suggest itself instinctively to any physician of common sense as the proper procedure in the conduct of a consultation.

The ceremonial and ethical aspects of the consultation have tended to distract attention from the most important phase of this medical function, namely, its real utility. Regarded in this manner the value of the consultation may again be studied from three different viewpoints, namely, from that of the physician, from that of the patient, and from that of the patient's friends. While it must be admitted that in many instances the physician requests a consultation chiefly to protect himself from ultimate criticism by dividing the responsibility with another practitioner, the real object of every consultation is to benefit the patient. If the latter is suffering from a serious or obscure ailment, or if there is some doubt as to the proper treatment to pursue, there can be no question as to the advantage of a consultation. There are, however, many consultations which are such only technically. With the growing complexity of modern medicine and its division into specialties, the need of expert opinions and special skill in diagnosis and treatment is frequently manifested, and a number of medical men may be summoned to study different phases of the case. The individual is nowadays subjected to a process of analysis and treatment by many specialists. The analogy is not remote which would compare him to the product of the modern factory which passes through many hands before it is completed.

Apart from these cases, and apart from those whose difficulties may require the deliberations of two or more minds for their solution, one may recall instances in which a consultation is of distinct advantage to the medical attendant. If the case has been one under observation for a long time there may have developed by imperceptible degrees new symptoms or new aspects that escape attention because of their slow and gradual onset. The consultant who sees such a case for the first time gets a sharper and more vivid picture of the entire condition than the one who has studied it for such a long time as to become indifferent or oblivious to some of its important features. On the other hand the consultant because of his brief observation and study of a patient may not estimate the true value or importance of certain symptoms and may actually, as he frequently does, render an incorrect diagnosis. The shortcomings of the consultant in this respect are aptly alluded to by A. Manquat in his "Principles of Therapeutics," as follows: "A consultation may have regrettable consequences when the consultant makes a mistake, when he is incompetent, or when his advice, though wise, is not accepted. A consulting physician, even a learned one, may err, for the sufficient reason that, having seen the patient but once, he cannot know his various reactions as accurately as the attending physician. The latter, at times somewhat humiliated under the circumstances, cannot always make acceptable his well-founded objections: out of two wills, both conscientious and thoughtful, may come a practical error as a consequence of the preponderating part played by the physician whose knowledge of the patient is less thorough. At other times the consulting physician is one of those men who, through their diplomacy, greater than their science, have acquired the undeserved reputation of exceptional excellence. As a matter of course, he considers the confrère as an inferior. He starts by reforming the latter's diagnosis without suspecting that in most cases he is substituting an error for a reality. Next, he proposes a new treatment. In case of recovery, he is credited with the success; in case of failure, his reputation saves him."

The moral of all this is: one should be most careful and circumspect in the selection of a consultant. The physician whose business methods and whose knowledge of human nature have enabled him to build up an extensive practice is not necessarily an efficient consultant. This rôle can be played successfully only by one who has sufficient time for study and reflection, and who abhors the intuitive or the "snap" method of diagnosis. However brilliant the consultant, there can be no question that the attending physician is not relieved of the responsibility of making a thorough study of the case before the consultant is called in. It is useless to expect of the latter a careful opinion unless all the clinical and laboratory evidence is available. Only too frequently is the consultant compelled to suspend his verdict until a blood count, a Widal or a Wassermann reaction, etc., has been made.

There are not a few instances in which many consultants are called in, one after another. This practice is a relic of the older days when consultants held animated discussions like those of a modern jury. The multiplicity of consultants is not always proportionate to the wealth of the patient, but is rather suggestive of the ignorance of the latter's friends, of the weakness of his physician, and of a state of panic among all of them. The latterday custom of summoning a consultant from a con-

siderable distance or from a foreign country is rarely conducive to the welfare of the patient, for it fosters an attitude of neglecting important indications or of keeping one's hands tied until the consultant's arrival.

From the viewpoint of the attending physician the consultation may be of real or imaginary value. It may sometimes, however, be detrimental to the best interests of the patient in tending to divide the responsibility of those who are treating him. Only too frequently is the practitioner prone to throw the responsibility wholly on the shoulders of the consultant, to rest content with the latter's opinion, and to cease giving to the case the additional study which it may require. The division of responsibility may have the same paralyzing effect as the division and consequent dissipation of authority in governmental systems. It is far better for the patient that one mind should devote to the study of his ailment its full energy rather than vouchsafe to the patient a half-hearted interest merely because another practitioner of supposedly greater attainments has been called in. Many consultations cannot but have the effect simply of confusing the original medical attendant. Fanciful suggestions and ingenious theories are not infrequently advanced by consultants for the purpose of displaying their own erudition, and may tend to supplant the sounder and more practical views of the medical attendant, which are abandoned because of the superior eminence or the personality of the consultant. This is a serious danger that should be guarded against, chiefly by the exercise of the power of self-reliance which is an important asset in the make-up of the physician.

## THE KIDNEY AND ECLAMPSIA.

There has been almost a continuous modification of the views of the relation of "pregnancy" kidney to eclampsia ever since the first recognition of Bright's disease. At first eclampsia was held to be invariably the result of nephritis, or, in other words, was synonymous, with uremia, but at the present time many would exclude altogether the possibility of any necessary relationship between the two blood states. When a pregnant woman already has chronic nephritis it almost never determines eclampsia. The dissimilarity of the two conditions is set forth in current textbooks.

But while it is clear that in pregnancy toxemia the involvement of the kidney is, as a rule, merely an unessential symptom, the possibility of a secondary uremia from the renal lesion must not be lost to view. The differentiation of the two states in practice would be very difficult without having recourse to the differential blood and urinary tests and it is quite conceivable that the two blood states do not exclude each other's existence. In some autopsies upon eclamptics not the mere von Leyden kidney, but actual acute nephritis is present of a degree to show that uremia doubtless existed.

At a recent meeting of the Berlin Gynecological Society (*Berliner klinische Wochenschrift*, February 24) Zinsser upheld the most modern teaching that the kidney lesion so often found with eclampsia played no part in the causation of the latter, and formed no prognostic or therapeutic criterion. Time was not always afforded for the elaborate blood and urine tests of uremia. Any retention of water, chlorides, and nitrogen due to the renal lesion need not be regarded as permanent. We now know that edema is no absolute index of renal insufficiency, and that there is no parallel between edema and convulsions.

The discussion of this paper revealed the belief of some of the leading authorities that the renal lesion had a direct influence on the eclamptic convulsions, and that many pregnant women are perfectly well until a primary renal lesion develops. It is certainly a question of moment as to whether a woman is being poisoned by her placental albumin, or retained nitrogen, or both; yet this question does not appear very near its solution.

## The Serodiagnosis of Cancer.

Ever since von Bergmann and Kenthe revealed the presence of complement-deviating substances in the blood serum in a number of pathological conditions, including carcinoma, several investigations have been undertaken with the view of utilizing the phenomenon of deviation of complement in the early diagnosis of cancer. The latest research along this line has been made by E. Leschke, who describes his results in the "Beiträge zur Klinik der Infektionskrankheiten und zur Immunitätsforschung," Vol. I, No. 21. His work included two separate investigations. First, into the phenomenon of complement deviation in malignant disease, and second, into the so-called cancer cell reaction. As the result of the first series of experiments it was found that the blood serum of patients suffering from cancer contains in 90.2 per cent. of the cases complement-binding antibodies with reference to antigens obtained from malignant tumors. These antibodies are, however, not specific, for they present in many instances the same reaction with antigens obtained from normal organs, as the pancreas, spleen, and liver. Moreover, in cases of syphilis and of certain other diseases associated with degenerative tissue changes the antilipoid substances that are formed react with the antigens obtained from tumors in many instances by binding the complement. The best results are obtained with carcinoma tissue dissolved in antiformin. With this antigen the blood serum of cancerous patients gave 86.6 per cent. positive reactions while the blood serum of patients suffering from diseases other than cancer gave 7.6 per cent. positive reactions. The conclusion is drawn that while it is impossible to make a serological diagnosis of cancer, nevertheless, when taken in conjunction with the clinical practice, positive serological findings may be an important diagnostic aid, provided the Wassermann reaction is negative and provided there are no evidences of degenerative processes in the body.

## News of the Week.

**City Death Rate.**—For the week ending March 22, the death rate in New York was 16.36 per thousand of population, with a total of 1,685 deaths, as compared with a rate of 15.47 per thousand and a total of 1,534 deaths in the corresponding week of 1912. The increase was largely due to deaths from influenza and pneumonia. For the first twelve

weeks of the year, the death rate was 15.78 per thousand, as against 15.60 for the same period of last year.

**Mountainside Hospital.** — The Homeopathic Medical Society of Montclair, N. J., has contributed $650 to the Mountainside Hospital of that town, in recognition of the opening of the private operating-rooms of the hospital to homeopathic physicians. A "whirlwind campaign" to raise $300,000 for the hospital will be started on April 7.

**State Health Matters.**—The report of the committee appointed by Gov. Sulzer of New York to inquire into the financial conduct and management of the various State departments, was submitted to the Legislature on March 24. As regards health matters, the committee considered the request of the Health Officer of the Port of New York for $2,000,000 for new buildings on Swinburne and Hoffman Islands, but it was deemed unwise that the State should this year expend any money for this purpose. The committee also believed that the Health Officer's department should be run on $46,000 less than was needed last year, and recommended that the fees for the fumigation and inspection of vessels should be increased. In regard to the appropriation of $17,000,000 requested for the State hospitals and charities, the committee says that the State has practically no control over the expenditure of this money, under the old methods, and states that the policy of all State institutions should be directly under its supervision. It recommends that the State build at once one or two institutions for the care of the insane, but it opposes the plan of using the Creedmoor rifle range as a site for an asylum.

**Cholera Death Reported.**—From Watertown, N. Y., comes the report of the death there recently from cholera of an Italian who landed in New York just a week before. The Quarantine officials are inclined to doubt the correctness of the diagnosis in the absence of confirmatory cultures.

**X-Ray Accidents.**—To the already long list of medical men who have suffered from the malign effects of the *x*-rays there must now be added the name of Dr. Charles Lester Leonard, professor of Roentgenology in the Philadelphia Polyclinic and College for Graduates in Medicine, and one of the pioneers in his special field of work. Dr. Leonard some years ago lost several fingers from one hand, later the entire hand was sacrificed, and only recently it was found necessary to remove the forearm so as to check the advancing effects of the *x*-ray burns.

**Hospital Celebration.**—The trustees of the Sheppard and Enoch Pratt Hospital of Towson, Maryland, are preparing to celebrate the sixtieth anniversary of the granting of the charter for the institution. Although the hospital has been receiving patients for only twenty-one years, it was incorporated and the board of trustees named on May 24, 1853, Moses Sheppard, the founder, being the first president. It is expected that the celebration will be held either just before or just after the Congress of American Physicians at Washington.

**Infant Mortality.**—As previously announced, an English-speaking Conference for the Prevention of Infant Mortality will be held in London on August 4 and 5, under the auspices of the British National Association, and immediately before the opening of the International Medical Congress. The tentative programme includes the following: The responsibility of central and local authorities in infant and child hygiene; the administrative control of the milk supply; the necessity for special education in infant hygiene; medical problems in infant nutrition; and antenatal hygiene. Dr. Philip Van Ingen is secretary of the American committee, and will be glad to furnish any information on request. He may be addressed at 125 East 71st Street, New York.

**Lister Memorial Fund.**—For the purpose of raising the funds necessary for a fitting tribute to the memory of the late Lord Lister, a committee has been formed in London, from which an appeal for subscriptions has been issued. It is proposed that the memorial have a threefold character, and that it consist of (1) a medallion portrait of Lord Lister, to be placed in Westminster Abbey; (2) a larger and more conspicuous monument, to be erected in some public place in London; (3) if sufficient funds are obtained, the founding of an International Memorial Fund from which grant in aid of researches or rewards for important contributions to surgical science may be made.

**Gifts to Charities.**—By the will of the late Mr. Jacob M. Worbelovsky of Brooklyn, the Jewish Dispensary Association of that city receives $500, and the Montefiore Home and the Beth Israel Hospital of New York, each $1,000.

By the will of the late Mr. Samuel T. Benner of Philadelphia, a bequest of $5,000 is made to the Methodist Episcopal Hospital of that city for the establishment of a free bed in memory of the testator's sister, Sarah Benner, and a like amount to the Presbyterian Hospital, also of Philadelphia, for the establishment of a free bed in memory of the testator's mother, Mary M. Benner.

Harvard University, Boston, receives a bequest of $50,000, to be added to the Ellen Osborn Proctor Fund for the study of chronic diseases, under the will of the late Abel H. Proctor, the bequest become payable on the death of the testator's mother.

**Death of Dr. Egan.**—We regret to learn of the death, on March 30, of Dr. James A. Egan, for many years the efficient secretary of the Illinois State Board of Health and an earnest worker in the cause of higher medical education and of effective State regulation of medical practice.

**Personals.**—Dr. Hugo Kinner of St. Louis, Mo., a graduate of the University in Berlin in 1863, recently received the golden diploma presented by the University to its students on the fiftieth anniversary of graduation.

Dr. Marion O. Biggs of Bowling Green, Mo., has been appointed superintendent of State Hospital No. 1 at Fulton, Mo., succeeding Dr. George Williams.

**Medical Society Elections.**—Arkansas Medical Society.—The Tenth Councilor District of the Arkansas State Medical Society at its meeting on March 19, elected the following officers: *President*, Dr. John L. Smiley, Siloam Springs; *Vice-President*, Dr. C. F. Perkins, Springdale; *Secretary*, Dr. James A. Fergus, Rogers; *Treasurer*, Dr. William A. Pickens, Bentonville.

St. James Parish (La.) Medical Society.—At the annual meeting held in Convent on March 19, the following officers were elected for the ensuing year: *President*, Dr. J. Louis Deslattes, Paulina; *Secretary-Treasurer*, Dr. Louis A. Gaudin, Convent.

**Obituary Notes.**—Dr. Hugh Angus Stewart, assistant professor of pathology in the College of Physicians and Surgeons, New York, died at the

Willard Parker Hospital from scarlet fever, after a brief illness, on March 29, aged 30 years. Dr. Stewart was born in Blair-Atholl, Scotland, on July 28, 1882, and was graduated from the University of Edinburgh with the degrees of M.B. and Ch.B. in 1904. In 1906 he received the degree of D.P.H. from his alma mater, and in 1907 that of M.D. During 1904-5 he served as resident physician at the Royal Infirmary, Edinburgh, and after a period of study in Munich came to this country in 1907, acting as assistant resident physician at the Johns Hopkins Hospital, Baltimore, for two years. He was then appointed assistant professor of pathological histology in the Johns Hopkins Medical School, and in 1909 became assistant professor of pathology in the College of Physicians and Surgeons, Columbia University. He was a member of the Edinburgh Royal College of Physicians, the Society for Experimental Biology and Medicine, and the New York Pathological Society, being vice-president of the last named at the time of his death. He had made notable contributions to the study of blood pressure and conditions of the heart, and had recently been engaged in experiments on the adrenal bodies in the course of which he had achieved results which promised to be of value in the treatment of Addison's disease. His early death, in the fullness of his life, is a sad loss to the science of medicine.

Dr. Carlton Revere Thomas of Boston, Mass., a graduate of the Boston University School of Medicine in 1901, died in the Massachusetts Homeopathic Hospital on March 8 from injuries received by the explosion of a gasoline tank in his automobile. He was 35 years of age.

Dr. Francis M. McElwee of Macon, Neb., a graduate of the College of Physicians and Surgeons, Keokuk, in 1892, and a member of the Nebraska State and Franklin County Medical Societies, and for thirty years county physician, died at his home after a long and painful illness on March 1.

Dr. Malcolm Toland Sime, formerly of Philadelphia, a graduate of the College of Physicians and Surgeons, New York, in 1895, and at one time assistant surgeon in the National Guard of Pennsylvania, died in New York on March 3, aged 40 years.

Dr. Patrick Frederick Gildea of Colorado Springs, Col., a graduate of the College of Physicians and Surgeons, New York, in 1889, and a member of the American Medical Association, the Colorado State and El Paso County Medical Societies, and the American Laryngological, Rhinological, and Otological Society, died in Coronado, Cal., from tuberculosis on March 6, aged 47 years.

Dr. Eugene J. Carolan of Brooklyn, N. Y., a graduate of Bellevue Hospital Medical College, New York, in 1878, and pathologist to the Bushwick Hospital, died at his home on March 15, aged 50 years.

Dr. Frank Abraham McMahon of Fresno, Cal., a graduate of the University of California, Medical Department, in 1897, and formerly a surgeon in the United States Army, died at his home on March 3, aged 45 years.

Dr. Robert S. Macrum of Sewickley, Pa., a graduate of the University of Pennsylvania, Medical Department, in 1897, and a member of the American Medical Association and the Pennsylvania State and Allegheny County Medical Societies, died at his home on March 3, aged 45 years.

Dr. James Livingston Thompson of Indianapolis, Ind., a graduate of Rush Medical College, Chicago, in 1860, a member of the American Medical Association and the Indiana State and Marion County Medical Societies, and professor emeritus of ophthalmology in the Indiana University School of Medicine, died at his home on March 5, aged 80 years.

Dr. Archibald Ezekiel Isaacs of New York, a graduate of New York University Medical College in 1886, surgeon to the Beth Israel Hospital and honorary secretary of the Board of Managers of that institution, a member of the New York State and County Medical Societies, the New York Academy of Medicine, the Physicians' Association, the Eastern Medical Society, and the Harlem Medical Society, died at his home from pneumonia on March 14, aged 46 years.

Dr. James M. Amis of Topeka, Kan., a graduate of the Kansas Medical College, Topeka, in 1898, and formerly assistant coroner of Topeka, died in Galesburg, Ill., from disease of the kidneys, on March 3, aged 40 years.

Dr. John H. Droge of Brooklyn, N. Y., a graduate of Bellevue Hospital Medical College in 1884, a member of the Brooklyn Medical Society, the Associated Physicians of Long Island, and the German Medical Society, chief laryngologist and otologist to the German Hospital, consulting laryngologist to the Bethany Deaconess Hospital, and visiting laryngologist to St. Mary's Hospital, Jamaica, died at his home on March 15, aged 52 years.

Dr. Clarence Russell Grier of Camden, N. J., a graduate of the Jefferson Medical College, Philadelphia, in 1893, and a member of the New Jersey State and Camden County Medical Societies, died in the Cooper Hospital, Camden, from pneumonia, on March 12, aged 42 years.

Dr. Sylvester Emory Strong of Saratoga Springs, N. Y., a graduate of the New York University Medical College in 1862, and a member of the American Medical Association and the New York State and Saratoga County Medical Societies, died at his home on March 17, aged 75 years.

Dr. Charles Faget of New Orleans, La., a graduate of the Medical Department of the Tulane University of Louisiana in 1876, and an authority on the treatment and control of yellow fever, died at his home from diphtheria on March 8, aged 58 years. Dr. Faget's wife and two children died of the same disease only a short time before.

Dr. James Tucker Cutler of Roxbury, Boston, Mass., a graduate of the Harvard Medical School in 1894, visiting physician to the Cullis Consumptives' Home, Dorchester, and to the Massachusetts Homeopathic Dispensary, Boston, and a member of the Massachusetts Homeopathic Medical Society and the Massachusetts Gynecological and Surgical Society, died at his home from pneumonia on March 15, aged 48 years.

Dr. Lorenzo Waite of Pittsfield, Mass., a graduate of the Berkshire Medical College, Pittsfield, in 1850, died at his home on March 18, aged 84 years.

Dr. Jesse E. Wilson of Rochester, Mich., a graduate of the Castleton Medical College, Castleton, Vt., in 1855, died recently at his home, aged 83 years.

Dr. George S. Adams of Stamford, Conn., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1876, superintendent of the Givens' Sanitarium, Stamford, and formerly

for twenty years superintendent of the Westboro Insane Hospital, Westboro, Mass., died at his home on March 16, aged 65 years.

Dr. John C. Parker of Providence, R. I., a graduate of the Medical School of Maine, Portland, in 1891, and a member of the Rhode Island State and Providence District Medical Societies, died at his home from pneumonia after a brief illness on March 12, aged 48 years.

Dr. Charles M. Knight of Chaplin, Conn., a graduate of the Louisville, Ky., Medical College in 1893, health officer and medical examiner of the town of Chaplin, and a member of the local school board, died at his home from diabetes on March 10, aged 57 years.

Dr. Robert H. Taylor of Griffin, Ga., a graduate of the Atlanta Medical College in 1879, and a member of the Georgia State and Spalding County Medical Societies, died suddenly at the residence of his brother on March 12, aged 55 years.

Dr. David M. Finley of Clinton, Ia., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1885, died at his home on March 10, aged 83 years.

Dr. James N. Powell of Corydon, Ky., a graduate of the Medical Department of the University of Louisville in 1862, died at his home on March 8, aged 74 years.

Dr. Frederick G. Domnitz of Wildwood, N. J., a graduate of the Medical Department of the University of Pennsylvania in 1869, died in Philadelphia on March 9, aged 64 years.

Dr. Thomas D. Rogen of Philadelphia, a graduate of the Jefferson Medical College in 1869, died at his home on March 13, aged 65 years.

Dr. Grant Stanley of Sea Cliff, Long Island, N. Y., a graduate of Cornell University Medical College, New York, in 1904, a member of the New York State and Nassau County Medical Societies, the Society of the Alumni of Seney Hospital, and the Associated Physicians of Long Island, attending physician to the Home for Convalescent Babies, Sea Cliff, and associate physician to the Nassau Hospital, Mineola, died at the Seney Hospital, Brooklyn, from diphtheria, after a brief illness, on March 23, aged 38 years.

Dr. Richard R. Trotter, of Yonkers, N. Y., a graduate of the Boston University School of Medicine in 1877, and a member of the American Institute of Homeopathy, the New York State Homeopathic Medical Society, and the Academy of Pathological Science, and consulting physician to the Yonkers Homeopathic Hospital and Maternity, died at his home after a short illness, on March 28, aged 63 years.

Dr. Harry Raymond Bennett of Bridgeport, Conn., a graduate of the Dartmouth Medical School, Hanover, N. H., in 1897, and assistant physician at the Emergency Hospital, died in St. Vincent's Hospital, Bridgeport, from pneumonia, after a short illness, on March 22, aged 38 years.

Dr. Frank Hamilton Peltier of Hartford, Conn., a graduate of the New York University Medical College in 1887, died suddenly at his home on March 20, aged 48 years.

Dr. A. Richmond of Claremont, Cal., a graduate of the Detroit Medical College in 1872, died recently at his home, aged 68 years.

Dr. Jovite A. Lapointe of Biddeford, Me., a graduate of McGill University, Medical Faculty, Montreal, in 1867, died at his home from paralysis, on March 23, aged 69 years.

## Correspondence.

### THE PHYSICIAN'S SELECTION OF HIS MEDICAL ATTENDANT.

To the Editor of the Medical Record:

Sir:—In the pleasure that comes to a physician from meeting with his colleagues, in the spirit of good cheer that manifests itself among the men in our medical and social gatherings, in the courtesies and interchanges of delightful details which show plainly that basically we have a truly professional demeanor and the right feeling for one another, how sad is the ending of many of us. With every patient that comes under our care, however our opinions and our ideas of therapy may be, we nevertheless give the best that is in us to the patient. In their hour of illness we forget ourselves, and even the demands of our family, and think and work for the patients with only the one end in view—to relieve them of their suffering. To this end we oblige the patients and their relatives and friends, seek help of each other professionally for the benefit of the sick by consultations, and resort to every avenue of assistance at our call. Those not so able readily give way to advice from those who may be considered more able than ourselves.

We stay with a patient through all the physical trials and tribulations, and, as time goes on, accumulate a most advantageous amount of detail in the treatment of each particular one in illness, not only medically, but morally, humanely, and in all that means the highest obligations of our callings as physicians. So we go on, day by day, and year by year, from one to another, and when our experience has passed through years certain practical facts are plain to us all.

With this knowledge from experience, we are finally stricken with illness ourselves, perhaps in our last physical struggle with disease. Usually after being up and about longer than we should be, we take to our beds, often more because of the earnest solicitations of the members of our family than from our own desires. There a considerable proportion of us temporize with different medicants (or perhaps none at all are taken), and often though we have been cognizant for years that certain matters were not normal with us. The disease deepens, and then the wife, mother, or friend becomes alarmed, and suddenly takes the initiative against our desires perhaps and calls upon some medical man to see us. It usually is a personal friend, who feels grateful for the chance to help a sick brother, and although he listens to the wife's reports before he sees us, he is told that she 'phoned for him against our wishes and we do not know he has been sent for. He comes to our bedside. We look up and greet him first with surprise that he is there and then with friendly words, not at all like patients do in their anxiety for assistance. He tries to hold himself down to the medical and surgical aspect of the case, but we are more of a friend than a patient and insist upon considering ourselves as such. He goes away with the thought that he has done the proper thing to respond to help for a sick colleague, but at the same time with an inward feeling that he had not covered the case from a medical standpoint as he would have done for a lay person. The next day he calls again; the case is worse and he does somewhat better from a medical standpoint. After a day or so he learns

that Doctor So and So had called and questioned or examined the patient. He now feels only half a desire from a medical standpoint to call again. But he does, and learns that one or more friends, and a few consultants perhaps, have been there since his last call. The case becomes worse, and in the frenzy caused the family often calls one prominent man in the community after another, feeling that they should all come. Many of them do, and go away after more or less of a perfunctory medical service, which the next man changes. With each one who comes, the wife and the family cling to him for the time being, begging for assistance and advice.

In the meantime, the first, second, third, and so on attendant does not call any more. Finally, the condition settles into a coma and the medical man who happened to be called in that same afternoon continues on during the next few hours until the end—probably more because the family had given up hope of saving the Doctor than for any other reason. Such is the unfolding which I have seen and have learned of happening with some of my friends.

Why is it that we as medical men may be irregularly and poorly handled in our last illness? Simply because we are physicians, have physician's families, so many medical friends, and have not given advice as to what to do when we are ill.

There is a time when a medical man becomes a patient—we should all fully remember this and prepare for it. We should tell our people whom we want to care for us when ill, which medical man and surgeon. These two men should be absolutely in charge of the case, without interference by the family. If these two cannot agree on any point, it is understood they are to select a third which they or the family, or even the patient, may choose. And these should be all that have charge of the case, and even if they agree to more, the first nevertheless should be in absolute charge and all should understand this.

Only in such a plan as this can the sick Doctor be sure of obtaining as good a medical service as he deserves, namely, to have someone in charge guide the course of illness and shoulder the responsibility. As the only alternative to this (and it often is the best one to think of primarily as the proper thing to do for ourselves), we should tell our people in our days of health which hospital we should be taken to when ill. The hospital of choice should be a well-organized institution where perhaps our medical friends can be only visitors and in which we are only a patient to do what any other patient does when properly handled, although we may be under those perhaps who are personally not known to us.

I am satisfied that there have been instances in which medical men are not as well handled medically and surgically in their serious illnesses as they could have been and deserved—not that those who come in contact with them are not willing, but because we have not told our families what to do when sickness befalls us, and because our families and the medical men overrun the case when this had not been done and the matter is entirely left in hands so over-anxious and over-willing that steady direction is not common.

Anthony Bassler, M.D.

126 East Sixteenth Street, New York.

## A STRANGE PROPERTY OF LIVING ANIMAL TISSUE.

To the Editor of the Medical Record:

Sir:—Phenomena such as the one I am about to report are usually regarded with utter skepticism; and that such should be the case can scarcely give rise to surprise, since in the end they are generally shown to depend on subterfuges of one sort or another. But this one has now been under observation for so long a time, succeeds so regularly, and has been so often tested by properly qualified men whose good faith cannot possibly be questioned, that it seems worth bringing before the notice of the medical world at home.

The facts in brief are as follows: There lives in Bordeaux a lady who, during the past ten years, has succeeded, whenever requested to do so, in mummifying flowers, plants, fruit, molluscs, fish, and small birds and mammals, as well as the viscera of larger ones, simply by passing her hands over them without actual contact for a quarter of an hour once or twice a day during a period of time varying from a few days to a few weeks, according to the nature and importance of the object under experimentation; by the same influence the acetic fermentation of wine can be prevented altogether. She has never yet failed to mummify small, organic objects brought to her by the series of men who have interested themselves in her uncanny power, and in many instances control-samples, set aside, have followed the usual laws of putrefaction, whereas those treated underwent this special form of mummification; and, what seems more peculiar still, objects brought to her already partially decomposed finally mummify also, the process of putrefaction being brought to a standstill by the emanations from this lady's hands.

It should at once be mentioned that the person in question is not a medium, that neither she nor any of the physicians who have investigated and reported on the case have anything whatever to gain in the matter, directly or indirectly, and that although she obligingly lends herself to any sort of test or experiment that may be desired of her, she insists on retaining her incognito and is known under the pseudonym of Mme. X. She herself has undergone searching medical examination, and has been pronounced perfectly normal in mind and body. Although now fifty years of age, it was only ten years ago that she awoke quite by chance to the fact that she possessed this strange power, by noticing that some oranges and plants she had handled did not decompose or fall to pieces, but remained indefinitely in a sort of dried-up state. This occurrence aroused comment, and she was next asked by a friend to try her power on a pet bird that had died in its cage. Here, too, she proved successful, and since that time she has proceeded step by step, until there are now in existence hundreds of objects that have been mummified by her, the largest so far being a weazel, which has now remained in that condition for four years. A peculiarity about this mummification process is that these objects retain their natural colors perfectly, as well flowers, plants, as animals, and that the little stems continue to adhere firmly to the larger ones in plants, and the feathers or fur to the animals

During these ten years Mme. X. has been visited and tested by quite a number of investigators, no one of whom, however, had the courage to publish anything about this extraordinary phenomenon, so

afraid were they of the ridicule that might ensue. But finally two scientists of Bordeaux, Dr. Clarac, a leading practitioner who had known Mme. X. for four years and followed her career, and Dr. Llaguet, professor of chemistry at the Faculty of Bordeaux, published a note on the case in the "Annales des Sciences Psychiques" (Paris, Charles Richet, professor of physiology at the Faculty of Medicine, director), whereupon Dr. Geley, member of the Société Universelle d'Etudes Psychiques, was deputed to go down to Bordeaux and conduct a complete investigation on the spot. He remained there two weeks, experimenting on the question in every conceivable manner, and then made his report to the society.*

The articles to be treated were simply laid on a table in a laboratory; Mme. X. then came and passed her hands over them for a few minutes, sometimes turning them over so as to influence both sides—whereupon they were wrapped up in paper and placed under lock and key for safety. A séance of fifteen minutes was held every day, in some cases twice a day—Mme. X. keeping up an ordinary conversation with the bystanders while treating the objects—until the desired result had been obtained. Dr. Geley is of opinion that there are no grounds for entertaining any doubts as to the bona fides of the entire affair; but that as to attempting to account for Mme. X.'s mysterious power—that is quite a different matter. What seems to occur is that of the two parts of normal decomposition, dehydration and putrefactive fermentation, the latter is annulled altogether by the influence of Mme. X.'s hands, so that the former runs its course unimpeded, the animal or plant simply drying up, instead of decomposing.

However profound may be one's incredulity in matters psychical, it would seem as though, from the duration of these experiments (ten years), the absolute disinterestedness of all the parties concerned in them, and the standing of the men who have at last brought them to public notice—this peculiar power of Mme. X. is deserving of attentive consideration.

Cecil Kent Austin, M.D.
20 Rue Chalgrin, Paris, France.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

OFFICIAL REPORT ON TUBERCULOSIS—GODLEE'S ORATION ON LISTER—ASSOCIATION FOR PREVENTING CONSUMPTION—PROPOSED SALE OF HOSPITAL—A FRIENDLY SOCIETY'S COMPLAINT AGAINST DOCTORS ON PANEL—ANNIVERSARY OF MEDICAL SOCIETY.

London, March 14, 1913

This week the Departmental Committee on Tuberculosis has issued its final report, a very interesting feature of which concerns the administration of the funds for research obtainable through the Insurance Act. Methods of prevention are also considered, of which there are two classes, by those preventing the bacilli from entering the human system by those preventing persons into whom they have entered from developing active disease. The committee consider it idle to hope for the entire elimination of infection, or that the resistant power of human beings can be (apart from some process of immunization being discovered) so increased that infection may be ignored. To diminish infection its absence from milk and meat must be secured, precautions must be taken by those infected, the powers of resistance of the uninfected increased, the social and economic causes further investigated, the eradication of infected cattle from the country secured, and the special treatment of children carried out. For the last named they urge the importance of early diagnosis and recommend the wide application of the principle of open-air treatment as by open-air schools (day and residential), classes in the open, and institutions dealing with those threatened as well as those actually infected. To link up the several authorities concerned it is held desirable that the school medical officer, the dispensary and tuberculosis officer, and the family attendant should be in touch and the same services, as far as possible, be provided for children as adults. Correlation also is as desirable between the school-clinic, the open-air school, and the sanatorium, while special institutions or at least separate pavilions for children should be provided. For the last purpose it is thought about £200,000 will be needed and if this cannot be obtained under the Finance Act of 1911 additional funds should be provided.

The ultimate eradication of tuberculosis, the committee think, is not incapable of attainment, but the bovine disease is one cause of it in man and must be removed. The powers of local authorities are considered adequate as to meat, but additional measures are recommended as regards milk; existing and fresh regulations must be strictly enforced to diminish the risk of contamination from bovine as well as human sources. Legislation as to milk should be on the widest possible basis, with special powers granted by suitable regulations if required. As to the cattle themselves one case in a herd exposes the healthy to infection and as there are satisfactory tests for tuberculosis in cattle a sound herd living in hygienic surroundings should be tested from time to time, any reacting animal removed, and the premises disinfected. Other means must also be adopted for the eradication of bovine tuberculosis.

Dealing with the powers of resistance in the people attention is directed to insanitary houses and other provocatives of disease. The presence of persons in the advanced stage is a danger frequently increased by ignorance or carelessness. Isolation as far as practicable is desirable and the value of education is great and might be promoted by voluntary committees, health visitors and others working in touch with the Medical Officer of Health as well as by lectures and the circulation of literature on the subject. Disinfection of suspected premises is strongly advocated and stress laid on early diagnosis, which may be promoted by the dispensaries. Compulsory notification of all forms of tuberculosis would be, the committee think, of material assistance, and in adults the non-pulmonary disease might perhaps be dealt with in existing hospitals.

Research was carefully considered by the committee and they welcome the fact that the Insurance Act has made available a sum of money for this purpose—hitherto mainly dependent on voluntary agencies. They observe that the bulk of this money will be applied to research on tuberculosis, though it may be used in connection with any disease affecting insured persons. The inquiries to be carried out are defined as including those of "a clinical, pathological, experimental, statistical, and sociological character." Overlapping should be avoided, researches published, and the work generally coordinated. To accomplish it the committee recommend the establishment of an advisory council and

*. The "Annales" 1912, August and October.

of an executive committee—the council to include representatives from different parts of the kingdom, of the government departments concerned, of the medical, scientific, and trading bodies interested in research, of distinguished scientific persons, of business men of proved ability, with in most cases some experience in public work. From twenty-five to thirty members would suffice. But for the executive there should not be more than five to ten and the majority should be experts. The appointments should be made by government and a system of retiring by rotation every year with eligibility for re-election would suffice to change the personnel, while preserving continuity.

To carry out research the committee would establish a central bureau which would correlate and coordinate all results and cooperate with government statistical and other departments, the statistics being so collected and framed as to be comparable with those relating to mortality. A library and publishing department would be under the central bureau which would be under the immediate control of the executive committee. This body would employ investigators in clinical, pathological, bacteriological, clinical, and other scientific researches. Similar researches could be carried on in institutions (including laboratories and hospital wards) under the immediate control of the executive committee. So, if necessary, independently of any institution, prizes might also be arranged.

In connection with this scheme of research the committee advocate the creation of salaried posts, with pensions for whole-time research workers and the engagement of young talented investigators who otherwise might drift. Further they advise the establishment throughout the country (from funds outside the Insurance Act) of clinical laboratories and the extension to medical men and students of additional facilities for acquiring familiarity with tuberculosis in all aspects, especially in its earlier manifestations.

Sir J. Rickman Godlee delivered the foundation oration at the University College Union, last evening. He gave a graphic account of the advances in surgery resulting from Lister's great work. Antisepticism saved many limbs which formerly had to be amputated and enabled the surgeon to explore and work freely in parts of the body which were inaccessible until after Lister's discovery. But, said Mr. Godlee, his merits as a researcher, an operator, and a teacher, great as they were, each and all were eclipsed by his life work. He had done more than put the coping stone on the work of his predecessors—he had himself built much of the structure. There was now no hospital in the civilized world which did not carry out Lister's doctrines.

The National Association for the Prevention of Consumption, formed in 1898, appealed some weeks ago for a sum of £10,000. It professed to have been started at the suggestion of King Edward and its present patron is King George. Three thousand pounds has been subscribed and the committee seem encouraged but more must be secured if the work already begun is to be kept up. It is mainly educative, carried out by traveling exhibitions consisting of diagrams, models, pictures, etc., illustrating the causes and the preventive measures which can be used. Caravans are fitted up with these exhibits and literature for distribution. Lecturers accompany them and everywhere the exhibition has excited much interest. In Whitechapel it was kept open for seventeen days during which it drew 70,000 people. Throughout the kingdom it is estimated that the attendances have exceeded a million. It is an expensive campaign and the association is in need of additional subscriptions.

The annual court of governors of the Mount Vernon Hospitals for Consumption authorized the committee to sell one. They own two separate institutions but so many subscriptions have been withdrawn on account of the Insurance Act that they reported there seemed no possibility of retrieving the position. They owe their bankers £4,500 and the falling off of income has steadily progressed since the passing of the act. They have been compelled to pledge securities which had been set aside to begin an endowment fund, in order to pay the monthly accounts. Dr. T. W. Tunnicliffe and Dr. A. J. Whiting, members of the medical staff, were anxious for delay, speaking on behalf of all their colleagues, who held that the sale would be a calamity. After discussion, however, the proposal was carried with a few dissentients.

A Friendly Society which dubs itself the Rational has made complaints to the Insurance Commissioners against some of the panel doctors who will only furnish certificates for going on and off the clubs. Some also have filled up the certificates with the word "illness," while the clubs want to know the specific disease as questions of compensation and misconduct may arise beyond the matter of pay during sickness. The commissioners in reply state that the doctor is required to furnish such certificates as must be supplied by the sick person in pursuance of the rules of his society or of the Insurance Committee. Further where a society in accordance with its rules requires the cause of illness to be stated, "it would be the duty of the doctor to give the certificate in the required form." It is added that "the Insurance Committee concerned should be notified of any case where a doctor on the panel has refused to give a certificate which he is required to furnish in accordance with the terms of his agreement."

The Medical Society of London's Annual Dinner took place on the 5th inst., Sir Watson Cheyne, president, in the chair. The toast of the society was proposed by Sir F. Champneys, president of the Royal Society of Medicine, who said the most cordial friendship existed between the two societies and observed that last year most of the papers in the medical had been concerned with surgical subjects. The health of guests and kindred societies were duly honored and responses elicited. Sir R. Godlee in his speech gave an interesting account of the early days of this our oldest medical society—established 140 years ago.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*March* 20, 1913.

1. Memorials to Arthur Tracy Cabot, M.D. H. F. Walcott, P. Thorndike and J. B. Hawes, 2nd.
2. The Registered Midwife: A Necessity. E. F. Cody.
3. The Midwife in Massachusetts; Her Anomalous Position. J. L. Huntington.
4. Seasonal Variation of the Symptomatology of Pulmonary Tuberculosis. N. B. Burns.
5. A Collection of Facts, Ideas and Theories Relating to the Diverse Elements That Contribute to Success in Treatment of Joint Diseases. H. W. Marshall.

2. **The Registered Midwife; a Necessity.**—E. F. Cody notes that the midwife has been an integral unit of European life for centuries, a functionary, trained, licensed, and supervised by the government. Her income shows that she is an important economic factor. Among the newly arrived population of the United States the midwife is a

fixed agent. She can be taught cleanliness, the conduct of normal labor, and the means of recognizing the onset of complications.

**4. Seasonal Variation in Pulmonary Tuberculosis.**—N. B. Burns states that phthisical patients are apt to lose rapidly in weight and general condition in May, June, and the first two weeks in July, which season constitutes an unfavorable and critical period. Phthisical patients make an extraordinary recovery in weight and general condition in the month of August, which is a surprisingly favorable time of the year. August, September, January, and February are the most propitious months for obtaining successful results in treating pulmonary tuberculosis. Forced feeding in the unfavorable season seems to have availed very little in the limited number of cases studied by the author at North Reading.

**5. Factors in the Production of Arthritis.**—H. W. Marshall believes that the confusing clinical manifestations of gout, and of certain mild intestinal toxemias with arthritic lesions, can be explained satisfactorily only upon the basis that such persons possess unusually non-resistant joints, or that excessive amounts of mildly irritating waste products associated with these conditions circulate in the blood, or that both of these unusual variations in blood and joints simultaneously exist. Proportions between factors instead of independent single values of any one factor determine the development of pathological changes. For example, abnormal concentrations of vascular constituents depend upon the ratio between the rate of absorption and rate of excretion; and again the development of pathological joint changes depends upon the ratio between articular resistances and the degrees of irritation produced by vascular constituents acting upon the joints, rather than upon the absolute quantities of irritants in the blood. The latter may be excessive without giving rise to symptoms if the joints are unusually resistant. Any single factor may have either large or small values independently without upsetting normal healthy relations, provided other factors vary in the same proportion and in the same direction. On the other hand when variations among related factors occur simultaneously in opposite directions, and lead to deviations in the blood from normal healthy proportions, then pathological changes make their appearance as soon as tissue resistances are overcome. Comparatively slight variations combined in this way can produce pathological appearances in some instances.

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## New York Medical Journal.

*March 22, 1913.*

1. Artificial Pneumothorax. S. A. Knopf.
2. Artificial Pneumothorax. Mary E. Lapham.
3. Shortening the Uterosacral Ligaments. H. Grad.
4. Homosexuality. I. H. Coriat.
5. Psychic Constitutional Inferiority. M. J. Karpas.
6. Experiences with Neosalvarsan. J. Kaufman.
7. Surgical Catharsis. S. B. Overlock.
8. Removal of Mucocele of Appendix. J. W. Kennedy.
9. Therapeutic Possibilities of Manual Adjustment. R. K. Smith.
10. Unconscious Impairment of Vision. S. E. Pendexter.
11. Epidemic Cerebrospinal Meningitis. M. B. Wesson.
12. The Effect of Diplodia Zeæ and Some Other Fungi Upon Some Prosphorous Compounds of Maizie. H. S. Reed.

**7. Surgical Catharsis.**—S. B. Overlock states that so far as the surgeon is concerned the use of cathartics may he divided into two groups: their use in preparation for operation, and their use in securing evacuation after operation. Until within recent years every patient about to be subjected to abdominal section was required to undergo a prolonged and thorough catharsis as a routine practice. At the present time there is less rigorous preoperative catharsis and there is at the same time less of postoperative complications. In cases where the operation is elective and consequently sufficient time can be taken for preparation of the patient, a mild cathartic given three or four days before the date of operation, putting the patient on a diet and leaving but little residue, allowing water freely, and giving an enema every morning to wash out the large intestine, should bring the patient to the operating table in good condition. Added to this, some drug may be given to arrest or modify intestinal fermentation. No one would think for a moment of giving a cathartic if he knew there was present, in a given case, a perforated gastric or duodenal ulcer, a perforated appendix, or an opening in any other part of the alimentary canal. Yet the surgeon is frequently told, when a case comes to operation, that a cathartic has been given, often drastic and in heroic doses. The profession at large has not yet learned that in many instances of localized intestinal lesion, like an inflamed appendix, for instance, "purgation means perforation," resulting complications, and often death of the patient.

**10. Unconscious Impairment of Vision.**—S. E. Pendexter points out that a patient may have practically any error of refraction and to a marked degree without being aware of defective eyesight. He emphasizes the fact that a moderate error of refraction, especially with a close application of the eyes, is the one that patients complain about bitterly, while a serious impairment of vision often gives the patient no discomfort save that he (often unknowingly) is partially blind. It is noted that among 1,000 consecutive patients examined at the New York Throat, Nose, and Lung Hospital, 442, or 44 per cent., disclosed an error of two or more diopters. This class is the one in which patients often complain of no symptoms and are unaware of their defective eyesight. The general practitioner should insist on having the vision of all patients tested whether they complain or not.

**11. Epidemic Cerebrospinal Meningitis.**—M. B. Wesson concludes that the only early constant diagnostic sign in this condition is a relative rigidity of the neck. A clear cerebrospinal fluid indicates a bad prognosis. The degree of temperature is a misleading criterion; treatments should be continued until the spinal fluid is sterile. The method of injection should be by gravity; the amount of fluid withdrawn bears no relation to the size of dose of the serum, which should be determined by: (a) the rate of flow of the serum; (b) the amount of discomfort caused the patient, and (c) the quantity that can be given without using pressure. The serum should be given at least once a day and in severe cases every six hours. Vigorously treated cases, if seen early, have no bad after effects.

**12. Diplodia Zeæ and Pellagra.**—H. S. Reed presents data which show that *Diplodia zeæ* and other fungi grown upon corn meal liberate material amounts of inorganic phosphates. Corn meal infected with diplodia loses in weight, the loss increasing with the age of the culture. Aside from the question of the possible toxicity of any of the inorganic phosphates thus liberated or their possible rôle in the etiology of pellagra, the data show what is interpreted as a marked deterioration in the food value of the maize, due to the degradation of organic phosphorus and other compounds. As the fungi continue to grow they may take up a portion of the inorganic phosphates, possibly to form bodies having toxic properties.

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## Journal of the American Medical Association.

*March 22, 1913.*

1. Sterilization, Boiling, and Pasteurization of Milk. J. L. Morse.
2. Opportunities for the Preservation of Hearing. W. S. Bryant.
3. The Influence of Gastroenterostomy on Gastric and Duodenal Ulcers. A. A. Berg.
4. Theory and Practice of Medicine During the Seventeenth Century. A. S. M. Chisholm.
5. The Effect of Copper on Experimental Tuberculous Lesions. H. T. Corper, L. M. De Witt and H. G. Wells.
6. Pellagra: Pathology of Gastrointestinal Tract. H. P. Mills.
7. A New Ether Vaporizer. Technique of Insufflation Anesthesia. K. Connell.
8. Perineorrhaphy with the Figure-of-Eight Suture. C. C. Child, Jr.
9. The Congenital Absence of Ribs; Report of Case with Complete Absence of the Left Seventh and Eighth Ribs. C. Smith.

10. A Visceral Depressor. D. Hadden.
11. A Visceral Depressor for Use in Closing Laparotomy Wounds. L. M. Kahn.
12. A Suction Hand-Valve for Clearing the Operative Field. E. S. Kilgore.
13. Leishmaniosis (Oriental Sore) of the Nasal Mucosa. L. B. Bates.
14. A Spectacular Case of Lipomyxoma. H. C. Little.
15. Infection of Pharynx by the Aspergillus Niger. F. A. Conlon.
16. A Useful Lampstand Attachment. E. M. Bixby.

3. **Gastroenterostomy and Gastric and Duodenal Ulcers.**—A. A. Berg concludes that simple gastroenterostomy can influence pyloric or duodenal ulcer only when there is an attendant pyloric spasm. In the absence of the latter all the food passes through the patent pylorus, even though a gastroenterostomy is present and so the ulcerated area is not protected from trauma. The reflux of duodenal contents into the stomach is a natural attendant on gastroenterostomy, and serves to alleviate the distressing symptom of hyperacidity, but it does not favor the healing of the ulcer. Gastroenterostomy will not protect against a recurrence of the ulcer. Barring the question of malignant degeneration of a healed or healing ulcer, excision of an ulcer has no particular merit over a gastroenterostomy toward preventing recurrence or recrudescence. Pylorectomy does protect against recurrence, but it has an attendant higher mortality. Gastroenterostomy with pyloric exclusion favors the healing of the ulcer, and has the same value in preventing recurrence as has pylorectomy, with the great advantage over the latter of a very low mortality.

5. **Copper and Experimental Tuberculosis.**—H. J. Corper, L. M. De Witt, and H. G. Wells note that in a considerable number of experiments with both rabbits and guinea pigs, they have never observed copper compounds to produce any favorable effects on the course of tuberculous infections. The rabbits have been inoculated in one eye, which permits of especially favorable observation of the course of the disease. The guinea pigs have been inoculated subcutaneously. Human tubercle bacilli have been used in all experiments. The copper compounds used included copper sulphate, copper acetate, copper oleate and copper salts of amino acids. These have been administered both by feeding and by intramuscular injections begun at the time of inoculation, or at various intervals thereafter, and, in most experiments, pushed to the maximum dosage compatible with preserving the health of the animal. Analyses of both normal and tuberculous tissues have shown the entrance of the copper into the circulation and its deposition in the tissues including the eyes of the rabbits. The authors' figures have not shown any evidence of a tendency for the copper to accumulate in the tuberculous lesions in greater amounts than in the normal tissues, although apparently the copper does enter tuberculous tissues to some extent.

## The Lancet.

*March* 15, 1913.

1. The Surgery of the Thyroid Gland, with Special Reference to Exophthalmic Goiter. J. Berry.
2. Alimentary Toxemia. W. Hale White.
3. The Etiology of Cysts Connected with Hernia Sacs. R. W. Murray.
4. Spastic Cyclophoria. A. A. Bradburne.
5. On the Treatment of Carbuncles, Boils, Staphylococcic Infections, and Certain Streptococcic Infections by the Internal Administration of Large Doses of Dilute Sulphuric Acid B.P. J. Reynolds and R. J. Reynolds.
6. The Treatment of Pulmonary Tuberculosis. II. A Preliminary Note on Treatment with Tuberculin. N. D. Bardswell.
7. Some Anatomical Considerations of the Disposition of the Sciatic Nerve and Femoral Artery; with Suggestions as to Their Clinical Significance. F. Wood-Jones.
8. An Unusual Abdominal Case. J. Aikman.
9. A Case of Gangrene of the Leg in an Infant 11 Days Old; Amputation; Recovery. D. C. L. Fitzwilliams and W. H. Vincent.

1. **Surgery of the Thyroid Gland.**—J. Berry states that although goiter is common enough among children it very seldom demands operation at this period of life. His reasons for this view are, first, that nearly all goiters in children, being of the pure parenchymatous variety, commonly yield to medicinal treatment; secondly, that any operation on the thyroid gland of a young child involves a possible interference with nutrition and growth and also an appreciable immediate risk to life. It is rarely, therefore, that mere deformity can justify a thyroid operation in a child. Adenomata, unless actually causing serious symptoms, are also best left alone. Most parenchymatous goiters should, of course, not be treated by operation, but rather by removing, if possible, the cause; or by medicinal means, such as the administration of iodine in some form or other, or of arsenic or thyroid extract. The subjects of parenchymatous goiter often suffer much from constipation, and it is worth mentioning that simple attention to the bowels will often cause shrinkage of the tumor by withdrawing fluid from it. A parenchymatous goiter which does not yield to medicinal treatment and which is growing and causing serious dyspnea generally demands operation. It is especially in young subjects at or after the age of puberty that the danger of suffocation is greatest. Complete removal of the gland is seldom desirable.

5. **Carbuncles and Boils Treated by Large Doses of Dilute Sulphuric Acid.**—J. Reynolds and R. J. Reynolds report the favorable results they have obtained with this method of treatment. This consists in administering internally dilute sulphuric acid B. P. in 20 or 30-minim doses, each dose diluted with 2 ounces of water, every four hours. In the case of carbuncle treated by this drug in large doses (small doses are not of the slightest use), changes are observed to take place in the following order. First, within twenty-four hours the infiltrated area of tissue becomes strictly circumscribed; then the slough is observed to soften; during the next few days pus is freely discharged, and the whole affected area shrinks and healthy granulation tissue forms, filling up the cavity until the part is healed. The cicatrization takes place in a comparatively short time from the commencement of the treatment, the period varying, of course, with the size of the lesion. The only external application is a dressing of carbolized vaseline (1 in 20). Naturally in cases of what would appear to be streptococcic infection, such as those resulting from abrasions, or punctures by bones of high game, or inoculation by decomposing animal matter, the patient showing early symptoms of septicemia, a somewhat different though favorable course obtains; the high temperature is quickly reduced and the pain and swelling and malaise gradually subside, the patient progressing uninterruptedly towards convalescence. Where the lymphatics are inflamed and the glands enlarged and painful these conditions in a few days also disappear.

6. **Tuberculin Treatment of Tuberculosis.**—N. D. Bardswell finds that the addition of tuberculin to sanitorium treatment increases the chances of clearing the sputum of tubercle bacilli by some 16.6 per cent. in the case of patients suffering from early disease, and by some 17 per cent. in the case of patients suffering from the disease in its moderately advanced stages. This is a material gain, the significance of which is emphasized by the excellent after-history records of the patients who in past years lost their bacilli as the result of treatment. It may reasonably be anticipated that this increase in the number of patients who are now losing their bacilli will be associated with a corresponding improvement in the after-history returns of a few years hence. The preparations of tuberculin which have as yet been used most frequently are Koch's Albumose-free Tuberculin (A.F) and Koch's Bacillary Emulsion (B.E). Koch's Old Tuberculin (T.A.) and New Tuberculin (T.R.) have been used in a few cases. The initial dosage given in the majority of cases was 0.0001 c.c. or 0.00001 c.c, the dose varying with the condition of the patient and the nature of the lesion. The dose was increased when the last dose given produced no marked general or focal reaction;

otherwise the last dose was repeated until it no longer gave rise to such reaction. In increasing the doses the scheme generally followed was to give 0.1, 0.15, 0.2, 0.3, 0.5, 0.7 c.c. of each of the various dilutions of tuberculin used. The maximum dose given was 1 c.c. of undiluted tuberculin. When the higher dilutions are used an interval of two days between the doses was the general rule. With the lower dilutions and the pure preparations the interval was increased to seven days or more. The general condition of the patient and the nature and extent of the pulmonary disease are factors which have to be taken into consideration in determining the dose interval; in some cases, for example, the interval has to be increased on account of the occurrence of a reaction. Reactions are, as far as possible, avoided.

## British Medical Journal.

*March* 15, 1913.

1. Alimentary Toxemia. W. Hale White.
2. Bacteriology. F. W. Andrewes.
3. Medical Point of View. Robert Saundby.
4. Surgical Point of View. W. Arbuthnot Lane.
5. Death by Electric Currents and by Lightning. A. J. Jex-Blake.
6. The Necessity of Recognizing Midwifery as a Branch of Surgery. V. Bonney.

1. **Alimentary Toxemia.**—W. Hale White notes that the simplest type of this condition is that due to pyorrhea alveolaris. This most common type is that due to the presence of certain bacteria. Herter taught that there are probably three groups of cases: (*a*) The indolic, in which the probable fault is that the colon bacillus invades the lower part of the small intestine, and the patient is unable to digest carbohydrates, and usually passes an abundance of indican. (*b*) The saccharobutyric, in which the organism mostly concerned is the *B. aerogenes capsulatus;* the abnormal changes here occur in the large intestine. (*c*) A group combined of *a* and *b*. One must, when thinking of alimentary toxemia, bear in mind that the culture medium itself is as important as the bacteria, and therefore alterations of diet may influence the production of intestinal poisons as completely as bacteria themselves. A good instance of this is the improvement that follows the withdrawal of carbohydrates in cases of carbohydrate dyspepsia. It is possible that sometimes alimentary toxemia may be a hepatic disease, in which substances absorbed from the intestine in all human beings are so altered in the liver of some that they become poisonous, or abnormal bodies arriving at the liver may so alter it that it produces poisons. Anyhow, there is strong evidence that an important function of the liver is to protect one from poisons absorbed from the intestines, and that its efficient performance of this function depends upon carbohydrates. Intestinal toxemia may be caused by intestinal stasis. This is the condition in which such good results have been obtained by Arbuthnot Lane in short-circuiting the ileum.

2. **Bacteriology of the Alimentary Canal.**—F. W. Andrewes lays down the following propositions: (1) In an important group of cases of alimentary toxemia the poisoning is by foreign proteins, as such, the defect lying in the liver, which ought to shield the body from their effects. With this bacteria have, as a rule, nothing to do. (2) The main effect of bacterial activity in the production of alimentary toxemia lies in their ability to carry out protein cleavages beyond the capacity of the ordinary digestive ferments, with the formation of products which, when in excess, the body is unable to neutralize. (3) There is at present little evidence that true toxins, derived from the ordinary flora of the gut, soluble or intracellular, play much part in alimentary toxemia.

3. **Symptoms and Treatment of Alimentary Toxemia.**—R. Saundby reaches the following conclusions: Under physiological conditions the natural protective agencies in the alimentary system are sufficient to shield the body from the dangers of poisons formed therein or of those introduced with the food, provided that these are not in overwhelming amount. (2) Infrequent or incomplete evacuation of the colon is not in itself a cause of disease. (3) Such morbid symptoms as arise result from a breakdown in the protective machinery, in consequence of functional defects or pathological changes in the organs concerned. (4) Wholesome food in reasonable quantities may consist of animal or vegetable protein, carbohydrates, and fat in due proportion, and the evidence does not justify the entire exclusion of animal protein, as being directly or indirectly the cause of toxemia. (5) When toxemia is present treatment should be based on the principles of eliminating the poison already present, preventing any further introduction, and reinforcing the natural protective agencies. (6) Where there is extensive disease of the wall of the colon the exclusion or removal of this organ is a justifiable proceeding after a reasonable trial has been given to medical methods.

6. **Midwifery as a Branch of Surgery.**—V. Bonney notes that as a result of the affiliation of midwifery to medicine in the past, the analogy between reproduction and other natural processes has been too much insisted on. Childbearing is a physiological process, but it stands alone among physiological processes, in that while the rest of them are exercised for the good of the individual, reproduction is exercised for the benefit of the race at the cost of the individual. The toll reproduction exacts from womankind is very definite and is levied on civilized and aboriginal alike; animals, whether domesticated or wild, do not escape it. At no other time in the life of a healthy woman is ill health so imminent as during the period of childbearing. Pregnancy is normally associated with altered metabolic processes, closely verging on autointoxication; labor is an example of nature's rough surgery, puerpery a time of healing of self-inflicted wounds. Midwifery is an almost purely surgical art. Therapeutic treatment finds less place in it than perhaps any other department of our profession. The means it employs are almost entirely mechanical. Its operations, as compared with those of other branches of surgery, are to the full as difficult, and require, from the circumstances under which they are usually carried out, a far greater average degree of care, skill, and fortitude. Further, the liability for infection to follow them is much greater because asepsis of the operation area is much less under the control of the operator. Attendance on the puerperium resolves itself into the care and treatment of wounds of the genital canal—wounds naturally produced, indeed, but of the character of lacerations or abrasions, often associated with much bruising, and situated, as regards the placental site, in a position unfavorable for drainage, and as regards perineal tears in one impossible to render aseptic. It follows, therefore, that the obstetrician stands more in need of modern surgical surroundings, accessories, and assistance than any other class of surgeon if he is to carry out his work in keeping with the present-day standards of aseptic surgery.

## Berliner klinische Wochenschrift.

*March* 10, 1913.

**Non-operative Treatment of Cancer.**—Werner, of Heidelberg, gives an outline of the history of this subject. Up to twenty years ago he knew of no remedies save the mechanical and chemical ones. To-day we have in addition radio-, immuno-, toxin-, enzymo-, organo-, and chemotherapy. This greatly increased armamentarium, however, has added but little to the certainty of cure, and one is still in the experimental stage. Nearly all non-operative remedies have a common property. They are cytotoxic and seek to attack and destroy the individual

tumor cell, hence they are very largely toxic in nature; *i.e.* they are cell poisons and not specifics in the strict sense. The oldest and most practicable is Coley's fluid which, however, has no power over epithelial tumors, but only sarcomata. In this connection one may mention rattlesnake venom and bee poison, which attack tumor cells vigorously but are not yet suited to routine use. Several plant poisons (physostigma, etc.) behave in a similar manner. Various hormones and organ extracts have produced good results in experimental cancer. We do not know whether these are attributable to an ordinary toxic action or an immunization. The anemizing action of adrenalin is due, of course, to action on the blood vessels and is not anticytic. Active immunization with tumor material has been tested extensively in animals but not yet in man, for obvious reasons. Ferments have been used off and on for many years. Pancreatin sometimes causes improvement of the general conditions when given by the mouth, and small nodules have been dissolved *in situ* by trypsin injections. The proteolytic liver enzyme has a similar local action, but appears to affect unfavorably the general condition. Glycolytic enzymes may have some positive action, but only, perhaps, as anticytic poisons. Odiers' extensive claims have not been corroborated. Chemotherapy includes also the action of arsenic-holding substances on epithelial growths, local and constitutional. Atoxyl, were it not for its destructive action on the optic nerve, ought to be of value in sarcomatous growths by reason of its selective action for trypanosomes. Salvarsan and the cacodylates have a positive action, but perhaps only as arsenic salts in general, improving the general nutrition. Colloid metals and choline have been on trial for some time. In summing up, it is conceded that none of the preceding substances are to be compared in their results with *x*-rays, radium, and thorium.

**An Ancient Epidemic of Influenza.**—Mittwoch, without making an attempt to trace the entire history of influenza, gives an extended account of an epidemic described by Hamza, an Arabian historian, in the ninth century, A.D. One pestilence began in the Arabian desert in 871 A.D., and reached the Mesopotamian area. In Bagdad its ravages were such that the deaths amounted to five hundred or six hundred daily. But unfortunately we have no clinical details of this episode and hence doubt must remain as to its nature. Sixteen years earlier, however, this interval corresponding to the usually accredited chronological sequence of epidemics of influenza, the same area had been visited by a similar plague, details of which have been recorded. The episode was connected with a cold wave from the North, and the symptoms were essentially catarrhal. The spread of the disease was ascribed to the wind, as has ever been the case until its contagious nature was recognized. There is a sentence which appears to liken the disease to the epizootic in horses. Mortality, while high, was much lower than that of the great folk scourges. Hamza himself nowhere uses the general word pest. The most convincing evidence seems to lie in the chart given by the author from Hamza's description, in which the disease is seen to pursue two different routes, involving respectively the populous Mesopotamian area and the main travel road through Persia.

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## Münchener medizinische Wochenschrift.

*March 4 and 11, 1913.*

**Orthotic Albuminuria and Tuberculosis.**—Arnold concludes that the presence of orthotic albuminuria as evidence of incipient tuberculosis in the sense of Lüdke and Stern is only conditionally utilizable. Other general infections such as syphilis must first be excluded. It is also probable that other conditions with subacute or chronic course may give the same phenomenon. In any case the author's own experience does not show that orthotic albuminuria is in any sense characteristic of tuberculosis alone, as claimed by Tanago and Pedraja. He believes rather that it is a sign of either a chronic infection or intoxication. Pollitzer, approaching the subject from another viewpoint reaches the same conclusion.

**Specificity of Protective Enzymes.**—Abderhalden gives the present status of this subject: Have we succeeded in differentiating between the normal nongravida and normal gravida in respect to the behavior of blood serum toward placental tissue? This question must be answered affirmatively by reason of the researches of the author and other investigators. Another question then obtrudes itself, viz., how do nongravida behave who are in some pathologic condition? The author had already found deviations in gravida with pregnancy kidney, and salpingitis. He was next able to differentiate sharply twenty cases of cancer from pregnancy, and likewise cases of adnexa tumors of all kinds. The second question can be decided only by clinicians. In the interest of this research it is of the greatest importance that the investigations shall be so ordered as to lead to no ambiguous finds. Every communication of results which does not answer this requirement will lead to false routes. The difficulty of obtaining the buiret reaction furnishes much opportunity for erroneous interpretation, and alien matter may gain admission to the best fluids from a variety of sources. With the introduction of the latest procedure (ninhydrin reaction) the method of dialysis is placed on a practicable basis but at the same time the danger of errors is considerably augmented.

**Prophylactic Serotherapy of Tetanus.**—Kolb and Laubenheimer have come to some practical conclusions as a result of the study of a special case reinforced by a similar one from the literature; in a severe wound in which gas formation was noticeable, the exciters of the gas phlegmon were demonstrated. Further, there were found in the secretion of the wound tetanus bacilli, without the subsequent development of tetanus. Tetanus antitoxin had been injected into this patient immediately after the injury which suggests the question as to whether failure of tetanus to develop was due to the prophylactic action of the serum. The authors are naturally inclined to a belief in the agency of the latter because the wound was severely infected. At the same time they admit the possibility of another rationale. We know that various pathogenic germs can be present in wounds without determining general infection, and this of course could also hold good for tetanus. It can only be claimed that the injury was typical of the sort which produce tetanus, having the necessary bacterial flora with special emphasis on the presence of the anerobic gas producing germ.

**Two Cases of Severe Lead Poisoning in the Brass Industry.**—Althoff relates this unusual episode which could only have been brought about through years of inhalation of minute quantities of lead present wholly as an impurity. The first patient showed plumbism after fourteen consecutive years of exposure as a polisher of brass articles. The earliest symptoms were gripes in the upper abdominal region, which soon developed into almost unbearable colic, vomiting, headache, and impervious bowels. Some of the supposedly characteristic symptoms of plumbism did not develop and patient insisted that did not have to do in any way with lead. He was treated symptomatically and after five days all evidences of stoppage had disappeared. His recovery was relative, anemia persisting. The other patient was a brother and co-laborer who developed much the same clinical picture after fifteen years' exposure, but in addition symptoms pointing directly to metal poisoning (green line on gums). The greenish perspiration also suggested brass. Symptomatic

treatment caused an involution of the bowel symptoms. The apparent impossibility of lead poisoning led at first to a diagnosis of ileus, which was later changed to brass poisoning. It was subsequently learned that on technical grounds one per cent. of lead is often added to brass. The dust formed in polishing by machinery with emery contains both the latter and brass particles in equal parts. This when inhaled contains not over one-half of one per cent of lead. As already stated, the poisoning is in a marked degree cumulative in character.

**Extirpation of a Large Meningeal Tumor with Local Anesthesia.**—Andree relates a case of this intervention in great detail, the interest centering largely on the anesthetic element, and further, on the great size of the mass, equal to that of a small fist. The recovery was relative, the patient being left with hemiplegic symptoms. The operation was done in two stages, the first of which had to with the cranial opening. This seems an advantage because when ready for the second stage the surgeon finds the limits of the tumor much more sharply defined. In both stages circular local infiltration anesthesia with novocain was practised. The dura was found to be anesthetic; a debatable point, for while Bier holds that the novocain is absorbed directly within the cranium, Krause believes the dura to be naturally analgesic. At present one lacks information as to the extent to which local anesthesia is being used in these cases.

**Chloroform Narcosis and Liver Disease.**—Hildebrandt considers the problem of the role of chloroform in the genesis of hepatic affections. One of the latter alleged to exist is spoken of as delayed chloroform poisoning. There seems no good reason to doubt that if the liver is already diseased, chloroform constitutes something of a menace. Animal experiment shows that the drug can directly set up hepatic degeneration. In clinical medicine it is recognized that when some disease of septic nature, which tends to produce parenchymatous hepatitis, is complicated by the need of a chloroform narcosis, two dangerous factors may act in concert in the production of hepatic necroses. It is advised that before every chloroform narcosis the liver be carefully tested as to integrity and functional capacity. Urobilinuria would contraindicate chloroform, and is furthermore accepted as the chief criterion of the existence of chloroform necroses of the liver. With any suspicion of hepatic lesion one should use ether or some form of local anesthesia.

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### Deutsche medizinische Wochenschrift.

*March 6, 1913.*

**Cure (?) of Addison's Disease.**—Teschomacher reports a case of apparent cure of this disease for what it is worth. Patient was a woman of 54, whose appearance had undergone a remarkable change within a short time. Ill health had begun with severe migrainous attacks, followed by anorexia and dyspeptic symptoms, slowing up of all movements, prostration, emaciation, etc., and the usual pigment anomalies. Physical examination showed no evidence of organic disease. The blood pressure was very low (90-100). Symptomatic treatment was used at first with slight improvement, and later adrenalin and an arsenical mineral water were prescribed. The symptoms became progressively worse, and the diagnosis, somewhat in doubt because the pigment changes seemed to have come to a standstill, became assured when the latter again became very active. The adrenalin-arsenic treatment, which had not been kept up, and perhaps not even begun (the history is not clear on this point), was now instituted in earnest, but for months no favorable change was noted. Finally, the causation being obscure, the patient was seen to be slowly gaining, and within a relatively short time had almost wholly recovered. The blood pressure was now normal. The migrainous attacks, which had disappeared during the period of low blood pressure, now returned; otherwise the woman was in perfect health. The author says little of the details or effects of treatment, and seems to leave the question open as to whether recovery was due wholly to the remedies.

**Latent Erysipelas.**—Since this term was recently introduced into medical literature by Schlesinger to characterize certain cases of erysipelas, other authors have accepted it in reporting similar cases. Semenow-Blumenfeld reports two of these, of which one may be abstracted to indicate the applicability of the word latent. A woman aged 24 had an immense phlegmon in the submaxillary region, the result of a carious tooth. Over 600 c.c. of putrid pus were extracted from it. The general condition at once became normal, and the cavity began to close promptly. Two weeks later a hard infiltration was felt *in situ*, with slight temperature rise. The nearly healed wound was deepened but no pus found. Despite the fever there were no unfavorable symptoms in wound or discharge. About three weeks after the original incision an erysipelatous blush was seen at the edges of the wound. As this increased the infiltration subsided. The erysipelas migrated on the surface to some extent, eventually disappearing. As the wound had been treated with the strictest aseptic precautions the author is forced to conclude that the erysipelas cocci had been slumbering in the depths of the tissues until activated by the dental trouble.

**Tuberculous Infection in Childhood.**—De Besche as a result of a study of fifty non-selected cases found human bacilli responsible in forty-five, bovine bacilli in three, while in the other two the result was in doubt. Hence, at least in the city of Christiania, from six to eight per cent. of children receive the disease from the cow. The bacilli were all taken from autopsy material, but this does not mean that death was due necessarily to tuberculosis. This was true beyond doubt in twenty-eight children, and in fourteen death may have been due to other causes in part, but at least the children died with active tuberculosis. In the balance, the children did not have active tuberculosis and the bacilli found in their lymphnodes were in a latent state. In each of the fifty cases which De Besche studied, the germs were cultivated, and the diagnosis was assured further by inoculation tests on guinea pigs.

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**Pneumonic Lesions and Non-Virulent Pneumococci.**—M. Wollstein and S. J. Meltzer state that the intrabronchial insufflation of a non-virulent pneumococcus causes, like the insufflation of a virulent pneumococcus, the development of an exudate in the lungs which, in general, leaves the framework unaffected, and the lesion presents the gross appearance of a lobar pneumonia. It differs, however, materially from the pneumonia produced by virulent pneumococci in the important points that the consolidation tends to a more rapid resolution, the disease is non-fatal, the blood is not invaded by the organism, and the exudate is strikingly poor in fibrin. As to the question which was the starting point for this investigation, namely, whether the pneumonic lesion produced by the streptococcus is merely a form of pneumonia caused by a less virulent organism, it may be answered for the dog, it seems, in the negative. The leucocytic infiltration of the framework of the lungs which occurs invariably in streptococcus pneumonia, and which is practically absent in the lesions caused by the virulent as well as by the non-virulent pneumococcus, is a strong enough feature to form a dividing line between the two forms of experimental pneumonia previously described.—*Journal of Experimental Medicine.*

## Insurance Medicine.

**Albuminuria, Pathological and Physiological, with Reference to Life Assurance.**—A. E. Finckh of Sydney, in a paper read before the New South Wales Branch of the British Medical Association, says that in cases of apparently healthy individuals who show albumin in the urine, we are in the habit of safeguarding ourselves by the use of such terms as physiological albuminuria, functional albuminuria, and transitory albuminuria. By using one or other of the above terms we intend to indicate that, although albumin is present, there is no definite pathological derangement, and therefore the condition of the individual is not necessarily a grave one. The question thus arises as to the exact meaning of the above terms, and the advisability of employing them. The term physiological albuminuria is evidently based upon the fact that so many text books mention that a minute quantity of albumin is normally present in urine. When we consider that protein of any sort can be found in normal urine only to the extent of about .002 per cent., an amount so small that our usual laboratory methods do not even detect it, we must, for all practical purposes, consider that normal urine does not contain even a trace of albumin. He thinks therefore that it would be better to discard the term physiological albuminuria altogether in this connection.

The term functional albuminuria is perhaps a better one, but also has its objections. In medicine the word functional is usually employed as opposed to organic; it is used to indicate that the sign or symptom to which it is applied is not due to any organic lesion. When dealing with urine, the above meaning of the word brings us at once into difficulties, for even in so grave a condition as granular contracted kidney, where the pathological changes are pronounced, it is possible to find a total absence of albumin. Therefore, one must be guarded in employing this term. The third term, transitory or transient albuminuria, seems to be the only one that should be employed in insurance work. It means nothing beyond the fact that the urine occasionally contains albumin, and it is left entirely to the clinician to put the proper construction upon such finding.

Albuminuria should always be looked upon as pathological; its causation is due to some abnormal condition of some organ or some system. It should not be forgotten that the albumin found in a urine may possibly be due to the presence therein of blood or pus of purely urethral origin, or of vaginal or prostatic secretions. Also albuminuria in any febrile condition, as typhoid fever or pneumonia, would not be taken into account when concerned with life insurance work.

When the amount of albumin in a urine is comparatively large, there is no difficulty in detecting it, but when the amount is small, perhaps minute, one does not always feel confident as to the reliability of the ordinary methods of testing. The two methods that may be easily employed in one's daily work, and yet are of an exactness which meets the requirements of large chemical pathological laboratories, are the old established test of boiling and Heller's test.

Exactness must be employed in the performance of these tests. Thus in the boiling test the urine must be first rendered perfectly clear by filtering. Urine containing bacteria will not filter clear, as the organisms pass through the ordinary filter, but in such cases examination would be deferred. The urine must be only faintly acid. If necessary a 25 per cent. dilution of nitric acid must be added. If the urine is very acid it should be diluted with a saturated solution of sodium chloride. Acetic acid must not be used on account of the possible formation of acid albumin which is not precipitated by boiling. Take 10 c.c. of such clear acid urine and boil; after boiling add 10 or 20 drops of 25 per cent. nitric acid, or two or three drops of 25 per cent. acetic acid. Do not boil again, since in the case of nitric acid having been added, partial solution of the albumin will occur. The precipitate must appear at once on boiling otherwise it is not albumin. Nitric acid should be preferred, as even a small excess of acetic acid will redissolve some of the albumin; again, if mucin be present acetic acid will not dissolve it, whereas nitric acid does.

For accurate work the above quantities and dilutions must be strictly adhered to. For purposes of comparison, two test tubes of equal amount of the clear urine should be used; one treated as above, the other used as a control. Certain drugs, such as turpentine, copaiba, and sandalwood, cause a similar cloudiness; but if alcohol be added, on cooling of the urine this cloudiness will disappear if it is not due to albumin.

The next test, that of Heller, is performed as follows: Place 5 c.c. of concentrated nitric acid in a test tube; add carefully, without mixing, an equal amount of the filtered urine. A distinct white disc will appear at the junction if albumin is present. It is necessary to wait about three minutes before a negative result can be read off, since the formation of the disc may be retarded if the quantity present is very small. No other precipitate will appear in the shape of the above-mentioned disc; any cloudiness due to other substances appears some distance from the junction of the two fluids, leaving no possible doubt if the test has been performed with neatness.

We have thus two very simple methods that give us all the information required, and it is always best, in doubtful cases, to perform them side by side. There is no necessity to resort to the more modern and more complicated methods, as greater accuracy than that given by the above two tests is never required in practice, and they at least have no pitfalls.—*Australian Medical Gazette*, November, 1912.

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**The Overweight** finds no greater favor in the eyes of insurance officers in England than he does in America. Mr. Lewis P. Orr, an English actuary, writing on "Insurance Research and Eugenics" in the *Eugenics Review* for January, 1913, says that the corpulent must go, or rather he must no longer come, and as obstacles to his coming Mr. Orr looks to the eugenist and the physician—the eugenist to prevent inherited corpulency and the physician to see that it is not acquired. His prejudice against the fat, from the insurance point of view, is based upon the statistics presented by Symonds and others in this country, which show that among the corpulent risks—those whose abdominal measurement is greater than that of the chest—the deaths are from 18 to 52 per cent. above the expectation. The writer believes that a campaign against overweight can be successfully waged, and he hazards the opinion that the day may be looked forward to "when the fat man will be largely extinct—outside the showman's booth." Mr. Orr is an optimist.

# Book Reviews.

GRUNDRISS DER PSYCHIATRISCHEN DIAGNOSTIK, nebst einem Anhang enthaltend die für den Psychiater urchtigsten Gesetzerbestimumungen und eine Nebersicht der gebrancht lichsten Schlafmittel. Von Prof. Dr. RAECKE, in Frankfurt a. M. Mit 14 Textfiguren. Dritte vermehite und verbesserte Axiflage. Preis 3 m. Berlin: August Hirschwald, 1912.

THIS third edition of a very-practical little book on psychiatric diagnosis is an improvement on former editions in that it shows thorough revision and the addition of some new matter. The various methods of testing the vestibular apparatus are briefly described in this edition; intelligence tests for the child are also added; and suggestions for the study of simulations are more fully elaborated. Those who read German will find the book useful. The classification used by Siemerling is employed. Those accustomed to the classification of Kraepelin will be able to follow it.

HOUSEHOLD BACTERIOLOGY, for Students in Domestic Science. By ESTELLE D. BUCHANAN, M.S., Recently Assistant Professor of Botany, Iowa State College, and ROBERT EARLE BUCHANAN, Ph.D., Professor of Bacteriology, Iowa State College, and Bacteriologist of the Iowa Agricultural Experiment Station. Price, $2.25 net. New York: The Macmillai Company, 1913.

THIS volume is said to consist of a revision of lectures given for several years to students in Home Economics at the Iowa State College and presents ample evidence of the excellence of this course. The general sections on classification, morphology, physiology, etc., are treated in a clear and comprehensive manner. The essential part of the work, however, is the section devoted to fermentation, which discusses concisely the relation of microorganisms to natural and prepared foods. The section on microorganisms and health is naturally much condensed but contains four valuable chapters on the contamination of water, air, milk, and foods. This rst work devoted to the bacteriology of Domestic Science constitutes a distinct addition to the literature and will be found to be of marked value. The average intelligent housewife could read it with appreciation and profit.

VACCINE THERAPY, Its Theory and Practice. By R. W. ALLEN, M.D., B.S. (Lond.), Late Clinical Pathologist to the Mount Vernon Hospital for Disease of the Chest; Late Pathologist to the Royal Eye Hospital; Late Gull Student of Pathology, Guy's Hospital. Fourth Edition. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Company, 1913.

THE medical profession is frequently accused of being made up to a large extent of faddists who, with unrestrained enthusiasm, take hold of a theory or method of treatment, carry it far beyond any logical or orderly development and advocate it at all times. Finally something new appears, the bubble bursts, and the old is thrown entirely away, the majority being blind to its value and blaming the theory for the results of unskillful application. The average man will have little idea of the extent of the development of vaccine therapy until he sees recorded in this volume the enormous number of diseases in which it has been practised. It is to be hoped that this valuable therapeutic measure will not suffer at the hands of its too enthusiastic supporters. This edition has been completely rewritten, since the subject has undergone such marked changes in the two years which have elapsed since the appearance of the third edition. The author adheres closely to the teachings of Wright except that he considers the opsonic index to be more of theoretical interest than of practical assistance in using vaccines. The greater portion of the volume is occupied with discussion of the vaccine treatment of various diseases far too numerous to mention. Minute directions are given for the preparation of the vaccines used.

FRANZ KÖNIG, LEBENSERINNERUNGEN. Price, 2 Marks. Berlin: Aug. Hirschfeld, 1912.

THE book contains an excellent reproduction of a portrait of the author and reminiscences written down by the author at the time of their occurrence. From these were omitted those circumstances which would affect persons still living and also those of interest to the smallest family circles only. An inactive period of six years from the time of the author's retirement from active life to its close is conspicuous by the absence of any personal notes. Life without a purpose was considered as almost wholly useless. This period is filled by small sketches penned by the son of the deceased. The book concludes with a speech of appreciation for the author's life and work by O. Hildebrand delivered on the 16th of February, 1911, in the Surgical Clinic at the Charité, Berlin.

ROBERT KOCH, eine biographische Studie von Dr. KARL WEZEL, Stabarzt an der Kaiser Wilhelms-Akademie fur das militararztliche Bildungswesen. Mit einen Porträt und 5 Abbildungen im Text. Price, 3.60 Marks. Berlin: Verlag von August Hirschwald, 1912.

THE author in this work gives us a clear idea of the individuality of the man and his great contribution to science as a small outward sign of the deep gratitude and the steadfast loyalty which the German Officers' Sanitary Corps feels for its master teacher and friend. The name of Robert Koch is inseparable from the history of modern hygiene and bacteriology. He is not only the real founder of bacteriology but also a real reformer of modern hygiene. The immediate result of his discoveries and those of his pupils brought about a revolution in the whole field of the preservation of health and the prevention of ravaging pestilence. As late as 1874 Billroth wrote that at the time there was no morphological proof that micrococci or bacterial forms could be held responsible for the development of a certain disease in or on the body. Two years later Koch published his phenomenal works, which were the marvel of the scientific world of the time, and brought light, clearness, and knowledge upon the secret connection between cause and effect. By the application of his new method he succeeded in determining the causal relation between a characteristic bacteria or spore and the definite disease which it causes.

VERÖFFENTLICHUNGEN DER ROBERT KOCH-STIFTUNG ZUR BEKÄMPFUNG DER TUBERCULOSE. Price, 4 marks. Leipzig: Georg Thieme, 1912.

I. UBER DIE BEHANDLUNG DER TUBERKULOSE MIT KOCH'S ALBUMOSEFREIEM TUBERCULIN. Von Prof. Dr. G. JOCHMANN, leitender Artz der Abteilung für Infektionskrankheiten am Rudolf Virchow-Krankenhaus in Berlin, und Stabarzt Dr. B. MÖLLERS, Komm. zum Institute für Infektionskrankheiten. This albumen free tuberculin is a specific efficacious preparation which is made from a culture fluid free from albumen in contradistinction to the old Koch albumin tuberculin. It therefore contains only those albuminous products which are formed by the tubercle bacillus during its development, which is partly given off to the nourishing medium from the live cultures and in part from that which is freed from the living cultures by autolysis from the dying bacteria. The subjective symptoms after the injection of this new preparation are less marked than those produced by the older. The curative results are good, well fitted for ambulatory patients because of the slight reaction. A marked increase of complement binding antibodies is usually not produced which observation has also been made with the old tuberculin.

II. UBER DIE STOMACHALE ANWENDUNG VON TUBERCULINPRÄPARATE. Von Dr. B. MÖLLERS, Komm. zum Institute für Infektionskrankheiten, und Dr. W. HEINEMANN, Assistenzarzt am Rudolf Virchow-Krankenhaus.

THE authors found that it is possible to give tuberculin in capsules which resist digestion in the stomach but are dissolved in the intestines under the action of the digestive juices. Pepsin and trypsin diminish the specific action of the tuberculin. The method is unreliable for diagnostic purposes.

III. VERSUCHE MIT CHINOSOL UND FORMALDEHYDE BEI TUBERCULOSE. Von Dr. KURT BLÜHDORN, chem. Assistenzarzt am Rudolf Virchow-Krankenhaus in Berlin.

THE author found that neither chinosol nor formaldehyde, nor both substances together, even under the most favorable experimental conditions and by the use of large doses for injection, are capable of preventing the occurrence of tuberculosis or its fatal ending.

VERÖFFENTLICHUNGEN DER ROBERT KOCH-STIFTUNG ZUR BEKÄMPFUNG DER TUBERCULOSE. HERAUSGEGEBEN VOM VORSTAND DER STIFTUNG. Heft 4, pages 54. Price, 4 Marks. Leipzig: Verlag von Georg Thieme, 1913.

I. Studien uber spontane Kaninchentuberculose. Von Stabarzt Dr. ROTHE, früher kommandiert zum institute.

II. Beitrage zur Frage des grannlaren Tuberculosevirus. Von Dr. R. BITTROLFF, Assistent am hygienischen Institute, unde Dr. K. MOMOSE, Generaloberarzt der Kaiserl. japanischen Marine.

III. Uber den Typus der Tuberkelbazillen bei Parinaudscher Erkrankung (Conjunctivitis tuberculosa). Von Stabarzt Dr. B. MÜLLERS, kommandiert zum Institut.

The Division of Child Hygiene of the Department of Health of the City of New York. By S. Josephine Baker, M.D., Director of Child Hygiene. Monograph Series, No. 4. New York: Department of Health of the City of New York, 1912.

This monograph describes the Division of Child Hygiene of the Department of Health of the City of New York, including its history, organization, functions, methods, and results. The activities of this important division of health administration are concerned with midwives, infant mortality, foundling babies, day nurseries, institutions for dependent children, medical inspection and examination of school children, and employment certificates. This useful monograph has been published for general distribution.

The Practice of Dentistry. A Practical Treatise Upon the General Practice of Dentistry, Operative and Prosthetic, Exclusive of Orthodontic Practice. By Leo Greenbaum, M.D., DD.S., formerly Dean and Professor of Clinical Dentistry, Materia Medica and Anesthesia, in the Philadelphia Dental College; and Max Greenbaum, DD.S., Formerly Quiz Master in the Philadelphia Dental College. With 350 illustrations. Price $6.00. New York and London: D. Appleton & Company, 1912.

The time has vanished when physicians took no interest in the work of the dentist, and when the dentist ignored the value in his vocation of a broad foundation of medical training. A book on the practice of dentistry, such as the volume under review, shows how in many respects the professions of medicine and of dentistry interlock and overlap one another. It is strange that up to the present time there has been written no volume dealing with the general practice of dentistry. In order to fill this gap the authors have written a work that is designed to meet the practical requirements of the active dental practitioner, by detailing the most advanced developments and methods in his work. The book consists of two sections, the first dealing with operative dentistry, the second with prosthodontia. In the first section the chapter headings are as follows: Dentition: the Factors and Periods of Eruption of Deciduous Teeth; Dentition of the Permanent Teeth; Dental Caries: History and Etiology; Dental Caries: Pathology; Treatment of Dental Caries and Preparation of Cavities; the Treatment of the Deciduous Teeth; Inlays: Indications for Their Use, and the Cavity Form; Construction of the Porcelain Inlay; the Construction of the Gold Inlay; Hypersensitive Dentine; Erosion; Pyorrhea Alveolans; Filling Materials; Diseases of the Dental Pulp; Diseases of the Pericementum; the Conservation of the Dental Pulp; the Removal of the Dental Pulp; Root Canal Filling; the Exclusion of Moisture During Operations; the Separation of Teeth Preparatory to Filling; Oral Hygiene; the Discoloration of Teeth; the Plantation of Teeth; and the Extraction of Teeth. The section on Prosthodontia comprises the following topics: The Study of the Mouth Prior to Taking the Impression; Selecting the Base and Form of Denture; Impressions; Casts; Dies and Counterdies; Swaged Metallic Plates; the Bite; Vulcanized Rubber as a Base for Artificial Dentures; Artificial Crowns; Bridgework; Cast Dentures of Aluminum and Fusible Alloys; Continuous Gum Dentures and Palatal Mechanism. The physician will find much in this volume to interest him, particularly on the subject of oral hygiene. The progress in the use of inlays is fully discussed. There are many helpful illustrations and in this and in other respects, such as the excellent paper and typography, the volume is one that cannot be too highly commended. On the other hand the style of the authors, while aiming at elegance and dignity, has sacrificed simplicity and is apt to be cumbrous and unduly verbose. This is an imperfection of no great moment in a work of this kind.

A Guide to Some of the Hygienic Features of New York City. Prepared for the XV. International Congress on Hygiene and Demography. By Charles F. Bolduan, M.D., Assistant to the General Medical Officer, Monograph Series, No. 6. New York: Department of Health, City of New York, 1912.

The subjects discussed in this excellent summary of the hygienic features of New York City are the following: Historical and Governmental; Department of Health; Municipal Milk Stations in New York; Water Supply; Street Cleaning; Sewage; Hospitals; Board of Ambulance Service; Disposal of the Dead; Public Baths; Children's Playgrounds; Correctional Institutions; Quarantine of the Port of New York; Physicians' Medical Education; Control of Immigration; Scientific Institutions, and Directory of the Department of Health. This paper has been published for general distribution.

Traité International de Psychologie Pathologique. Directeur: Dr. A. Marie (de Villejuif). Comité de Rédaction: MM. les Professeurs Bagenoff (de Moscou), Bechterew (de St. Pétersbourg), Clouston (d'Edinbourg), Déjerine (de Paris), Grasset (de Montpellier), Lugaro (de Modène), Dr. Magnan (de Paris), Pilcz (de Vienne), Ziehen (de Berlin), Tome Troisième, Psychopathologie Appliquée. Par MM. les P'rs Bagenoff, Bianchi, Sikorsky, G. Dumas, Havelock-Ellis, Dr. Cullerre, A. Marie Dexler, F. Helme, P'r J. Wertheim Salomonson. Avec 338 gravures dans le texte. Paris: Librairie, Felix Alcan, 1912.

This is the third and last volume of an important work by many collaborators of eminence in the field of psychiatry in Europe. The first volume appeared in 1910, and was on general psychopathology. The second appeared in 1911, and was on clinical psychopathology. Each contained, like the present work, over a thousand closely printed pages. The first two volumes have already been reviewed in these columns. There are four chapters in the present volume. The first chapter comprises "General Considerations on the Physio-Pathology of the Sensorial Sphere," by Bianchi; and "Morbid Mentality from the Psychologic Point of View," by Sikorsky. Sikorsky's presentation is more or less new, and is of great interest, not only clinically and philosophically, but also as a study in ethnology, art, and physiognomy. There is an appendix to this chapter, on "Pathologic Sadness and Joy," by Dumas; and "Psychopathic Sexuality," by Havelock-Ellis. The second chapter (on comparative psychopathy) embraces a delightful discussion of "Madness in History," by Cullerre; and essays by Marie, Bagenoff and Dexler, on "Ethnic Psychopathology" (Asia, Africa, American Indians, etc.); "Collective and Morbid Psychology" (mental contagion, etc.); and the "Principal Characteristics of the Morbid Psychology of Animals" (higher mammalia). Chapter three is on "the General Etiology of Psychopathic Troubles," by Marie, and includes cosmic influences (barometric, thermic, electric, etc.), and social causes (crises, toxic, bio-physiologic, etc.). The fourth and last chapter is devoted to the practical application of the methods of the laboratory to the study of psychiatry. This embraces: Experimental Psychology in its Relations to Psychiatry (psychometry, psycho-physiology, and psychoanalysis), by Marie and Helme; and the uses of electricity in neurobiologic examinations in psychiatry, by Salomonson.

In the opinion of the reviewer, this volume, added to the two which have preceded it, forms a monumental work which should be in every public library, for reference not only by the psychiater and neurologist, but by any educated person who may be interested in either the normal or the disordered mind. As A. Marie truly says, "The sick man is a near neighbor of the man who calls himself normal. Physiology and pathology differ only by degrees and insensible transitions. All things concerned with psychopathology, whether in time or space, in history or in race, in higher animals or in man, have the same laws of general unity. * * * The microcosm of the insane asylum is but a caricature of the normal world."

Cancer: The Problem of Its Genesis and Treatment. By F. W. Forbes Ross, M.D. (Edin.), F.R.C.S. (Eng.), D.P.H. (Lond.), late Civil Surgeon His Majesty's Guards' Hospital, London. Price 5s. London: Methuen & Co., 1912.

Dr. Ross's thesis is that cancer is due to a want of balance in certain mineral salts of the body, such want leading to disorderly and malignant growth of epithelial cells. The special salts singled out by the author are those of potassium, and the data which have led him to this assumption consist mostly of personal clinical observations, the most important of which, in his estimation, is "that actually not one single case of cancer has ever to his knowledge occurred amongst the clientele of his practice." This freedom from malignant disease among his patients he attributes to the use of "an enormous quantity of potassium citrate, bicarbonate, and hypophosphite, where other doctors have used sodium."

It must be granted, of course, that in our present ignorance of the specific causation and the specific therapy of cancer, Dr. Ross's theory has the same *raison d'être* as many other old and new theories of cancer. We must confess, however, that the proofs given by the author in support of his views are not at all as convicing as he seems to believe. Mere rarity of cancer in the author's practice and the supposed beneficial action of certain potassium salts in a few cases treated by him are hardly sufficient: the remaining evidence brought forward is of too theoretical a character to mean very much in the support of his contentions.

# Society Reports.

## NEW YORK NEUROLOGICAL SOCIETY.

*Stated Meeting, Held at the New York Academy of Medicine, February 4, 1913.*

THE PRESIDENT, DR. SMITH ELY JELLIFFE, IN THE CHAIR.

**Tumor of the Base of the Brain Immediately Behind the Pituitary Body.**—Dr. H. CLIMENKO reported this case. The patient was a girl, nine and a half years old, of Jewish parentage, born in the United States, who came under his observation on November 10, 1912. The family history was unimportant. Personal history: The patient was delivered instrumentally and was breast fed. Teething occurred in the seventh month, and she began to speak and walk when about a year old. She attended school until her present illness, and was of average intelligence. She had whooping cough at the age of four years and measles a year later. For the past twelve months the child had suffered from unusual thirst and occasional vomiting, although these symptoms were not of sufficient severity to interfere with her regular school work. The attending physician had not found anything abnormal in the urine. About six weeks ago she developed an alveolar abscess of the right lower molar; the abscess was incised, and a few days later the tooth was extracted. On the following day, ptosis of the right eyelid was noticed, and two days later a similar condition developed on the left side. She began to suffer from intense headaches and profuse vomiting. Examination by Dr. Climenko showed a pale emaciated child of normal size and good development. Her station and gait were negative. All the tendon reflexes were increased; no Babinski; no clonus. The abdominal reflexes could not be elicited. No sensory disturbances. Smell was unaffected. There was complete bitemporal hemianopsia, with pallor of the optic discs. There was complete ophthalmoplegia of the left eye, and the right eyeball was drawn outward. Both pupils were widely dilated and failed to react to light and accommodation; the other cranial nerves revealed no abnormalities. The heart, lungs and abdominal viscera were negative. With the above symptoms, the following possibilities as to diagnosis were thought of: (1) A toxic neuritis of the ocular and optic nerves. (2) An empyema of the body of the sphenoid. (3) An encephalitis of specific origin. (4) Tumor. The patient was admitted to the Mt. Sinai Hospital, where she was seen by Dr. I. Abrahamson. The blood and spinal fluid were examined with negative results as to the Wassermann test. An *x*-ray examination, made by Dr. L. Jaches showed a marked depression of the middle fossa of the skull, presenting a trough-like appearance, while the posterior clinoid process was pushed forward, narrowing the upper part of the sella turcica. With these findings, the diagnosis of a tumor of the base of the brain was established. This patient, Dr. Climenko said, was at present in the Neurological Hospital on Blackwell's Island. The headaches and vomiting had disappeared completely for the past few weeks, but the child was extremely emaciated and totally blind. No other symptoms had developed.

Dr. I. ABRAHAMSON said the case reported by Dr. Climenko was first looked upon as one of toxic ophthalmoplegia, with beginning atrophy of the discs. A little later, when the atropine had worn off, it was noted that the pupils remained widely dilated, did not contract to light, etc., and they then knew that they were dealing with a condition directly involving the nerves themselves. The *x*-ray cleared up the diagnosis, revealing a tumor behind the sella turcica.

**A Case for Diagnosis.**—Dr. CLIMENKO presented a married woman, 46 years old; born in Russia. The only point of interest obtainable in the family history was that the mother and two sisters were "very nervous." The patient's previous history was negative. She passed the menopause two years ago. When the patient was first seen by Dr. Climenko, six years ago, she gave the following history: Two years ago she was awakened one night with a peculiar sensation in the right upper extremity; she felt as though a shock of electricity had passed from her shoulder to her toes. This lasted only a few minutes, and after that she was unable to move the right upper extremity; it hung powerless by her side for a few minutes only, soon afterwards assuming its normal function, and on the following day she was able to work. Two months later she had a similar attack, but this was of longer duration. Since then these attacks became more frequent and lasted for a longer time. She consulted a physician, who advised hypodermic injections of strychnia, with massage and electricity. This treatment, the patient claimed, aggravated her condition, and subsequently she complained of weakness and inability to use the right arm. Physical examination revealed a hypertrophy of all the muscles of the right upper extremity. The reflexes were unchanged; there were no sensory disturbances; no change in the electrical reactions. There was diminution of the gross motor power in the arm, and inability to execute the finer movements (picking up a pin, threading a needle, etc.) with the right hand. No other symptoms were present. Six years later, when the patient again consulted Dr. Climenko, she complained of total disability of the right upper extremity, with paresthesias and tonic contractions in the flexors of the arm on attempting to flex the forearm. A physical examination at this time showed enormous hypertrophy of all the muscles of the right upper extremity, but particularly of the flexors of the forearm. The right upper extremity was one inch larger than the left. The electrical tests showed a normal nerve reaction, but a remarkable hyperexcitability to both galvanic and faradic currents, without any qualitative change. There were myotonic contractions of the biceps at each attempt to flex the forearm, either actively or passively. Direct myotonic irritability was increased, and fibrillary twitchings were present in the flexors of the forearm. There were no sensory disturbances. There was weakness of the entire right upper extremity, and inability to use the hand. There were no other nervous symptoms. The blood pressure was 150 mm. The heart and lungs were normal; the urine negative, as was also an *x*-ray examination of the spine and upper extremities.

Dr. ABRAHAMSON said the case shown by Dr. Climenko was unique. The enlargement of the right upper extremity had now persisted for six years, and the bones and muscles, skin and integument were involved, and in addition to this, there was a distinct myotonia. The speaker said the case appealed to him as an unusual type of syringomyelia, a syringomyelia myotonica cum macrosomia, with the involvement of two distinct cord areas, producing both a myotonia and a macrosomia. There was also a slight enlargement of the right face, the right side of the forehead being more prominent than the left. Frankl-Hochwart many years ago called attention to a syringomelia with intentional spasms; but here distinct myotonia was absent.

**Air in the Ventricles of the Brain Following a Fracture of the Skull.**—Dr. W. H. LUCKETT reported this case. The patient was a machinist, a white man, 47 years old, who was admitted to the Harlem Hospital on November 24, 1912, shortly after he had been struck by a trolley-car and thrown to the pavement. On admission, he was conscious and rational. The pupils reacted equally to light. There was a right sub-conjunctival hemorrhage. There was a lacerated wound over the right eyebrow, connecting with a circular fracture of the frontal bone just above the orbital ridge. The tongue was covered with a bloody fluid, probably cerebrospinal fluid. A diagnosis of fracture of the skull was made and confirmed by two *x*-ray plates by Dr. W. H. Stewart. The patient was prepared for immediate operation, but his symptoms cleared up so rapidly that it was decided to wait. On the fourth day he was sitting up in bed; on the seventh he was out of bed, and five days later he left the hospital contrary to advice and under protest. One week later, on December 12, 1912, he was readmitted with the history that two days previously he had a severe headache, with occasional vomiting. Up to that time he had been reading the papers daily, although he was dull and listless and would not converse with anyone, and took no notice of his surroundings. For the past few days he had not replied when spoken to, although he understood what was said to him. Two days after his readmission to the hospital the patient was examined by Dr. William M. Leszynsky. At this time the man was conscious; he answered questions and obeyed commands intelligently; cerebration was slow and he was inclined to lapse from time to time into a condition of mental confusion; there was no aphasia at this time; no disturbance of speech; no astereognosis; tremor of tongue and hands. The pupils were normal and reacted equally. Facial innervation and motility of the tongue were normal. No tenderness on percussion over skull. No rigidity of neck. Upper extremities normal; the lower extremities showed no paresis or rigidity, but were resistive to examination. Both knee jerks were increased, especially the right. Diagnosis, increased intracranial pressure; probably abscess. A blood count, made on December 13, showed 15,900 leucocytes, with 86 per cent. of polymorphonuclears and 8 per cent. of lymphocytes. An ophthalmoscopic examination, made on the same day by Dr. M. Cohen, showed that the external ocular muscles of both eyes were normal,

with a slight sub-conjunctival hemorrhage in the right temporal quadrant. In the right fundus, the veins were enlarged and tortuous, with the central vein markedly dilated over the disc and also at the exit from the nerve. The arteries were slightly contracted. The disc borders were indistinct, due to marked edema. In the left fundus the veins were also markedly dilated; the arteries were contracted, the disc borders were indistinct and there was a suspicion of retinal hemorrhage. Diagnosis, bilateral optic neuritis indicative of intracranial pressure. A second series of *x*-ray pictures taken by Dr. Stewart showed that the ventricles of the brain were enormously dilated with what was probably either air or gas, and the patient apparently getting worse, a right-sided subtemporal decompression was done by Dr. Luckett on December 16. Upon exposure, the dura did not bulge and was not particularly tense. No fluid escaped on incision of the dura and pia; a slight meningitis was noted. A needle was then passed into the anterior horn of the lateral ventricle, and the removal of the trocar was followed by two or three quick spits of air and fluid, and then clear cerebrospinal fluid to the amount of eight c.c. Because of the presence of a slight meningitis, the large quantity of fluid and the presence of air in the ventricles, it was determined to drain them. Accordingly, the patient was now turned over on his face, and a suboccipital operation was performed. The bone was exceedingly thin. The dura was incised, and then the pia into the cisterna magna, and immediately there escaped considerable clear fluid, generously admixed with bubbles of air. A small piece of twisted rubber tissue was inserted as a drain. The patient did well until the fourth day after the operation, when his temperature suddenly went up to 107 and he died. At the autopsy, which was performed by Dr. Otto H. Schultze, air was shown to be present in the ventricles when they were incised with the brain submerged in a vessel of water. There was a lacerated wound of the base of the right frontal lobe just beneath the right anterior horn and just over the fracture in the orbital plate that communicated with the frontal sinus. It was subsequently learned that air was probably forced up through the fracture in the frontal sinus into the ventricles during an attack of sneezing. In connection with the case, Dr. Luckett exhibited a number of radiographs demonstrating the presence of the air in the ventricles of the brain.

Dr. William M. Leszynsky, who had made an examination of the patient before the operation, said he had found it impossible to determine the cause of the intracranial pressure, although he was inclined to the view that the patient might be developing a cerebral abscess. This idea was dispelled, however, by the *x*-ray plates, which showed a very unique picture; unlike anything, so far as he knew, that had ever been recorded.

**Some Anomalous Tremors.**—Dr. Smith Ely Jelliffe showed two cases to illustrate some anomalous types of tremors. They were patients from Dr. Hammond's and his own service at the Post-Graduate Hospital. The first patient was a woman, twenty-nine years old, with a tremor of the left hand which was continuous during the day, disappearing during sleep. The tremor had come on gradually about seven months previously. Its rate was from 5-6 to the second, and had little intention quality. There was also a slight inequality in the pupils, but no modification of the reflexes. Negative Wassermann and negative throughout otherwise. The eye grounds were normal. The second patient, a woman, thirty-four years old, had a tremor which began fourteen years previously in a manner very similar to that illustrated in the first case. It began in one hand and gradually became generalized, until now it involved almost the entire body. There was marked stiffness and a tendency to retropulsion at times. There were no palsies nor sensory changes, excepting that the sole of the left foot showed a slight diminution to light touch. All the reflexes were fairly active; there was no distinct Babinski. The eyes showed a slight inequality of the pupils, which was also present in the first case, and a very distinct pallor of the temporal side of both discs. The fields were normal; there was no nystagmus. There were no speech defects. The patient was a sensible, intelligent young woman, and careful analysis by Dr. Beatrice Hinkle failed to show any complex constellations. She had gradually lost weight, but there was no appreciable diminution in muscular power.

Dr. B. Sachs said he regarded the first case as one of paralysis agitans and the second as one of multiple sclerosis. The first case he thought was absolutely typical of paralysis agitans: There was no other type of tremor that it could be mistaken for, and the only one that could be at all compared to it was an occasional functional tremor. The speaker said he recalled one such case where the husband had paralysis agitans and the wife developed a very similar functional tremor. In the case shown by Dr. Jelliffe the woman had the facies of paralysis agitans, and had no symptoms which would lead one to think of any other diagnosis. As to her age, twenty-nine years, that would not necessarily militate against the diagnosis, as paralysis agitans may have its onset in early life. The speaker said that in his book he had recorded a case of paralysis agitans in a young man coming on about the age of eighteen or twenty; in that case the patient eventually developed all the symptoms of a disseminated sclerosis, although at their onset they were quite characteristic of paralysis agitans.

As to the second case, Dr. Sachs said he thought there was no doubt that it was an example of multiple sclerosis. The woman had a tremor which became worse on exertion, and she had just a slight tremor—an unconscious tremor we might call it—of the head and neck muscles, which we did not see in paralysis agitans. This was very significant of multiple sclerosis. She had also had a pallor of the optic discs and some monotony of speech.

Dr. Abrahamson, speaking of Dr. Jelliffe's second case, said it reminded him of a girl who was a patient at the Montefiore Home, excepting that that patient was somewhat spastic. He thought, however, it belonged to the same category. In these cases we probably had to deal with a diffuse lesion in the mid-brain in the nucleus rubra and the crus, and very likely with involvement of the rubrospinal system.

Dr. J. Ramsay Hunt said that in the first case shown by Dr. Jelliffe, on passive motion, there could be elicited a slight interrupted rigidity of the muscles. This was a phenomenon to which Dr. Moyer had applied the name of the "cogwheel" symptom of paralysis agitans, and in early cases the speaker thought it was of distinct value—these slight interruptions on making passive movements. As to the second case, Dr. Hunt thought a positive diagnosis could not be made. That offered by Dr. Sachs would be a probable working one; at the same time the speaker said he was inclined to regard it as a case of progressive degeneration; perhaps, as Dr. Abrahamson had suggested, in the pyramidal tracts.

Dr. Leszynsky said the unusual factor in the first case shown by Dr. Jelliffe was the age of the patient. The character of the tremor was not at all unusual, as the speaker said he could recall perhaps half a dozen cases where it was unilateral, being confined to one hand for many months. When the patient's attention was directed to the opposite hand, the tremor on the affected side increased, which was quite characteristic in paralysis agitans. As to the second case, Dr. Leszynsky said he did not think much stress could be laid upon the pallor of the discs, as ophthalmologists frequently differed in their view of its significance—whether it was pathological or physiological. In this case there was apparently no disturbance of the field of vision. Personally, he would favor the diagnosis of paralysis agitans.

Dr. Edward D. Fisher said he had seen a case very similar to the first one shown by Dr. Jelliffe, where there was evidently a lesion in the crural tract, but in the case he had in mind the tremor was constant and increased on motion. As to the second case, Dr. Fisher said he would be inclined to look upon it as a paralysis agitans rather than a multiple sclerosis.

Dr. B. Onuf suggested that in the second case there might be a diffuse brain sclerosis instead of a multiple sclerosis.

Dr. M. Neustaedter said that about two years ago he reported the case of a man twenty-eight years old who after a shipwreck developed a tremor of one hand, the nature of which was at first uncertain. It was finally shown to be a case of paralysis agitans, as proven by the tremograph.

Dr. L. Pierce Clark said the two cases shown by Dr. Jelliffe impressed him very much as they had Dr. Sachs and for the same reason. He was surprised to hear from the discussion that paralysis agitans should be looked upon as such an entity, and he thought it was rather premature to insist upon an anatomical basis for that disease. In the first case, the tests showed that there was a distinct alteration of the vibrations to the intention type of tremor. He thought this was a case of paralysis agitans, while the second was one of disseminated sclerosis. The speaker said he saw a case of paralysis agitans at the Vanderbilt Clinic in a man twenty-nine years old, although these patients look older on account of the mask-like expression of the face.

Dr. Sachs said he had never seen a rapid tremor that he could account for by any midbrain lesion.

Dr. JELLIFFE, in closing, said these two cases were shown for the express purpose of bringing out such a discussion as had been elicited. He felt that one was justified in inferring that both cases were of a similar type, and that the first case represented the beginning stage of what might ultimately develop into the condition of the second case. He was inclined to believe that in both cases the process was one of multiple sclerosis, but one which was localized at first and primarily in the midbrain structures. Here we had midbrain, or paralysis agitans, types of multiple sclerosis, the multiple sclerotic area involving those pathways which in the more recent works on this subject were referred to as being involved in paralysis agitans. As to the character of the tremor, Dr. Jelliffe said at least three different types of tremor originating in the midbrain structure, depending on the point of interruption of the mechanism, were to be distinguished. These were the athetoid, the paralysis agitans like, and the intentional tremor. From the more recent studies of this subject we were able to say in just what portion of the arc the mechanism was interrupted. In both of the cases he had shown, Dr. Jelliffe said, the tremor was like that of paralysis agitans. The presence of vasomotor signs indicated possibly the implication of the thalamus, while the eye signs pointed to lesions located near the red nucleus.

**Address of the Retiring President.**—Dr. L. PIERCE CLARK, in retiring from the presidency, briefly sketched the work of the society during the past two years and emphasized the importance of giving more attention in the future to the beginning neuroses and psychoneuroses, the milder forms of the frankly established insanities, and more especially to the causation and treatment of such. He felt sure that if this plan was more generally followed, the discussions of the papers would take on a broader and deeper trend. He also suggested that the case presentations be made more thorough, and that some provision be made, if possible, for those members who were interested to look over the clinical material before the general discussion was called for in open meeting.

**A Summary of the Origins, Transformations, and Present-Day Trends of the Paranoia Concept.**—Dr. SMITH ELY JELLIFFE made this the subject of his Presidential Address (see page 599).

## NEW YORK ACADEMY OF MEDICINE.

### SECTION ON OBSTETRICS AND GYNECOLOGY.

*Stated Meeting, Held January 23, 1913.*

DR. GEORGE GRAY WARD, JR., IN THE CHAIR.

**Operation for Marked Descensus of the Uterus by the Dührssen-Bandler Method.**—Dr. SAMUEL WYLLIS BANDLER presented this patient. She was 47 years of age and had descensus of the uterus associated with a very large cystocele, a decided enterocele, and rectocle with complete absence of any perineal body. This patient was operated on before the Surgical Congress by the Dührssen-Bandler method. A vaginal fixation of the fundus of the uterus to the anterior wall was done with the aid of an inverted "T"-shaped incision. There was also a high amputation of the cervix and a sewing of the posterior fornix and the pelvic connective tissue around the new external os in such a way as to diminish the diameter of the anterior and posterior fornix. In consequence of this a considerable area of the anterior vaginal flaps was removed. Next a resection of the entire posterior vaginal wall in its entire length was done and this was followed by the Bandler form of perineorrhaphy, which included three buried chromic sutures to unite the levator ani muscles of the two sides in front of the rectocele, and anchoring of the posterior vaginal wall at this point. The perineorrhaphy was completed by a figure of eight stitch which served to bring the raw surfaces together at the middle line.

The Chair then appointed a committee to examine the patient and to report back to the Section on their findings.

Dr. BOLDT said that so far as the results were concerned they were perfectly satisfactory. This patient had come to his clinic and he had turned her over to Dr. Bandler. She had an exceptionally large cystocele; the entire wall with part of the bladder protruded out of the vulva, the mass being as large as a small orange. The cystocele operation had given an absolutely perfect result, but he did not consider that the patient had a prolapse of the uterus when he examined her. It was only a moderate descensus.

Dr. THOMAS TYLER SWEENY said that the operation performed by Dr. Bandler seemed to have removed the cystocele, but the fundus of the uterus rose higher in the abdomen than it did after the Dührssen operation. The vagina seemed to him to be a little shortened.

Dr. FREDERICK C. HOLDEN said that his findings agreed with those of Dr. Boldt and Dr. Sweeny. There was a firm pelvic floor and the cervix was well back in the hollow of the sacrum.

**Case of Ectopic Gestation with Slight Hematocele Operated Upon Before the Surgical Congress.**—Dr. BANDLER reported this case. The history of the case and the diagnosis was tuboovarian inflammation. When examined under anesthesia the mass seemed to be harder, and as the fingers were applied over the abdomen and pressed down they passed between this mass and the uterus, and the separation of little tiny bands yielding to the pressure was distinctly felt. This was decidedly in favor of an ectopic mass. A possible diagnosis of dermoid was made and the operation was done vaginally There was little free blood and not many clots in the peritoneal cavity, yet the typical bluish shimmer was present as soon as the vesicouterine fold of peritoneum was reached. Even then ectopic gestation was referrd to in a rather doubtful way. On entering the peritoneal cavity a few black clots were seen. The tube was grasped by a sponge holder and drawn into the vagina, the outer end with its enlarged ovary, forming a continuous mass, impinged against the anterior speculum and it was impossible to bring the large tumor into view. The appearance of the mass, therefore, showed it to be a tube filled with hard clotted blood. The dressing forceps perforated the outer end of the tube to permit some of the coagulated contents to be expelled and thus diminished the size of the mass. Clamps were applied to the edges of this perforation and gradually the large ectopic mass was brought into the vagina, where it was easily removed.

**Ectopic Gestation with Large Hematocele.**—Dr. BANDLER reported these two cases. The first patient was 22 years of age and had given birth to one child three and one-half years ago. Menstruation was expected on November 18. Two days before this time she was seized with sharp cramps in the lower abdomen which lasted a day and were followed by bleeding. At the time of her admission to the hospital, three weeks later, she gave a typical history of ectopic gestation. Examination showed the cervix hard, large, and fairly movable; the uterus was enlarged and movable, and there was tenderness in the right iliac region Examination under the anesthetic before operation gave the sensation of a large hematocele surrounding a firm tube. When the peritoneum was exposed there was a typical blue shimmer which Dr. Bandler said he had observed in every case of ectopic gestation operated upon through the vagina. After the introduction of the anterior speculum the tube was grasped near the right uterine horn by a pair of ovarian forceps, and, by a succession of these and by manipulation of the fingers of the right hand, the tube, which was no larger than the thumb, was brought into the field, and three chromic catgut sutures were firmly applied about the ligamentum infundibulo pelvicum. The tube was ligated along the mesosalpinx, but the ovary was not disturbed. The hemtocele was as large as a child's head and a posterior vaginal incision was made on completion of the operation for drainage.

The second case was also a young woman, 22 years of age, who had had one child three years previous to her admission to the hospital. Two and one-half years before she had begun to complain of cramp-like attacks in the right iliac region occurring once in three or four months and lasting for two or three hours. These attacks had become more frequent and severe during the past year. The last menstruation had occurred a little more than four weeks before admission. Colostrum was present in the breasts, but no masses were felt in the abdomen. The cervix was small and soft and the uterus of the fundus was indistinctly felt forward. A definite diagnosis was made under anesthesia and she was operated upon December 10. In this case the plica showed the typical blue shimmer which was such an important diagnostic feature in ectopic gestation. Incision of the plica verified the diagnosis as dark clots and dark fluid poured out. As much of this as possible was removed with sponges. The uterus was turned so that the right horn was in the median line, and the fingers of the right hand enucleated the enlarged tube from the hematocele. The tube was brought into view by the application of clamps to the uterine end of the tube and to the ovarian ligament, after which a clamp was applied to the ligamentum infundibulo pelvicum. Then three ligatures were applied about the ligament. The tube was removed but the ovary was left behind.

Dr. Hiram Vineberg said that he thought this question had been threshed out long ago, and in Germany it was concluded that the best way to treat these cases of ectopic gestation was through an abdominal incision. They were dealing with a friable ligament and tube and one that was easily ruptured. The broad ligament would not stand for a great deal of of manipulation, and even in working through the abdominal route one should be very careful in tying off the ectopic tube and not to injure the broad ligament. A slight tear had been often overlooked and the patient bled to death from oozing from this tear in the broad ligament. In the majority of instances it was unnecessary to sacrifice the ovary, and surely it was more easy to save the ovary when the tube had to be removed when operating through the abdominal route. The vaginal route was of service when the patient was very stout, the symptoms not very definite and the local findings negative. But here all that was necessary was to make a small transverse incision posteriorly, in the fold, revealed by pushing the cervix toward the sacrum and in less than a minute one could ascertain whether there was free bleeding in the peritoneal cavity.

Dr. Herman J. Boldt said that there were some cases of extrauterine pregnancy in which it seemed desirable to do the vaginal operation, particularly in that class of cases in which one was uncertain of the diagnosis. It was an easy matter to make a vaginal opening for diagnostic purposes, but what was the use when the patients were in bed as long and there was more risk of secondary infection? Dr. Boldt thought the ground was well taken that the abdominal operation was to be preferred in most cases of ectopic gestation.

Dr. Bandler said he had always been conservative in the use of the term "total prolapse," reserving that phrase for cases extending several inches beyond the vulva. The expression "descensus of marked degree" meant that the cervix was visible beyond the vulva, but on pressure extended well beyond it. This was a case of marked descensus and was not the case that Dr. Boldt had in mind. In answer to Dr. Vineberg, Dr. Bandler said that there were very good reasons why the anterior route should be preferred to the posterior. When there was a large mass in the cul-de-sac they simply had to puncture it with a long pair of scissors, and the clotted blood flowed out into view if one was dealing with a hematocele. But in other cases where they were dealing principally with the products of conception still in the tube, or with very early cases, the posterior incision was of no value, because it bled rather freely, and when the peritoneal cavity was entered it was difficult to tell whether fresh blood was coming out from within the peritoneal cavity or from the edges of the incision. Again one could not look into the peritoneal cavity in order to ascertain what conditions existed there. None of these objections held good by the anterior path. There they made a simple transverse incision unusually combined with a longitudinal vaginal incision in the anterior fornix. The bladder was readily separated and in the several hundred cases which the speaker had done in this way he had never injured the bladder. When an anterior speculum was introduced the bladder was lifted up and the vesicouterine plica was beautifully exposed to view, and if blood was there the typical blue shimmer was seen and one needed to go no further, since the diagnosis had been made. The incisions were then closed and the operation was proceeded with by the abdominal route. If one was not sure of the diagnosis, or wished to go further, the peritoneum was picked up by forceps and was transversely incised and an anterior speculum was introduced into the peritoneal cavity and one could then see with the eye the intestine, omentum, both tubes, and both ovaries. One could introduce the finger and palpate them. Dr. Bandler did not advise the vaginal route for all cases, but he operated upon more than twice as many cases by that route than he did by the abdominal route. In early cases, or those in which the diagnosis was not clear, or where there was no active bleeding going on and where the vagina was roomy, this method was of extreme value either for diagnosis or for operation.

**Vaginal Hysterectomy, Hemisection of the Uterus, and the Author's Method of Preventing Cystocele.**—Dr. Bandler reported this case. The patient was 38 years of age and was operated upon for fibrosis uteri. After the peritoneum had been entered anteriorly by the "T"-shaped incision and after the posterior fornix had been transversely incised to enter the cul-de-sac of Douglas, the lateral walls of the cervix were exposed by pushing the vaginal mucosa upward, and two chromic ligatures were passed with the ligature carrier, one on either side, including the lower part of the broad ligament and the uterine arteries. The scissors cut between these two ligatures and the cervix until the uterine arteries were exposed, when each was tied off separately. Then the fundus of the uterus was delivered and the broad ligament was ligated from above downward by three chromic ligatures applied median to the ovary. No attention was paid to the tube and ovary unless they were diseased. The scissors then cut away the fundus from the broad ligaments down to the previously cut uterine arteries. The ligatures which thus embraced the entire broad ligament were then drawn out, so that the broad ligament stumps were in the vagina. Gauze was packed between them to keep the intestines and omentum out of the way and an anterior retractor kept the bladder out of the way. A heavy chromic suture was passed which united the vaginal flap of either side, the vaginal mucosa which had been removed from the lateral wall of the cervix and part of the vaginal mucosa of the posterior fornix, to the entire broad ligament of that side, the suture passing through the ligamentum ovarii or the upper part of the broad ligament, the peritoneum of the posterior wall of the broad ligament and the peritoneum of the cul-de-sac of Douglas. When this was tied on either side, each broad ligament was completely enveloped by vaginal mucosa, and the opening between the two sides had been narrowed. This opening was further narrowed by interrupted sutures applied along the posterior margin of the incision, and then the peritoneal cavity was packed with gauze, the removal of which was begun on the fifth or sixth day after the operation and completed by the tenth or twelfth day. The vagina was likewise packed with gauze. For two days there was considerable serosanguinous oozing.

**Vaginal Hysterectomy, Including Left Salpingo-Oophorectomy for Tuboovarian Abscess; Bisection of the Uterus; Clamp Method.**—Dr. Bandler reported this case. The patient was 44 years of age and had had four children, the last about twelve years ago. About ten years ago she had had an abortion. During the last six months she had had marked menorrhagia and during the last three months menorrhagia and metrorrhagia, with weakness, pain in the pelvis, and loss of weight. The uterus was larger than normal. With the use of the "T"-shaped incision the uterus was found adherent to the posterior pelvic wall and was pretty well surrounded by adhesions over the fundus. These were separated by the fingers and blunt dissection. A fibroid somewhat larger than a walnut was found in the anterior wall of the uterus. The uterus was divided in the median line, the right half being pushed into the peritoneal cavity, and the first two fingers of the left hand were used to separate from adhesions and to enucleate the left adnexa, consisting of a large tuboovarian mass surrounded by many adhesions. The mass was punctured to allow some of the contents to escape. On the right side only the uterus was removed, there being no marked changes in the adnexa. Clamps were applied on the left side to include the tuboovarian mass. The patient was operated upon November 26; the clamps were removed November 28 and the last gauze was removed December 12.

**Vaginal Hysterectomy, with Amputation of the Uterus at the Internal Os; Clamp Method.**—Dr. Bandler reported this case. The patient had had metrorrhagia which persisted for several years and which was due to several fibroids situated in the fundus of the uterus. With the aid of the "T"-shaped incision the bladder was separated from its contact with the cervix and uterus and from its relation with the anterior vaginal wall. By a posterior vaginal incision the cul-de-sac of Douglas was entered and two clamps were applied to unite the peritoneum with the edge of the vaginal incision. An anterior speculum was then introduced and the vesicouterine plica was widely incised. The anterior retractor was introduced into the peritoneal cavity and with the aid of successively applied volsella the uterus was brought into the vagina. Two broad ligament clamps were applied on the left side, and with the aid of scissors the uterus was separated almost to the level of the internal os. This area, owing to the angulation of the cervix produced by the first clamps that were applied from below, was a little removed from a clear view, and, in addition, a small fibroid was present at this point, so that a transverse incision was made at the level of the internal os, completely separating or amputating the fundus from the cervix. The right side was then clamped and separated down to this transverse cut, leaving the cervix still in the grasp of the two clamps first applied. The cervix was then removed. A few interrupted sutures diminished the size of the vaginal opening anteriorly and

posteriorly. A chromic catgut suture fastened each flap to the upper border of the broad ligament of its corresponding side. The clamps were removed at the end of forty-eight hours and the vaginal gauze in five days. The patient made a very safe recovery.

**Vaginal Hysterectomy, Morcellement, and Clamp Method; Bisection of the Uterus.**—Dr. BANDLER reported this case. The patient, a woman 55 years of age, had been under his care for three years for pronounced menorrhagia associated with pain on the right side. She was extremely obese, so that the contour of the uterus could not be made out. Bimanual examination showed on the right side, on a level with the cervical internal os, an intraligamentous fibroid the size of a tangerine. There was also another fibroid nearly as large just above the cul-de-sac of Douglas, another one anteriorly, and one or two others higher up. The patient had a rectocele and the vault of the vagina was not very wide, nor could the cervix be drawn far down. The vaginal operation was decided upon. The fibroid lying between the uterus and rectum made it impossible to enter the peritoneal cavity at the cul-de-sac of Douglas. This fibroid and the firmness of the ligamenta cardinalia, together with the intraligamentous fibroid of the right side, made it impossible to bring the uterus down. The cervix was then grasped by two Jacobson forceps on either side and split in two anteriorly and posteriorly up to the respective fibroids. The bladder was held out of the way and the splitting was continued anteriorly, the inner border of the two halves of the cervix being likewise grasped by Jacobson forceps. After enucleating the anterior fibroid the splitting of the posterior wall of the cervix was continued and a volsellum grasped the fibroid in the cul-de-sac. This was enucleated and then the anterior wall was attached. the splitting being continued up a little further. The two halves of the uterus were grasped and successive fibroids were enucleated. The intraligamentous fibroid on the right side was so close to the situation of the ureter and the uterine vessels that it was with difficulty enucleated by the finger and a blunt ended pair of scissors, the fibroid having been grasped by the volsellum. Every step of the enucleation had practically been accomplished with the aid of the eye. Then, by morcellement, the lateral walls of the uterus were resected, so that gradually the fundus came into view and more fibroids were enucleated. The splitting was continued over the posterior wall until the cutting ended in the longitudinal slit that had showing that the posterior fibroid had been retro- been made in the posterior wall of the cervix. The peritoneum of the cul-de-sac of Douglas was still intact, through which the intraligamentous fibroid had been removed, had attached to it several clamps which had been applied while the morcellement of the uterus was taking place. These were left *in situ*. The same condition was encountered on the left side. As much as possible of the uterine tissue along the lateral border was trimmed away. The opening in the peritoneum was packed with three strips of iodoform gauze and also the vagina. At the end of thirty-six hours the clamps were removed. The patient made a smooth recovery, with only slight symptoms of peritoneal irritation. One of the most annoying factors in the course of the operation was the very extensive rectocele which persisted in obtruding itself into the field of operation. The use of the clamps precluded the possibility of doing a perineoorrhaphy at the same time.

**Hydronephrosis, Containing Twelve Quarts, Removed Through an Anterior Incision: Recovery.**—Dr. JOHN VAN DOREN YOUNG reported this case, which was of unusual interest because of the size of the tumor. The patient had been suffering for fifteen years, although during this time she had continued at her work, that of a weaver. Her first symptoms, pain and severe gastrointestinal symptoms, were diagnosed as appendicitis. The tumor reached its present size five years ago. Recently the patient had suffered from disability due to the weight of the tumor. From the size and shape of the tumor mass, which entirely filled the abdomen, a diagnosis of large ovarian cyst was made. There were no symptoms referable to the kidney or bladder. At the operation, which was performed December 3, 1912, the entire intestinal tract was found displaced to the left. The uterus and adnexa were normal. Ten quarts of translucent amber fluid were withdrawn by means of a trocar. An incision was made in the posterior perineum and through the wall of the sac. The hand introduced into this cavity confirmed the diagnosis that the cyst was a hydronephrosis of the right kidney. The ureter and renal vessels were located and ligated, and the entire sac removed. It was estimated that two quarts more of fluid escaped during this process, making the estimated contents twelve quarts. The resultant cavity was drained through the lumbar region. The patient made an uneventful recovery. The diagnosis was confirmed by pathological examination.

**Depressed Fracture of the Acetabulum; Recovery; Presentation of Radiography.**—Dr. YOUNG reported this case. The fracture was occasioned by an automobile accident. An automobile weighing twenty-three hundred pounds fell on the patient, driving the acetabulum with the head of the femur inward three and one-half centimeters and upward two and one-half centimeters into the pelvic cavity. The patient had recovered and was now entirely well, having only a slight limp and no limitation of motion. Stereoscopic radiographs made by Dr. Lewald showed the bony displacement most clearly. The unusual feature of the case was that the joint was apparently uninjured, the deformity consisting of a breaking away of the ascetabulum and a displacement of the entire joint.

**Radiographs of a Sigmoid Loop, Causing Intermittent Symptoms.**—Dr. JOHN VAN DOREN YOUNG reported this case. The patient had suffered during her entire life from intestinal stasis, at times very severe. Her appendix had been removed. The gynecological examination was negative. The radiographs showed slight gastroptosis with moderate gastric retention. The transverse colon was slightly below the umbilicus. The radiograph taken after injection of the lower bowel with bismuth solution showed a complete sigmoid loop, unquestionably congenital in origin, extending above the umbilicus in front of and above the transverse colon. Dr. Young also exhibited a radiograph of a similar condition in an infant. He believed that the intestinal statis was due to this loop.

**Gastroptosis: Improvement After Medical Treatment. Should It Be Continued or Was Operation Indicated?**—Dr. YOUNG reported this case. The patient had had her appendix removed for persistent gastrointestinal symptoms without relief. She had been on diet exclusively of zoolak and raw eggs for eight months. Four months ago an ovarian cyst was removed, which from its location and size had pressed upon the rectum. After the operation the patient had been kept in the Trendelenburg posture for about three weeks. There had been no gain in wight until after the operation. The patient weighed 93½ pounds November 16, and January 11 98 pounds. There had been a marked improvement in her general condition and vitality. The treatment had consisted in diet, massage, the wearing of a belt, and assuming an exaggerated Trendelenburg and the Goldthwaite positions daily.

**Double Ovarian Papilloma.**—Dr. YOUNG reported this case. The patient was 45 years of age. She had been losing weight for two years, the total loss being 29 pounds. She had suffered for the same length of time from an irritable bladder, and from abdominal pains for the past six months. An operation was performed July 17, 1912. The specimens removed showed multiple cystic ovaries on both sides, with a papillomatous growth, the cysts with the papilloma making a mass in each specimen of four and one-half inches in diameter. The clinical diagnosis was confirmed by section which was also shown. The patient had made an uneventful recovery from the operation and was at present in good health.

Dr. HIRAM N. VINEBERG asked Dr. Young if the cyst was lobulated. On account of the enormous size of the cyst it had occurred to him that it might have been a cystic degeneration of the kidney, that variety known as polycystic degeneration, which usually affected both kidneys. Dr. Vineberg related a case of this nature which had come under his care in which, after removing a huge polycyst of the right kidney, it was found that the remaining kidney also presented polycystic degeneration, but the mass was only half the size of the one removed. The patient died about twelve days after the operation. In examining the removed specimen it was difficult to see how it could have contributed to the elimination of urea products, and yet it must have done so, judging from subsequent events.

Dr. HERMAN GRAD also reported a case of hydronephrosis in which, after removing a cyst of the right kidney, it was found that the left kidney had entirely contracted and that all the secretion of urine must have come from the diseased kidney. This patient died a few hours after the operation of uremia.

Dr. JOHN VAN DOREN YOUNG said that the case which he had reported was one of true hydronephrosis and not a case in which there were separate cysts.

**Ectopic Gestation with Unusual Features.**—Dr. HERMAN BOLDT reported this case. The patient was 33 years of age. She was seen in consultation for the purpose of

finding out whether or not she was pregnant. She had always menstruated regularly, but during the period she suffered from pain in the left iliac fossa. She had menstruated last on September 20. Since November 1 she had had slight spotting which bore no resemblance to blood. When seen on December 5, the uterus was slightly enlarged and softer than normal. There was no colostrum in the breasts. A diagnosis of pregnancy was made. When Dr. Boldt again saw the patient on December 30, she gave a history of having had a severe attack of pain and fainting ten days before. At no time was there any loss of blood. The history was clearly that of ectopic gestation and this was verified by the presence of a pelvic hematocele. She was removed to the Post-Graduate Hospital and on January 1 again complained of pain. The operation was done *per vaginam,* through the posterior cul-de-sac. After the evacuation of a moderate quantity of blood the introduced hand came into contact with the placenta on the left side; it was loosely adherent to intestines. Following the cord, a three months fetus was found behind the right broad ligament. The Fallopian tube was drawn upward with its fimbriæ loosely attached to the bowels. This accounted for the negative palpation findings at the first examination. The ampulla was somewhat dilated, but otherwise nothing abnormal was found which would induce one to remove the tube. Gauze drainage was used and the patient made an uneventful recovery. The woman had probably conceived during the latter part of September, but no subjective symptoms presented themselves until December 19; likewise, because of the dislocation of the tube, no objective symptom, except the moderate uterine change, was perceptible on December 5, although the woman was already about nine weeks pregnant. Dr. Boldt did not think that vaginal section was the method of choice in such cases, except under favorable circumstances, but the outcome was satisfactory in this instance.

**Myomatous Uterus, Complicated with Suppurating Ovarian Cyst on the Right Side, Tuboovarian Abscess on the Left, and Chronic Pelvic Peritonitis; Organic Heart Lesions.**—Dr. Herman J. Boldt reported this case. The patient, who was forty-five years of age, had been bleeding profusely for two months, but had declined examination. The lower part of the abdomen was filled by a tumor which was evidently adherent to all parts of the pelvis. It was clear from examination that a myofibromatous uterus was present, and that it was probably submucous was surmised from the profuseness of the flow. The error of diagnosis consisted in not recognizing the other pelvic complications. If they had been correctly diagnosed, the proper procedure would have been to first make a vaginal section and to empty the suppurating vaginal cyst *per vaginam* and also the large tuboovarian abscess on the left side. Spinal analgesia was resorted to because of the heart complications, but not being satisfactory nitrous oxide and oxygen were employed. It was still too soon to report the termination, but the patient was doing well despite the extensive peritoneal infection with pus.

**Submucous Myoma; Extreme Rigidity of the Pelvic Floor; Supravaginal Extirpation of the Uterus.**—Dr. Herman J. Boldt reported this case. The diagnosis of a submucous growth was verified at operation. The interesting feature was the unusual rigidity of the pelvic floor which together with the obesity of the patient made it inadvisable to do a pan-hysterectomy as had been intended.

**Cervical Myoma, in Anterior Wall of Cervix; Ovarian Cyst with Twisted Pedicle.**—Dr. Herman J. Boldt reported this case, which occurred in a patient forty-four years of age who had suffered an attack of severe pain a week before consulting Dr. Boldt. The pain continued for an hour and then there followed a period of relief of two hours, after which the pain again began and lasted three hours. This was followed by chills, and more or less pain had been present since that time. Menstruation had been regular, but very profuse. An examination of the abdomen disclosed a cystic tumor about eight inches in diameter which was not sensitive and could be moved by the palpating hands into different parts of the abdomen. In the lower abdomen a tumor was found which was readily diagnosed as a modified myofibromatous uterus. The cystic tumor was diagnosed as a cyst of the right ovary with a twisted pedicle, but the twisting not of such a degree as to cut off the circulation entirely from the tumor because it was non-adherent and there was no evidence of peritonitis. On operation the diagnosis so far as the ovarian tumor was concerned was correct. The myoma proved to be of the cervical variety, and was situated in the anterior wall of the cervix. The interesting feature, considering the location and size of the tumor, was that there were no bladder symptoms, while usually very small tumors caused vesical irritation if in this location. On the fifth day coils of intestine were protruding, and when the bandage was removed it was found that there had been no attempt at union of the abdominal walls, but that there was not the slightest evidence of infection. The wound was resutured and an uneventful recovery followed.

Dr. George Gray Ward, Jr., said that he had had two experiences in which there was complete failure of union of the abdominal wound and in the second of these this was to be expected as the patient was in the last stages of nephritis and her general condition was very poor. This patient had carcinoma of the uterus and an operation was the choice of the family. The abdominal wound opened on the sixth or seventh day after the operation. It was immediately resutured and the patient made a complete recovery and survived for six months, when she died of apoplexy.

Dr. Hiram Vineberg also recalled a case in which there was failure of union after an abdominal operation for carcinoma of the uterus. In this instance there was no sign of healing at the end of two weeks.

**Vaginal Shortening of the Uterosacral ligaments in Procidentia Uteri, with a Report of Ten Cases.**—Dr. Herman Grad presented this communication. After outlining the anatomy of the uterine supports, calling special attention to the importance of the pelvic fascia, and showing how they were affected in procidentia, he described an operation on the uterosacral ligaments, which was applicable in many cases of prolapsus uteri. This operation had been described by Dr. Henry Jellett of Dublin in a paper published in *Surgery, Gynecology, and Obstetrics,* August, 1911. In this paper Dr. Jellett said: "In general terms, the operation consists in exposing the uterosacral ligaments at their insertion into the uterus, in cutting them off the uterus, and in bringing them around in front and below the cervix, and at the same time shortening them as may be found necessary, so that they become again a support to that part of the uterus." Vaginal shortening of the uterosacral ligaments was an operation that claimed for itself a definite anatomical basis. Although the operation disturbed the normal anatomical relations, because it brought the ligaments in front of the cervix, it nevertheless accomplished just the condition that it was desirable to bring about in prolapse of the uterus Contrary to the views of the older anatomists, the uterosacral ligaments were not purely peritoneal folds, but had firm fibrous tissues as their structural integrity. These ligaments were capable of maintaining considerable pressure and weight. They were really part of the fascial structure, which was flattened out and included within itself all the muscular structure that made up the so-called pelvic diaphragm. Picturing the fascial sheet which extended from the bony structure of the pelvis and completely encircled the uterine surface, it would be readily seen that if this fascial sheet having become overstretched or torn in places was shortened by some operative procedure, it would of necessity raise those organs to which it was attached to a higher level. This was exactly what was being done by the so-called shortening of the uterosacral ligaments. These ligaments were not alone shortened, but the entire pelvic fascia as well. It was evident from the conflicting views regarding the structure of the uterosacral ligaments that histological studies were wanting on the ligaments of the uterine supports. If muscular fibers were present in the uterosacral ligaments they had escaped recognition on the part of the writer of the paper. Reasoning from analogy, he could not see why the uterosacral ligaments should contain muscular fibers. The surgical treatment of prolapse of the uterus had changed considerably during recent years and the operations that were performed to-day for the cure of this condition could be divided into two classes: 1. Those having in view the formation of adhesions of the uterus to other parts in such a way as to hold the organs in the pelvis, and prevent a prolapse out of the vagina. 2. Those operations which shortened the uterine supports and in that way kept the organ from prolapse. Both types found application in prolapse of the uterus. The multiplicity of operations that had been recommended for this condition simply attested the fact that there was no single operation applicable in every case. So far as the surgical aspect of procidentia uteri was concerned, these cases might also be divided into two classes: (1) Those that were past the menopause, and (2) those that were still in the menstrual period. For the cases that were past climacteric and had small uteri the so-called interposition operation was suitable. When

the uterus was enlarged this procedure was not applicable. In these cases a hysterectomy was called for and the broad ligaments were made to serve the purpose of a shelf upon which the bladder was made to rest and to which the vaginal tissues could be attached. In patients still menstruating, or in the child-bearing period, the operation of shortening the uterosacral ligaments was very applicable. The operation was performed as follows: A circular incision was made around the cervix which was met by a vertical one in the median line on the anterior wall of the vagina. The bladder was stripped up freely. The operator might shorten the round ligaments at the same time by entering the peritoneal cavity in front of the uterus. The round ligaments were seized and shortened, after which the peritoneum was closed in an appropriate manner, either anteriorly or not. The bladder having been stripped up the anterior wall, the latter was hemmed to the desired extent in order to repair the cystocele that had existed. Before the final closure of the incision in the anterior wall of the vagina search should be made for the so-called pelvic fascia. This fascia was stitched with a few chromic gut sutures, making a shelf for the bladder to rest upon. A search was now made for the uterosacral ligaments which could be readily found in the majority of cases by grasping the loose tissue behind the cervix. This tissue was severed from the cervix and by a little dissection the uterosacral ligaments were identified. Should this procedure for the ligaments by palpation. When found they could be loosened sufficiently to reach around the uterus and be stitched to the cervix in front. The uterosacral ligaments not result in finding the uterosacral ligaments, the peritoneum might be opened posteriorly and a search made ments having been prepared, the cervix was amputated, the degree of amputation depending upon the length of the cervix. The effect of attaching the uterosacral ligaments to the anterior of the cervix was to draw the cervix backward toward the sacrum; this effect was very apparent during the operation. The cervix was covered with a flap of vaginal tissue and the anterior wall of the vagina was closed in the usual manner. The case was then ready for the restoration of the perineum and cure of the rectocele. Dr. Grad then reported ten cases in which this operation had proved highly satisfactory and concluded that the Jellett operation of vaginal shortening of the uterosacral ligaments in procidentia uteri deserved a place among the carefully selected gynecological operations. It was based upon an indefinite anatomical basis, was devoid of danger, could be easily performed, was practical in application, and brought the desired results. It was an operation that could be combined with other operations, such as shortening of the round ligaments. Dr. Grad's experience with this procedure was so satisfactory that he said he could recommend it most highly.

Dr. Samuel Bandler said that Dr. Grad's use of the term "pelvic fascia" was a little confusing. What Dr. Grad had called pelvic fascia they were accustomed to call connective tissue. It was full of elastic fibers and generously distributed throughout the six connective tissue ligaments which were attached at the level of the internal os and about the cervix. This tissue was especially abundant in the lower part of the broad ligament, constituting at that point the ligamentum cardinale which was the most important structure in keeping the uterus in its normal position and holding it up in the pelvis. This pelvic connective tissue was very rich along the lateral borders of the cervix, and he believed that the uterosacral ligaments which Dr. Grad made use of in this operation included much of this ligamentum cardinale. He considered the high amputation of the cervix an important step of the operation and the way in which he covered the new external os with vaginal mucosa included within the needle's grasp these very structures, fastening them lateral to and anterior to the cervix. Any operation which served to lift the cervix up and back into the hollow of the sacrum was of great value because no operation could cure the patient unless the cervix assumed something of its natural location.

Dr. Samuel Jerome Druskin said that a similar operation had been originated by Dr. Wagner of Vienna and was first suggested in America by Watkins. At the Wertheim clinic the work was done by incising the anterior vaginal wall, then opening the peritoneum, getting hold of the fundus and pulling it down, and pushing the cervix back. This enabled the operator to get at the sacrouterine ligaments of the prolapsed uterus with ease. The broad ligament was then buttonholed on each side of and close to the uterus just above the parametrium. The sacrouterine ligaments were now cut close to their uterine attachment and drawn through the openings in the broad ligament, crossed on each side and fastened in front of the cervix. Any redundant ligament was resected. The lower part of the uterus now rested in a sort of hammock. The results were very good. The speaker laid stress on the importance of preserving the cervix.

## Books Received.

*The* Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Papers on Psycho-Analysis. By Ernest Jones, M.D., London, M.R.C.P., London. 432 pages; cloth; price $4.00 net. William Wood & Company, New York.

Handbuch der Speziellen Chirurgie des Ohres und der Oberen Luftwege. Vol. IV, Parts 5 and 6. By Dr. L. Katz. 143 pages; illustrated; paper; price 8.50 Mks. Curt Kabitzsch, Publisher, Wurzburg.

A Manual of Elementary Zoology. By L. A. Borradaile, M.A. 470 pages; cloth; illustrated; price $3.75 net. Oxford University Press, New York.

The Medical Diseases of Children. By T. R. C. Whipham, M.A., M.D., M.R.C.P. Illustrated; 417 pages; price $3.75; cloth. Oxford University Press, New York.

The Treatment of Disease in Children. By G. A. Sutherland, M.D., F.R.C.P. 403 pages; cloth; price $3.75. Oxford University Press, New York.

The Diseases of the Skin. By Willmott Evans, M.D., B.S., B.Sc., F.R.C.S. Illustrated; cloth; 367 pages; price $3.75. Oxford University Press, New York.

Minor Surgery. By Leonard A. Bidwell, F.R.C.S. Second edition; illustrated; cloth; price $3.75; 299 pages. Oxford University Press, New York.

Cancer, The Problem of Its Genesis and Treatment. By F. W. Forbes Ross, M.D., F.R.C.S., D.P.H. 261 pages; cloth; price $5.00 net. Methuen & Company, Ltd., London.

A History of Nursing. By Lavinia L. Dock, R.N. Vol. IV. Illustrated; 338 pages; cloth; price $5.00. G. P. Putnam's Sons, New York and London.

A History of Nursing. By Lavinia L. Dock, R.N. Vol. III. Cloth; illustrated; 340 pages; price $5.00. G. P. Putnam's Sons, New York and London.

Medical Men and the Law. By Hugh Emmett Culbertson. Cloth; 325 pages. Lea & Febiger, Philadelphia and New York.

Diet and Hygiene in Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. Cloth; 194 pages; price $2.00 net. Paul B. Hoeber, New York.

The Labyrinth. By Alfred Braun, M.D., and Isidore Friesner, M.D. Cloth; 250 pages; illustrated; price $4.00 net. Rebman Company, New York.

Bakteriologiske Studier over Barnetuberkulose. By Arent de Besche. Paper; 255 pages. Trykt I Steen'ske Bogtrykkeri, Kristiania.

Psychanalysis: Its Theories and Practical Application. By A. A. Brill, Ph.B., M.D. 337 pages; cloth; price $3.00 net. W. B. Saunders Company, Philadelphia and London.

The Surgery of the Skull and Brain. By L. Bathe Rawling, F.R.C.S. 340 pages; cloth; illustrated; price $6.00 net. Henry Frowde, Oxford University Press, Hodder & Stoughton, London.

Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Vol. I; No. 5. Paper; 155 pages; illustrated; price $8.00 net per year. W. B. Saunders Company, Philadelphia and London.

Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Vol. I; No. 6. Paper; illustrated; 153 pages; price per year $8.00. W. B. Saunders Company, Philadelphia and London.

The Principles and Practice of Obstetrics. By Joseph B. DeLee, A.M., M.D. 1060 pages; illustrated; cloth; price $8.00 net. W. B. Saunders Company, Philadelphia and London.

Die Prostitution, Erster Band. By Dr. Iwan Bloch. 870 pages; paper. Louis Marcus Verlagsbuchhandlung, Berlin.

Mendel's Principles of Heredity. By W. Bateson, M.A., F.R.S., V.M.H. Cloth; price $3.50 net; illustrated; 413 pages. G. P. Putnam's Son, New York.

Diseases of the Heart and Aorta. By Dr. Arthur Douglass Hirschfelder, M.D. Introductory note by Lewellys F. Barker, M.D., LL.D. Second edition; cloth; illustrated; 738 pages; price $6.00. J. B. Lippincott Company, Philadelphia and London.

Foods, Their Origin, Composition, and Manufacture. By William Tibbles, LL.D., M.D., L.R.C.P., M.R.C.S., L.S.A. 950 pages; cloth; 18 shillings net. Bailliere, Tindall & Cox, London.

Klinik der Nierensteinerkrankung. By Wilhelm Karo. Paper; 34 pages. Carl Marhold, Halle a S.

The Fitness of the Environment. By Lawrence J. Henderson. Cloth; 317 pages. The Macmillan Company, New York.

Centralblatt für die Grenzgebeite der Medizin und Chirurgie. By Dr. Paul Clairmont and Dr. Hermann Schlesinger. Paper; 424 pages; 16 Band, Nr. 2/3. Gustav Fischer, Jena.

Pathology, A Manual for Teachers and Students. By W. T. Councilman, M.D. 405 pages; cloth. W. M. Leonard, Boston.

Transactions of the American Association of Genitourinary Surgeons; Twenty-sixth Annual Meeting Held at the Bellevue-Stratford Hotel, Philadelphia, June 7th and 8th, 1912. Volume VII. Paper; 315 pages; illustrated. Frederick H. Hitchcock, New York.

Mind and Health. By Edward E. Weaver, Ph.D. Cloth; 500 pages; price $2.00 net. The Macmillan Company, New York.

Common Diseases. By Woods Hutchinson, A.M., M.D. Cloth; price $1.50 net; 452 pages. Houghton Mifflin Company, Boston and New York.

Foods, Nutrition and Digestion. By Susanna Cocroft. Second Edition. Paper; 315 pages. Physical Culture Extension Society, Chicago.

Men, Manners and Medicine. By Medicus Peregrinus. Paper; 98 pages; price $1.00. W. M. Leonard, Boston.

Nervous Diseases, Organic and Functional. By M. Allen Starr, M.D., Ph.D., LL.D., Sc.D. Fourth Edition. Illustrated; 970 pages; cloth. Lea & Febiger, New York and Philadelphia.

The Plant Alkaloids. By Thomas Anderson Henry, D.Sc., F.C.S.; cloth; price $5.00 net; 466 pages. P. Blakiston's Son & Company, Philadelphia.

Electrotherapeutics for Practitioners. By Francis Howard Humphris, M.D., F.R.C.P., M.R.C.S., L.R.C.P., L.M. Illustrated; cloth; price $2.40 net; 243 pages. Longmans, Green & Company, New York.

Diseases of the Stomach and Upper Alimentary Tract. By Anthony Bassler, M.D. Illustrated. Second Edition. Price $6.00 net; 870 pages. F. A. Davis Company, Philadelphia.

An Introduction to Chemical Analysis. By Elbert W. Rockwood, M.D., Ph.D. Fourth Edition. Illustrated; cloth; price $1.50 net; 247 pages. P. Blakiston's Son & Company, Philadelphia.

Suggestion und Hypnose. By Dr. Med. A. Sopp. Paper; 72 pages; price, 1.80 marks. Curt Kabitzsch, Würzburg.

Golden Rules of Surgery. By Augustus Charles Bernays, A.M., M.D., Hdlbg., M.C.R.S. Second Edition, Revised and Rewritten by William Thomas Coughlin, M.D. 281 pages; cloth; price $2.25 net. C. V. Mosby Company, St. Louis.

Elementary Biology. By James Edward Peabody, A.M., and Arthur Ellsworth Hunt, Ph.D. Illustrated; 229 pages; cloth; price $1.25 net. The Macmillan Company, New York.

Human Physiology. By Professor Luigi Luciani. Translated by Frances A. Welby. Edited by Dr. M. Camis, with a peface by J. N. Langley, F.R.S. In four volumes. Vol. II. Illustrated; 558 pages; cloth; price $5.25 net. The Macmillan Company, London.

Cardio-Vascular Diseases. By Thomas E. Satterthwaite, A.B., M.D., LL.D., Sc.D. Cloth; 166 pages; illustrated. Lemcke & Buechner, New York.

Manuel Pratique de Kinésithérapie. By L. Durey. Part 6. Paper; illustrated; 231 pages. Librairie Felix Alcan.

Manuel Pratique de Kinésithérapie. By R. Hirschberg. Part 7. Paper; illustrated; 144 pages. Librairie Felix Alcan.

Zur Klinik der Eiterungen des Ohlabyrinths. By Professor Dr. W. Uffenorde. Illustrated; paper; price 5 marks; 103 pages. Curt Kabitzsch, Würzburg.

Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose. By Dr. Bandelier and Dr. Roepke. Paper; illustrated; price, paper, 8.30 marks; bound, 9.50 marks; 30 pages. Curt Kabitzsch, Würzburg.

## Therapeutic Hints.

**Salvarsan in the Treatment of Vincent's Angina.**—J. Anglada and P. Réveille note that like other spirilloses Vincent's angina may be favorably affected by the use of salvarsan. They base their method of treatment upon the good results reported by Achard and Flandin in treating Vincent's angina by means of the local application of this drug. Because of its simplicity the authors prefer this method to the intravenous and intramuscular injections. The salvarsan may be applied directly to the lesions in powder form, or it may be mixed with glycerin and applied on a tampon. The applications are made twice a day. In from three to five days in most cases the cure is complete.—*Progrès Médical,* February 15, 1913.

**The Use of B-Imidazolylethylamine in Obstetrics.**—F. Jaeger reports that this drug is a valuable substitute for ergot in the stimulation of uterine contraction. If labor pains have begun, the administration of this drug makes them more effective and shortens the duration of labor. This compound occupies a position midway between ergot and pituitary extract. There is one important precaution to be noted in the use of β-imidazolylethylamine, namely, it should be administered only when the os is widely dilated, for otherwise it would cause a spasm of the cervix and retard labor. This drug is prepared from histidin by the splitting off of carbon dioxide. It directly stimulates smooth muscle.—*Zentralblatt für Gynäkologie,* February 22, 1913.

**The Treatment of Asthma in Children.**—T. R. C. Whipham states that in the case of infants, when the attack is of a bronchitic nature and induced by indigestion or a similar cause, a saline aperient is all that is usually required. For the relief of definite spasmodic attacks, inhalations of the fumes of niter paper or of the following are very effective:

℞ Stramon. fol. pulverat., ʒ ss.
Anis. fruct. pulverat.,
Potass. nitrat., aa ʒ ii.
Tabac. fol. pulverat., grs. v.

Antipyrin in doses of 3 to 5 grains at night is also useful in lessening the tendency to spasm. In the intervals between the attacks there should be administered a mixture containing potassium iodide, stramonium, and belladonna. If the paroxysm is severe, atropine may be injected hypodermically.

Any abnormalities in the nasopharynx should be attended to. Adenoids and enlarged tonsils should be removed, and cauterization of the nasal mucous membrane, especially if hyperesthetic, often causes improvement. Rickets should be treated on appropriate lines and the child's general health maintained by means of tonics. A change of climate may be necessary. A high, dry, and moderately warm place suits these patients best. An open air life and a carefully regulated diet are of eminent importance. —"The Medical Diseases of Children."

**Anesthesia of the Drum Membrane.**—N. R. Blegvad of Copenhagen has found that the following solution, applied on a tampon to the drum membrane, produces anesthesia of the latter in about twenty minutes:

℞ Cocaine hydrochloride, 1 gram.
Salicylic acid, 1 gram.
Alcohol, 2 grams.
Solution of suprarenal extract, 1 per cent, 20 drops.

—*Deutsche medizinische Wochenschrift.*

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## Original Articles.

### PERITONEAL ADHESIONS OF THE INSIDIOUS TOXIC GROUP.*

BY ROBERT T. MORRIS, M.D.,

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THIRTY years ago we gave scant consideration to the subject of peritoneal adhesions which follow acute inflammatory processes. A decade later, surgeons in different parts of the world were making a study of the importance of such adhesions, in their relation to post-inflammatory disturbances. Robinson of Chicago called attention to the frequency of occurrence of adhesions in the cecal region, sigmoid region, and gall-bladder region, in cases without history of acute inflammatory attack. He tried to show that they were caused in the cecal and sigmoid regions by traumatism produced by the action of the posas muscles. Robinson's theory we assume now to have been incorrect. Within the past decade we have come to hear much of Jackson's membrane, Lane's kink, and of the adhesions of the upper part of the abdomen which we may call briefly "attic adhesions." The time has arrived for a new perspective in relation to peritoneal adhesions, which are found to some degree in almost every adult on post-mortem examination.

At the outset we have to take into consideration various peritoneal defects which remain as the result of defective development of the embryo at the time when various organs are taking their respective permanent places. Such peritoneal defects, sometimes mistaken for adhesions, cause very little disturbance, for the reason that growing viscera adapt themselves pretty well to the situation. The group of defects which are now classified as Lane's kink and Jackson's membrane seem also to date back to embryonic life, and to consist in a later connective tissue hyperplasia in response to some irritation. There is contributory testimony favoring the idea of insidious irritation, in the presence of various adhesions associated with the colon, and with other structures in the vicinity of the pylorus and bile ducts.

In searching for a cause for this insidious irritating influence we have to take into the problem our recent knowledge concerning colonic bacteria, more than sixty species of which have been isolated. Many of these under normal circumstances appear to be symbiotic, playing a necessary part in digestive processes. The colonic bacteria which are harmless or useful under ordinary circumstances, and the colonic bacteria which are always injurious send an excess of toxins into the circulation to be metabolized, under conditions of present day civilization. All of the civilized nations of the world at this stage in our cultural period are now undergoing decline, with various degrees of rapidity. We find arrested development of the ductless glands and of other protective organs, in connection with other stigmata of physical decadence. This means a loss of normal protective efficiency against the toxins which are thrown into the circulation in excess. They are improperly metabolized, and cause harm directly—or indirectly through the proteolytic changes brought about by their presence.

It seems to be a tenable hypothesis that we are to have an increasing number of cases of Jackson's membrane, of Lane's kink, and of attic adhesions, for the reason that causes favoring insidious irritation of the body cells are increasing under the methods of life adopted by a gregarious species—*Homo sapiens*. It is perhaps not an untenable hypothesis to assume that Lane's kink and Jackson's membrane represent hyperplastic increase in connective tissue, something like Dupuytren's contraction of the palmar fascia; while the various peritoneal adhesions of insidious development seem to be due to toxic irritation of the endothelial group of cells. We have, then, demonstration of toxic irritation of connective tissue cells and of endothelial cells manifested in the ways characteristic of the two groups.

From the surgical point of view, one of the greatest new vistas for surgery is being opened. Surgery of the future will have very much to do with the results of insidious toxic irritation of abdominal structures.

The toxic impression is intensified in the presence of colonic stasis; colonic stasis is favored by the relaxation of peritoneal supports, common to a fairly large proportion of individuals in the community at the present time.

In most of our cases of colonic stasis we must at the outset of treatment of patients, obtain radiographs showing the position of the colon and stomach. The physician of the future will hardly dare begin treatment of many cases now believed to be purely medical until he has determined if colonic stasis is due to interference with motility, through abnormal positions of the abdominal viscera, or through the influence of peritoneal adhesions, and if these features are remediable through surgery.

One cannot briefly enumerate the diseases which have been held to be purely medical and which are now believed by many to have toxic origin—let us say, for instance, neuritis, migraine, epileptiform seizures, arteriosclerosis, and many of the psychoses. We do not know at the present time what proportion of such diseases belongs to a toxemia of colonic origin, but we do know that a certain number of them have this causal relationship, and it is for us now to find out the proportion. A sufficient number of cases of the sort mentioned, have cleared

*A paper read at the meeting of the New York County Medical Society, March 7, 1913.

up unexpectedly after surgery (which had for its object nothing more than the relief of intestinal stasis) to cause us to become cognizant of the vast dimensions of our new vista.

When the influence of colonic toxins first engaged the attention of the profession, crude surgical procedures were proposed—as might have been expected—and the proposal to remove the colon was seriously considered by some of the more radical students of the subject. The procedure was actually carried out, but with results which did not seem to justify its employment. The next step in advance consisted in suspending the stomach and colon in such a way as to give some relief from mechanical interference with colonic and gastric motility. This was often supplemented by partial excision of the colon, but the severity of the operation did not appeal to the general practitioner favorably. Now, surgeons are getting to agree upon the desirability of an operation which is done with such ease and rapidity that the patient has very little shock, and which suffices to place the patient in such condition that he is readily amenable to subsequent treatment aimed against intestinal putrefaction and fermentation, by the physician.

This operation consists in a simple short-circuiting of the colon. The ileum or cecum is placed against some convenient segment of the sigmoid colon, and the two structures held temporarily by traction sutures are quickly united in such a way that four or five feet of the offending colon are thrown out of commission. Sufficient storage room is left for fecal matter, but the large useless area of the colon is no longer able to turn into the circulation a harmful flood of toxins. The short-circuiting operation can be done through a comparatively small incision and with so little attendant shock that we sometimes see a patient reading a newspaper next morning in bed, and sitting out of bed in ten days.

There are many cases of Jackson's membrane, Lane's kink, and attic adhesions which will require more elaborate surgery, but the short-circuiting operation represents a refinement of later day surgery, which will be applicable as a sort of preliminary therapeutic resource, for the physician who wishes to gain easier control of a large group of patients presenting symptoms of chronic toxic origin.

616 Madison Avenue.

## THE PREVALENCE OF CATARRHAL DEAFNESS AND ITS ECONOMIC CONSIDERATION.*

By HAROLD HAYS, A.M., M.D.,

NEW YORK.

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In a recent conversation the question arose as to the difference in the mental attitude towards life of the deaf person and the blind person. The blind individual in the majority of instances looks at life cheerfully and is more or less contented with his fate, but the deaf individual, on the contrary, is usually morose and melancholy. A deaf man who was present at the time this conversation took place was asked if he could explain why this was, and he said the difference is this: "When you talk to a blind man you make him forget his troubles; when you talk to a deaf man you constantly remind him of them."

* Read before the N. Y. County Medical Society, March 7, 1913.

The number of cases of catarrhal deafness that we have seen both in the dispensary and in private practice up to the present time is appalling. I say "have seen" because I believe that these cases will occur less frequently in the future now that the otologist understands the importance of treating ear conditions in early childhood, and now that nasal troubles and throat obstructions, such as tonsils and adenoids, are removed early.

To indicate the frequency with which catarrhal deafness occurs it will be of interest to peruse the following figures taken from the reports of three of our large hospitals, the New York Eye and Ear Infirmary, the Manhattan Eye, Ear and Throat Hospital, and the Illinois Eye and Ear Infirmary.

In the year 1911 there were admitted to the ear service of the New York Eye and Ear Infirmary 14,606 cases (which included 3,752 nose and throat cases), making 10,854 ear cases. The number of cases suffering from middle ear disease was 6,561; 1,217 cases were suffering from wax in the canal, causing deafness, which was much relieved after cleaning out the canal. These comprised, however, 20 per cent. of the ear cases and about 10 per cent. of the total number of cases. There were 1,656 cases of O. M. C. C. (chronic catarrhal otitis media), forming 27 per cent. of the middle ear cases and 15 per cent. of the total number of cases. In the year 1912 there were 10,085 ear cases treated at the infirmary (2,625 nose and throat cases included), making 7,460 ear cases. There were 5,542 patients suffering from middle ear disease, of which 1,531, or 38 per cent., had O. M. C. C. There were 892 cases of cerumen, making 2,423 cases suffering with some form of deafness. O. M. C. C. cases comprised 17 per cent. of the total number of cases, and 20 per cent. of these complained of ear trouble.

In the year 1910 there were 7,913 cases at the Manhattan Eye, Ear and Throat Hospital, of which 5,381 were cases of middle ear disease. Of these there were 1,254 cases of cerumen, about 16 per cent. of the total number of cases. In 1911 at the same hospital there were 10,534 ear cases, of which 7,212 had trouble with the middle ear, or 68 per cent. of the ear cases. There were 2,824 O. M. C. C. cases, 27 per cent. of the total number, and 39 per cent. of the middle ear cases.

At the Illinois Charitable Eye and Ear Infirmary during the year 1909 there were 2,733 ear cases, of which 1,952 suffered from middle ear disease. There were 454 O. M. C. C. cases, 18 per cent. of the total number, and 23 per cent. of the middle ear cases. In 1910 there were 2,064 cases suffering from middle ear diseases. There were 456 O. M. C. C. cases, or 21 per cent. of the total number of cases.

We see by the above statistics that cases of catarrhal deafness form about 20 per cent. of the cases seen in our hospitals. Besides these we have to consider those patients suffering from cerumen or wax in the canal. These patients form about 10 to 15 per cent. of the total number of cases. The majority of these patients not only suffer from deafness as a result of the wax, but have some mild form of catarrh in the middle ear which becomes insidiously progressive unless something is done to relieve the condition.

We have here considered only the individual patient who comes to the hospital or office for the first time. Besides this we should also consider the return of the old patients and the proportion of these patients that suffer from catarrhal deafness.

In a clinic such as ours (Dr. Robert Lewis' Clinic) at the New York Eye and Ear Infirmary it is to be noted that over 60 per cent. of patients that return for treatment week after week belong to the class who are suffering from diminution in hearing and its accompaniment, tinnitus. Many of these patients are wage earners, and as such have a certain economic value, which is considerably diminished on account of this infirmity. The patient runs from one clinic to another seeking what little relief he can, and finding very little relief, if any. They are taken away from their work to come to the hospitals, and many of them cannot work at all. Some of them take their infirmity with an unusual stoicism and fortitude; others become neurasthenics and are a burden to themselves, to their family and to their friends.

There are many causes for catarrhal conditions of the ear. The majority start without any warning in early childhood, being a result of the various diseases of this period of life. Neglected ears are so common that it is an exception to find parents attending to this neglect unless they can notice some discharge or until the child becomes inattentive. Even where the period of childhood is outgrown without any notice being taken of any diminution in hearing, there are many dangers towards the organ of hearing in a city such as ours that are hard to overcome. Atmospheric changes form an important part, and the character of the patient's work has a great deal to do with the condition of hearing. "Slight deafness is widespread among jute workers, but other textile operatives may be afflicted in a similar degree," says Thomas Oliver in a book called "Dangerous Trades." This is due to the excessive noise of the looms. "It may be taken as a fact based upon experience that artisans who are exposed to such loud noises as are made in hammering rivets suffer from deafness. Boiler makers and riveters become deaf at an early age. Workers in sheet iron factories are sometimes similarly affected with deafness." These workers appear to hear far better while at their work, but it has lately been observed that they do not hear, but closely watch the lips of their fellow-employees until they become very proficient in lip reading.

In a very thorough article entitled "Occupational Diseases of the Ear, Nose and Throat" William Sohier Bryant says, "How widespread this subject is will be plain to you when you consider the occupations which are accompanied by dust, the escape of poisonous gases into the air, the escape of poisonous particles with the dust, continuous loud sounds, explosions and detonations, rapid changes of temperature, rapid changes of humidity, rapid changes of barometric pressure, wetting of the surface of the body, entrance of air in the external meatus, entrance of foreign bodies in the external auditory canal, blows about the head, entrance of pathogenic organisms, hydraulic pressure in external auditory canal or upper air tract."

He outlines the effects of sixty different occupations which all cause pathological conditions of these parts, chief among which are machinists, blacksmiths, barrel-makers, millers, engineers, stone workers, gun powder workers, firemen, pugilists, caisson workers, etc. He concludes his paper with the following apt remarks: "However, the great destructive force of the occupational diseases of the ear, nose and throat is appreciated when the number of those affected is considered. The preventive measures are to be sought by arousing public opinion to these evils and to their extended and vital importance. The danger in the case of every occupation should be recognized by law and should be minimized by law. When the public is sufficiently educated to appreciate the loss through these remediable hardships it will not be slow in demanding salutory legislation and in punishing by legal penalty and public approbrium. The special means of protection in every instance are very obvious."

The economic loss to the individual patient as a result of catarrhal deafness is seldom appreciated by the patient himself until his hearing has become so poor that very little can be done for him. The majority of these patients will spend any amount of time and very often much more money than they can afford to get relief after the condition is beyond help of repair. We have preached preventive measures in medicine for the last two decades, and every otologist I have no doubt has preached to individual patients the advisability of the prevention of deafness by using timely measures. The indication perhaps is more evident to the otologist than to the patient he is treating. How often do we spend hours telling these patients in our offices that they should have certain things done? We tell them to have nasal obstructions removed, to have abnormal growths from the throat taken care of, to come to us for one or two treatments every few months or at least for an examination, so that we can be sure that the condition is at least stationary or getting better. The warning signals are ever set by nature. A little feeling of fullness or a slight rumbling noise is thunder to warn us of the storm. A slight amount of treatment at such a time, before the hearing is actually impaired, while the catarrhal condition is still confined to the nasopharynx, will often cause enough relief to prevent deafness in later years.

But what is the use of all this preaching? Unfortunately, the patient will be skeptical. Unfortunately it is human for the majority of people to let their troubles come as they may. They will not come and be cured of what they haven't got even if the physician tells them they are sure to get it. Ever present before their minds is the question of whether the doctor is after their money or not. These patients take a great deal of time, and this time is often valuable to them as well as to the otologist, when they feel that they cannot afford either this time or the money. These are the patients who ten or twelve years later go from one doctor to another, handing out generous fees, hoping that the next new man will suggest something other than that the last old man gave them. We as otologists realize the futility of a great deal of this search, and yet there are few cases without some hope of slight relief which will lessen to some extent the burden of hardship.

Aside from the economic problem there is the vast social problem of the deaf and near deaf, the handicap of the hard of hearing in those pursuits and enjoyments of life that make life worth the living. The sound of the human voice, the conjuring of ideas from spoken words or sounds, the ability to appreciate many of the beauties of nature through the interpretation of sound, the independence of the individual as a concrete spirit are all lost, with the result that the deaf man "slinks into his skin" and drops out of social reckoning. The possibility of improving his thought is minimized. Lectures, the opera, the theater, the church, all of which form an important part of the social life, are no longer en-

joyed with spontaneity. Interpretation of the sounds emanating from the stage or platform interferes with the correlation of ideas. The man no longer enjoys his club life; the woman neglects her social teas. What is the result for such misfortune? The individual resides within himself, becomes too introspective, too self-absorbed, and his horizon is limited to the confines of his narrowing intellect. The blind man is not afflicted in this respect as much as the deaf man. The blind man can paint pictures; he can mentally visualize. Very few men can paint word pictures, for our training has not been such that our imagination has been stimulated to the extent of allowing us to present our minds with passing word thoughts. Memories of words are inaccurate; memories of sight leave a different impression that can always form a definite concept.

As Helen Keller says, "The problems of deafness are deeper and more complex and of much more importance than blindness. Deafness is a much more severe misfortune, for it means a loss of the most vital stimulus, the sound of the voice, that brings language, sets thoughts astir and keeps us in the intellectual company of man."

It has been within the experience of all of us to find certain patients who have had their life's journey made exceedingly hard because of their hearing defect. Many of these patients have grown into middle life, have married and have had children. They have always been able to support the family and have been able to put away a few dollars for their old age. Gradually the enemy has crept upon them. At first only a slight catarrh was present, then they felt a dullness in the ears, then they heard the noise of tinkling bells, of the roaring ocean or of the whistling of steam. Sometimes at this early stage they have consulted the family physician, who commits the costly error through gross ignorance of either avoiding the subject or else telling the patient to forget it. Gradually the hearing becomes less and less and the noise in the ears becomes worse and worse. Relief is sought of the specialist who honestly tells the patient that he has a catarrhal deafness which is bound to become worse unless he comes regularly for treatment once or twice a week over a period of months or years. The few visits that are made in the beginning are paid for grudgingly, and after the first month or so the patient gives up in despair, ignorant of the fact that the insidious process that has been going on for years cannot be cured in a few weeks. Another year passes, nothing having been done in the meanwhile, then another specialist is consulted. He gives the same advice and tries a similar treatment. So he goes on until he becomes hopelessly deaf. To him all physicians are scoundrels and money bleeders, and he sinks into that hopeless existence which makes life hardly worth the living. The position which he held a few years ago is weighed in the balance and, without any mercy, eventually his employer casts him off, and he joins the great army of the unemployed. He is the victim of his own ignorance and folly, but is hardly to be pitied in comparison with his wife and children. Their lot is far harder.

Five years ago I saw a patient at the New York Eye and Ear Infirmary who lost his hearing in the right ear in childhood. For some unknown reason the hearing in the left ear became lost entirely. The man had been an insurance agent who had been making $40 a week. He kept coming to the hospital week after week with no relief. Total nerve deafness had occurred in the left ear and he was forced to attempt to hear with the almost totally destroyed right ear. As an insurance agent he was absolutely useless. When I first saw him he had the free bearing of an ordinary independent American citizen. Within a few months he looked sick and disheartened, disheveled and frowsy. All pride was gone. I took pity upon him and treated him for over a year at the office. In an attempt to restore some hearing in his left ear I operated upon his nose, I opened up his eustachian tubes, I excised a portion of his ear drum, I cleaned out the right ear, but after a year of treatment he was very little better off.

Meanwhile his wife and children were practically starving. She finally managed to get a position that brought in a few dollars a week, while he stayed at home to care for two babies that they boarded for $10 a month. I tried hard to get him some clerical work, for he was an intelligent man, but no employer wanted a deaf man. I finally wrote a letter to the New York *Times* to see if they couldn't get him some work. This paper was kind enough to publish my letter in its advertising columns, with the result that one reply was received from a farmer up in the middle part of the State, saying that he would employ him as a farmhand if he would pay his own fare up to Syracuse. The man would have been of value as a bookkeeper, a letter writer, an envelope addresser, and in a hundred and one other positions, but no employer wanted a deaf man. I lost track of him for two years and then one Thanksgiving morning he dropped into my office and wished to present me with a five-dollar gold piece. He looked happier and apparently was contented on a salary of $9 a week that he earned in an electrical factory in the upper part of the city. I asked him how he managed to get the job, and he told me that there was so much noise in the factory when he went in to ask for employment that he could hear almost as well as the man who was talking to him, and therefore there was no suspicion of his being deaf. In other words, his peracusis in this instance served him a good purpose. Here was a case of a man in the prime of life, with the responsibility of a family, earning forty to fifty dollars a week, being reduced to pauperism within a few short months as a result of his hearing infirmity. The sadness of his case appeals to us, but what is to be done in numberless similar cases? I have a man under treatment now who had been making a salary of $30 a week, but when his hearing became practically destroyed he was told to accept half that sum or get out, although he could work just as well without hearing one word. Employers are unfair towards this class of people. It is a nuisance to them to employ a deaf man, and faithfulness of service for years avails the employee nothing once his economic integrity is lost. In the present stage of society we cannot blame the employer for not burdening himself with the incompetent. And yet every employer owes a certain duty to the community as well as to himself.

When we wish to reckon deafness from an economic standpoint there is a number of factors to consider. We have the problem of the individual, of his family, and of society as a whole. When a man who has been earning a fair salary loses his hearing he not only loses his wage, but oftentimes he becomes dependent on the community, on his friends or on his relatives. In many instances a man's family is left destitute. Unfortunately, we

have a peculiar condition to deal with, for we have found nothing thus far that can alleviate the condition sufficiently so that a man who has become deaf can again become a valuable economic factor. In these cases their faculties are as alert, their muscles are just as strong, their intellect is perhaps keener than before, and yet the individual is dropped from the working force, not because he is not as capable as he was before, but because his affliction is an inconvenience to his employer.

Our scientific and medical knowledge has increased to the stage where the blind can see and the lame can walk. It has not increased to the stage where the deaf can hear. The hard of sight can wear glasses and yet see, cataracts and visual opacities can be removed and the unfortunate can still live and work without being a curiosity. The lame man can be made to walk and often he can cover his infirmity enough to become a useful citizen. But what is being done and can be done for the man who is gradually losing his hearing? Mechanical appliances are not as yet perfected to the stage where a working man can wear one without being pointed out as a curiosity. In order to reckon the vast economic importance of this subject let us for a moment turn to some hypothetical figures. In one year, 1911, at two of our dispensaries there were approximately 5,000 cases of catarrhal deafness treated. Conservatively we may estimate that this is one-half the number of cases that are being treated in the city. Over half of these cases are females, but 75 per cent. belong to the wage-earning class. If we were to figure the average earning capacity of the individual at $10 a week how appalling is the loss of the annual income we see! Most of these patients are either thrown out of employment or else have to obtain a less lucrative occupation. If we reckon that their income is reduced 50 per cent. we find that they lose $25,000 a week, $100,000 a month or about a million dollars a year. Many of these patients apply to the charities. They must be maintained in one way or another; they must live and they must eat. Taking into consideration the money given by these charities, the amount of time spent in dispensaries, and the expense of hospitals for the relief of this condition, we can justly suppose that the ultimate cost for these 5,000 people amounts to at least from two to three million dollars a year.

What can be done for this class of individuals? At the present time the question has been thought of but little. Associations for the welfare of the deaf, outside of those institutions which care for deaf mutes, have been very few. St. Ann's Parish has established a club house for deaf mutes called the Gallaudet House. This institution aims to encourage social intercourse among its members, arranges religious services, and finds employment for some of its members.

Within the past two years the Society for the Welfare of the Jewish Deaf has been formed. It also maintains an employment agency. In answer to a letter of mine the Rev. Dr. Elzas, the secretary, states that during ten months they handled seventy-five individual cases. The fact that stood out prominently was the terrible handicap that the deaf man has in his struggle for a living. As a rule, no employer wants him, and when employed the employer is always glad to get rid of him. The objects of the society are as follows: (1) It is striving to ascertain the trades for which the various grades of the deaf are best fitted. (2) How the industrial department in the institution for the deaf can best prepare their pupils for the work that is to make them self-supporting. (3) What to do with the uneducated and unskilled deaf—a difficult problem, which will probably result in an establishment of some small factory such as broom or rag carpet factory. (4) The society is prepared to have any intelligent deaf man taught a suitable trade and to support him while learning. (5) It finds employment for those out of work and seeks to improve the industrial condition of those who are employed.

But of course this institution deals only with deaf mutes. I have no doubt that in time the scope can be increased so that they will include that most worthy class of individuals to whom we are referring in this paper. Oftentimes these institutions have to deal with a demoralized or an unmoralized class of people. Many of these deaf mutes think themselves as good or even better than their employers, and friction constantly occurs. They appreciate very little what is being done for them and consider that society owes them some debt. Such is not the case with the man who has become deaf later in life, and many of them are only too grateful to receive any assistance whatsoever in the way of obtaining employment. These patients, as I said before, often have families to support, and are willing to go to any length to make both ends meet.

In order to get some information as to what was being done in certain industries with regard to employees who have become deaf as a result of their work, I wrote letters to the New York Central Railroad, the International Brotherhood of Teamsters, the Metropolitan Street Railway Company, and the Bureau of Commerce and Labor at Washington. The railroads answered that they did nothing; the labor union did not answer at all; the Bureau of Commerce and Labor knew nothing about the subject. As we have seen, many trades are responsible for the deafness of their employees, and it seems to me that something should be done either by the Bureau of Commerce and Labor, by the labor unions, or by a special clause in the employer's liability act to further the interests of those who become disabled in this way. Riveters, boilermakers, caisson workers, workers in electrical shops, workers at looms, etc., are all susceptible to so-called catarrhal deafness. Although many of these employees go into these trades with their eyes (and we may say ears) wide open, yet they themselves are not entirely responsible for their own folly, for in many instances these people are unable to earn their livings in any other way. Some form of industrial insurance should also be issued and given these employees so that they may have some slight surety against their forthcoming infirmity.

There are numerous classes of employment open to the deaf man. Among them are book cataloguing, book keeping, envelope addressing, watchmaking, jewelry repairing of all kinds, clothing cutters, tailors, hat makers, and various operatives in industrial concerns; and among the uneducated there are various sorts of manual labor which could be done as well by the deaf man, providing the prejudice of the employers could be overcome.

I believe we are humanitarians as well as physicians and that we should all be interested in the furthering of the welfare of any class of individuals who are handicapped in the battle of life. We should become instrumental in the formation of some general association which would tend to increase the responsibility of the employer in those

classes of trades which are liable to cause diminution in hearing. At the same time we could readily enlist the sympathy of our more wealthy and influential patients who are suffering from deafness, so that they would contribute toward a movement which would help eventually in the alleviation of the suffering of individuals having the same condition.

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## A FEW INTERESTING CASES OF BONE LESIONS.

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In recent years the perfection of *x*-ray pictures and laboratory analyses has aided very materially in the differential diagnosis of bone lesions, so that, at present, in obscure cases the more radical method of sectioning for diagnosis can be obviated in many of these cases. Still bone lesions go on being treated blindly, without a diagnosis; hopeless prognoses are given and the patient drags along undiagnosed, uncured and uncared for through pure failure on the part of physicians to resort to the now ever ready and convenient aids to diagnosis, which are not at all obnoxious to the patient and await the simple thought of the physician.

A presentation of four such cases, interesting in their diagnosis will present some of the difficulties that the patient often presents to the man endeavoring to do them benefit but which through their sensitive natures they leave the physician to find out for himself.

Case I.—M. S., a girl fourteen years old, of Russian-Jewish parentage, born in the United States, came under my care in the surgical clinic of Bellevue Medical College. Parents are both living and healthy; two brothers and two sisters likewise are alive and in good health. No history or signs of syphilis in any of the family.

Fig. 1.—Case I, showing osteoperiostitis of the right radius and left ulna.

Personal History.—Child had measles when one year old; otherwise presented no facts of importance.

Present illness began November, 1911, when she says by slipping and falling against a door she received an abrasion of her right hand on the dorsum of the wrist, soon presenting itself in the form of four papules which enlarged, discharged pus and persistently refused to heal. At the same time as she had received the injury to her wrist she also

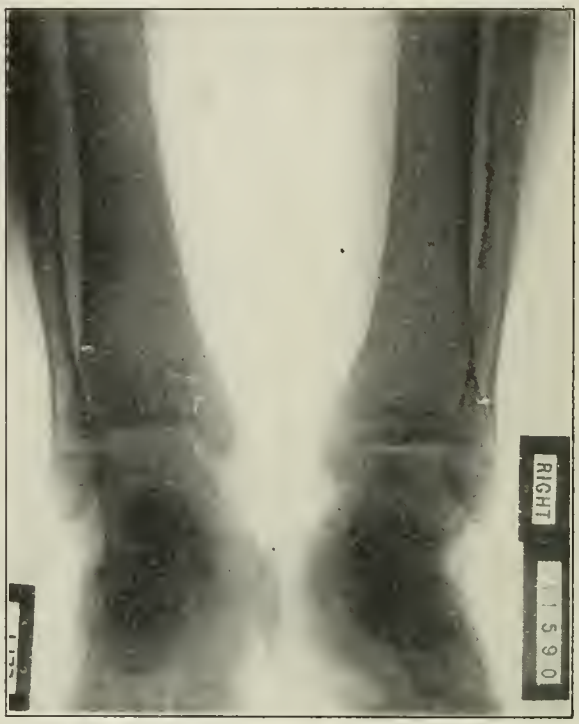


Fig. 2.—Case I, showing osteoperiostitis of the left tibia.

struck the left leg just above the ankle; after about two weeks this part became swollen, painful and inflamed; and then went on to form several pustules which discharged and likewise refused to heal. She applied for treatment to several of the lower east side dispensaries where her condition was treated without avail. Finally in the latter part of 1912 she appeared at Bellevue, where I saw her. Careful questioning failed to elicit any specific history either on the part of the patient or her parents. However, the girl's statement regarding the source of her injuries was varied. At one time she said her wrist condition was caused by a burn with hot water and her ankle to a fracture of the bone. At last she gave the above stated history of falling against a door, which she apparently thought most plausible because she has held to that statement firmly. Examination shows a young girl, well built and nourished for her age. Eyes, nose, ears, mouth, and throat in good condition. There were no stigmata of hereditary syphilis.

On the dorsum of the right wrist over the radius were four papules that had passed into the stage of ulceration. They were close together, had a bluish scarred areolar, undermined circular punched out borders and a soft spongy bleeding base with a discharge of a seropurulent nature. One of these papules was cavernous in its center and probing showed it extended to the radius. These lesions were not painful but were extremely tender.

On the inner side of the left leg at the fold of the flexed ankle was a mass of bluish brown pigmented scar tissue where apparently old lesions had healed only to break out anew in fresh places. In the center of this scar tissue were three ulcers, just such as I described on the wrist, and probing showed they extended to the tibia.

*X*-ray plates were made (Figs. 1 and 2) and they showed an osteoperiostitis of the right radius, the left ulna, and the left tibia. A Wassermann blood reaction proved, as I felt fairly certain it would, three plus positive. Under mixed treatment

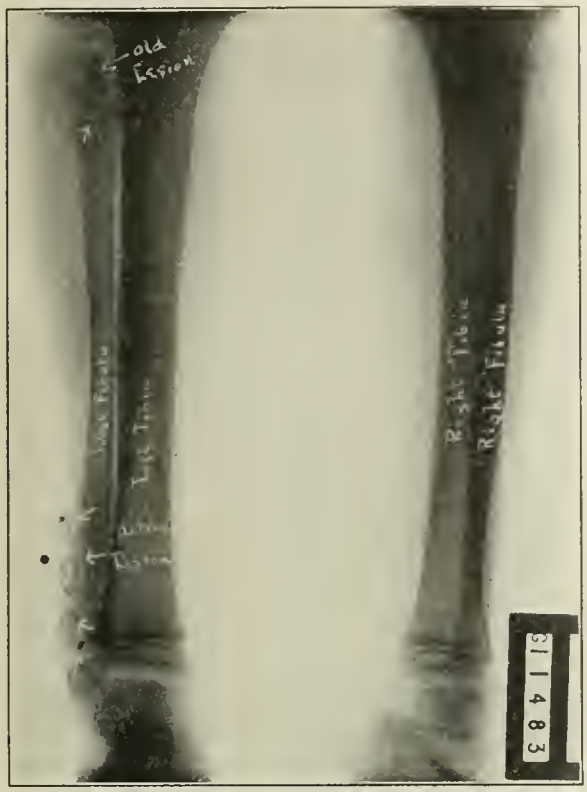


Fig. 3—Case II, showing the advanced osteoperiostitis in the upper and lower extremity of the left fibula.

and local dressings the ulcers promptly healed in the space of six weeks.

In this patient the local lesions had an appearance of specificity and I would have given the mercurial treatment without a Wassermann, but what an aid to a positive diagnosis was this three plus positive Wassermann!

Case II.—F. C., a boy of six, American parentage, saw me at Bellevue, February, 1913. I questioned the mother very carefully in regard to any specfic element in the family and she stoutly denied that any such condition ever existed. She had had no miscarriages or dead children.

Personal History.—Patent had intermittent malarial fever as a child but made a good recovery and has had no further attacks. Outside of an attack of measles, his personal history revealed no further facts. Present illness began one year and four months prior to his admission to Bellevue dispensary. The boy at that time fell and struck the lower part of his left tibia. One year later that part began to swell and formed a reddened soft mass, which was opened in a dispensary. The physicians at that institution treated the boy for four months and finally told the mother that the lesion was a tuberculosis of the bone and advised a radical cure or else to go elsewhere; the latter course appealed more strongly to the fond mother and she appeared at the surgical clinic of Bellevue.

During the treatment of the lower lesion a similar one appeared in the upper part of the leg; but this lesion scabbed over and apparently healed under treatment.

General examination availed no clinical signs of importance. There were no stigmata of hereditary syphilis.

Local Examination.—The healed lesion presented a thin cigarette paper bluish brown scar which lay over the upper end of the fibula. The *x*-ray at this point showed that the skin had healed over an apparently still active osteoperiostitis. The active lower lesion lay over the lower third of the fibula. It presented purely a canal leading to the bone. There were no signs of inflammation or were there any pigmentation, certainly a lesion diagnostic of nothing. Probing the sinus, it was found to lead to the bone.

An *x*-ray plate (Fig. 3) was made and it showed an osteoperiostitis of the upper and lower ends of the fibula with marked absorption of bone. A Wassermann blood reaction was now made and it was reported three plus positive. The boy was given mixed treatment and local dressings with the result that the lesions promptly healed.

After the blood examination I informed the mother that there was a "poisoning of the blood" in the boy which had been transmitted through some agency and asked her if she could not dig out something from her memory. Then came the anti-climax. She gave me a direct history of having contracted syphilis from her husband six years prior, at the time when she was seven months in the family way; her doctor had then informed her that it was too late an acquisition of the disease to transmit it to the child. After that, she had had one miscarriage and one dead born child.

This case shows again the value of the *x*-ray and the Wassermann. It also exemplifies the obstacles that patients will present just to keep their great skeleton locked in the closet of their memory, but syphilis picks the lock and gavorts about.

Case III.—P. M., an adult male, twenty-seven

Fig. 4.—Case III, showing new osseous formation about the embedded bone plate.

years old, born in Ireland, saw me in Bellevue during January, 1913. The family history presented no unusual facts.

Personal History.—Patient works as a kitchen helper, drinks moderately, smokes to the same de-

gree; bowels and kidneys functionating normally. He had measles and scarlet fever as a child and made a good recovery. Venereal diseases positively denied. Eight years previous he was operated upon for trachoma of both eyes and at present has a renewed attack.

Present illness began on June 17, 1911, when a gas engine machine weighing about two ton fell from a wagon, striking his right thigh; he was taken to a hospital, where a simple comminuted fracture of the femur was diagnosed. He lay in bed for one week until such time as the attendant swelling should subside, when he was anaesthetized, the thigh opened and the bone plated. The part healed slowly and after four months' time the patient left the hospital. At this time the right thigh was very much larger in circumference than the left. Apart from the swelling the right thigh was as serviceable as the left; free from pain and functionating perfectly. This satisfactory condition lasted for six months, when there came pain in the thigh at the seat of the fracture; two pustules appeared in the scar of operation. These opened and drained a seropurulent material for another six months, when the patient thought it best to seek surgical advice.

Examination.—Patient is a male of good frame, well built and nourished. Aside from the present attack of trachoma and the local thigh condition the physical examination revealed no abnormal facts.

Fig. 5.—Case III, another picture, the same as Fig. 4, taken at a different angle, showing screws and wire which the operator used to maintain the bone plate *in situ*.

Local examination of the right thigh showed it very much larger in circumference than the left. This swelling was fusiform, being largest at the seat of the old fracture, very hard on palpation and not tender. In the line of the operation scar were two sinuses which communicated after entering the flesh for a distance of two inches and formed a single channel which then led down to the bone for another two and one-half inches. From these openings there was a seropurulent discharge. The areolar about these sinuses was red and irritated, apparently by the discharge. Probing of these canals showed they led to the bone. The plates which had been applied at the operation could not be felt through these openings but the patient was certain they had not been removed. As a matter of having good habits in these cases, a Wassermann reaction was made and reported negative.

Fig. 6.—Case III, showing the leg after removal of the plate and after amputation.

*X*-ray pictures (Figs. 4 and 5) showed the plates still *in situ*, and embedded in a fusiform formation of new osseous growth, both of compact and cancellous nature. The tremendous extent of this new formation led to a doubt whether this was due purely to the long standing irritation of the plates, in which case the cure was simple, or whether there had been incited the formation of a malignant new growth, an osteosarcoma.

The patient was sent to a hospital. Here a pocket of sterile pus was found on the outer side of the femur by aspiration. An incision was made over the old scar, the plates found embedded in the new osseous formation and removed. At the same time a section of this tissue was removed for microscopical examination. The report showed that it was a giant and a small round-celled sarcoma. A disarticulation was now advised, which the patient promptly refused and was subsequently discharged from the hospital. However, in about a week the patient returned and the operation was performed.

Figs. 6 and 7, taken after the amputation, show the extent of the tumor formation and also that as far as the *x*-ray revealed local growth, the tumor

had been thoroughly excised, but further cellular or glandular involvement is feared and awaited. This case shows one of the dangers of leaving bone plates *in situ*. They should be applied only after the more common methods of treatment have failed,

Fig. 7.—Case III, showing the upper limit of the tumor formation revealed by the *x*-ray after amputation.

and once having served their purpose they should be removed. It also demonstrates the value of sectioning a suspicious mass for a pathological examination in order to make an early diagnosis which is so paramount in these cases since operation affords them the only hope of cure.

Case IV.—Was that of a man in middle life, of American birth, working as a traveling man, who was brought to Bellevue by his physician, fifty odd miles out in New Jersey, to have the opinion of a surgeon as regards an ulcer that the patient had had for six months and which instead of yielding to treatment, had been increasing in size. The family history was of negative importance.

Personal History.—Patient positively denied any venereal disease. The rest of his history was likewise of no importance as regards his present lesion. Present illness began six months prior as an apparently small abrasion of his left leg; this lesion soon enlarged and despite treatment has increased in size until at present it is about four inches in diameter.

. Examination revealed nothing outside of the present ulcer except an old pigmented scar high up on the left thigh which the patient remembered as a boil some years previous. The existing ulcer was situated on the middle third of his left leg lying over the tibia. The areolar was of a bluish pigmentation apparently due to a longstanding congestion at that point; the base was slightly deeper than the border, which was sloping, except at one part for about two inches of its circumference there seemed a tendency toward a circinate, punched out appearance. The granulations were large, pale, and avascular, with very slight seropurulent discharge. It is true that the patient had varicose veins, but the ulcer did not present the appearance of a varicose ulcer; in fact, it was just a plain ulcer and typical of no specific variety, except at that one punched out place, which might have resembled syphilis. The urine was examined and showed no albumin or sugar.

An *x*-ray plate was taken. This showed the tissue beneath the base of the ulcer formed a cup shaped mass of chronic inflammatory tissue which extended

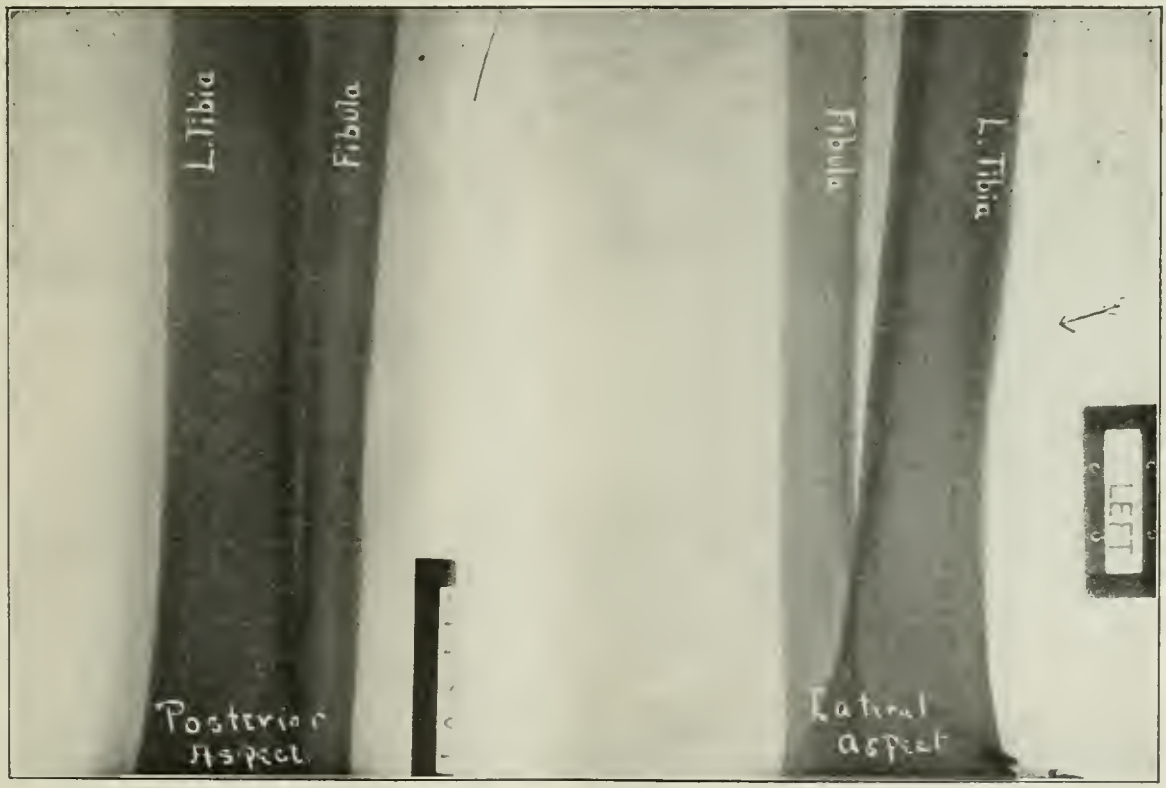


Fig. 8.—Case IV, showing local periostitis by downward infiltration of an ulcer. The small bullet-like spots are the shadows of phleboliths in the tissue of the ulcer.

to the bone and had incited a superficial periostitis. Unfortunately a Wassermann could not be made at that time and the patient lived too far to return and have it done.

Considering everything, the obstinate nature of the ulcer and the old scar, the physician was advised to put his patient on some form of mercury and increasing doses of potassium iodide, more or less as a therapeutic test; one might call it a "therapeutic Wassermann." Three weeks later the physician wrote to say that the ulcer was one-third healed and asked if there was anything further he could do.

In this case the diagnosis was doubtful, but I think the result after the therapeutic measures confirmed one of a syphilitic ulcer.

*Conclusions.*—(*a*) Remember the value of *x*-ray, Wassermann, and pathological sections in diagnosis.

(*b*) An *x*-ray showing a bone "mouse gnawed" is highly suspicious of a specific origin.

(*c*) Bone plates should be removed after they have served their purpose, since they are essentially a foreign body which incites irritation by their mere presence.

(*d*) Though highly lacking the element of science, still a therapeutic application of the "mixed treatment" certainly will do no harm and often will be found substantial evidence for or against a diagnosis of syphilis.

I wish to thank Dr. Lewald of the Edward Gibbs *X*-Ray Laboratories for his excellent pictures of these cases.

64 West Fifty-sixth Street.

## THE RESULTS OF TONSILLECTOMY.*

By BRYAN De FOREST SHEEDY, M.D.,

NEW YORK.

I DEEM it unnecessary before this gathering to spend much time on an introduction to my subject, as I dare say every man here has removed tonsils many times with what he and his patients considered satisfactory results. The text may seem ambiguous,

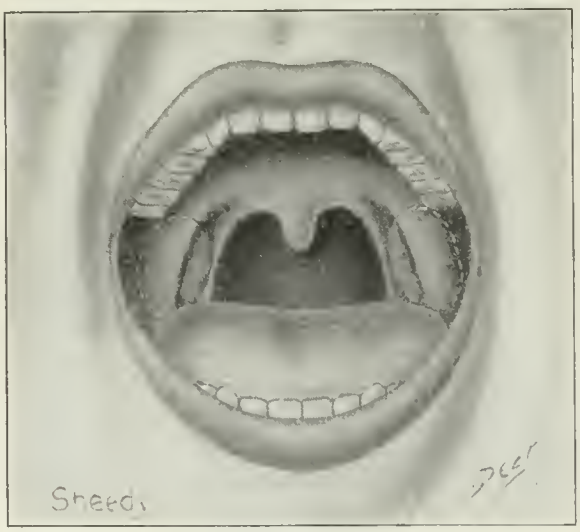


Fig. 1.

but in explanation would say that the apparent ambiguity was intentional as I desired that all present should discuss the subject from some particular angle, though my remarks shall be limited to a great extent to the throat results following the work. Not all have done tonsillectomies to the exclusion of the old-time tonsillotomy operation, and those who have done tonsillectomies may not

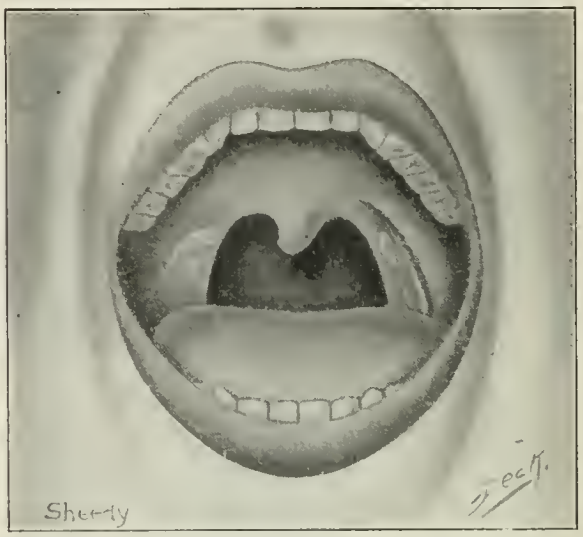


Fig. 2.

have observed the results of their work months after operation. I have noted the throat conditions in about fifty patients, as I found them from two to three months after operation, and will discuss those findings with you.

The results of tonsillectomy, so far as removing pathological tonsils is concerned, are, I believe, very much better than the results obtained from the old tonsillotomy procedure, and though we have many physical throat defects following tonsillectomy, the constitutional benefits derived from the procedure are, I believe, far greater and outweigh the drawbacks following the work. I also believe that some of the physical throat defects are due to the present customary method of removing the gland, so it is my intention at the end of this paper to digress from my text and point out to you a form of procedure which, I believe, promises to do away with some of the bad results obtained in tonsillectomy as it is now performed.

In order to emphasize one or two points I desire to make it may be advisable to refresh your memories in regard to the anatomical make-up of the gland and the tissues surrounding it. Whether the tonsil should be called a gland or the gland a tonsil or whether it should be designated simply as lymphoid tissue or given some other name will not concern us in this discussion. I will use the terms interchangeably and will consider the tonsil a mass of glandular tissue located between the anterior and posterior pillars, but quite independent of them when in a normal condition. The outer wall of the bed on which the tonsil rests is, as you know, made up of the superior constrictor of the pharynx over which there is a thin layer of connective tissue.

The gland, we are told, first appears at the fourth month of intrauterine life and reaches its fullest development at from five to seven years of age, at which time it begins to atrophy, and if it has not been diseased should have wholly disappeared by the time the child is fifteen years old. This gland is only a part of the lymphoid tissue derived from the hypoblast and it is important that we should keep this matter in mind, as too many physicians

*Read before the Medical Association of the Greater City of New York, February 17, 1913.

are inclined to consider disease of the faucial tonsils a local one without bearing in mind that the mass in the nasopharynx, which is called adenoids, or that found at the base of the tongue, described as the lingual tonsil, or the glandular tissue in the

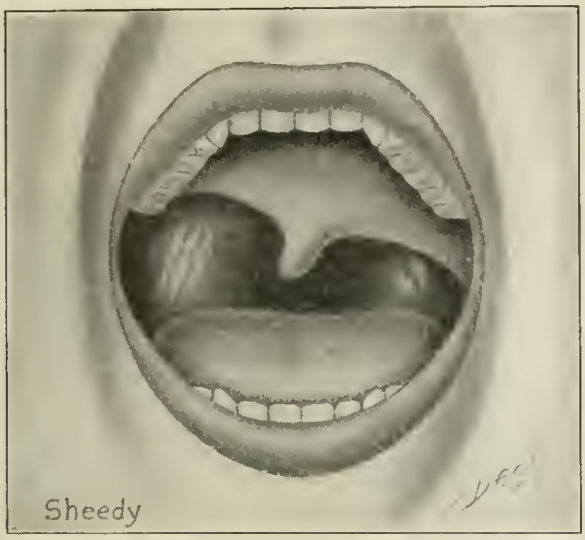


Fig. 3.

crypts of Morgagni, or the peptic glands of the stomach, or the lymphatic structures of the duodenum, or the mass going to form Pyer's patches, or that so often filling the appendix, are lymphoid structures and all derived from the hypoblast, so that where there is a tendency to hypertrophy and abnormality of one portion of the lymph structure, we should keep in mind the possibility of abnormality of all parts in which hypoblastic formations are found. This particular gland, we are told, is wholly covered by the plica tonsillaris before birth, but that shortly after birth the membrane disappears from that part of the gland afterward exposed in the oropharynx. The remainder of the gland is surrounded by a dense layer of connective tissue, generally described as the capsule. Therefore, the capsule extends all around the gland, excepting that portion opening into the throat. We find on the inner side of this capsule bands of connective tissue extending from one side of the capsule to the other and suspended on this connective tissue we find the glandular structures. Leading into the tonsil from the space over which there is no capsule are several openings, according to the size of the gland, which we call crypts or lacunæ, and we find that the mucous membrane covering the pharynx extends over the pillars and into these pockets and through its adherence to the surrounding structures, helps to hold the tonsil in position.

When we examine more carefully the tissues surrounding this gland we find that the anterior pillar is formed by the muscle, which runs from the soft palate to the base of the tongue, the palatoglossus muscle. The action of this muscle constricts the opening between the mouth and the pharynx and has to do with the position of the soft palate in the act of swallowing and talking. Frequently there are inflammatory adhesions found between this muscle and the tonsil. This muscle, where the tonsil is not very large, is rather thick and appears conspicuously through the mucous membrane covering it, in the act of gagging or when the tongue is brought forward. Where the gland has been hypertrophied for a great length of time we find this muscle, or in other words the anterior pillar, very thin, with only a few shreds of the former muscular tissue remaining.

The posterior pillar is also made up of a muscle which runs from the soft palate above to the pharyngeal wall behind, where a portion is inserted into the aponeurosis, while another, and the principal part, passes forward and is inserted into the thyroid cartilage. This muscle has much to do with properly locating the larynx during the act of singing. The combined action of the pillars on the right and the left side of the throat with the pad of Passavant, almost, if not completely, shuts off the mouth from the upper respiratory tract. The membrane of the pharynx extends over the posterior pillar the same as over the anterior pillar, holding the gland in position.

*Supratonsillar Fossa.*—The tonsil bed between the two pillars and above the superior surface of the tonsil, when in normal position, is generally described as the supratonsillar fossa and is covered by the same mucous membrane that covers the tonsil. In this space we find openings leading into the cellular tissues on which the tonsil rests and in which we have suppuration in cases of peritonsillar abscess. It is important at this point to remember that there are one or two crypts in the top of nearly every tonsil, which open into this space and which are frequently the cause of infectious material getting into the sinuses leading to the cellular tissue and causing peritonsillar abscess.

*Tonsil Bed.*—That portion of the tonsillar fossa actually occupied by the gland rests against the superior constrictor muscle of the pharynx, but between the muscle and the capsule is a layer of cellular tissue so that there is a layer of cellular tissue all around outside the capsule and between it and the muscles surrounding the tonsil. This is the tissue in which local anesthetics should be placed when the tonsil is removed under local anesthesia, so that the gland really rests on a mass of cellular tissue infiltrated with the solution used to bring about the anesthesia. As we look at the bed of the tonsil we find three large arteries leading to the gland. (1)

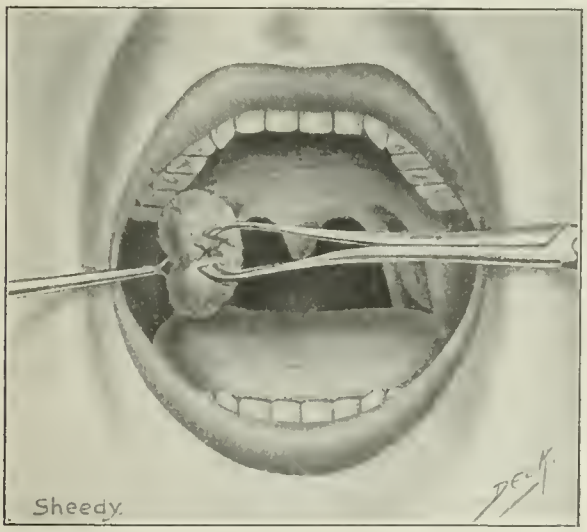


Fig. 4.

The tonsillar artery, a branch of the external maxillary; (2) the ascending pharyngeal, which is a branch of the external carotid; (3) the descending palatine, and several smaller branches; but the three enumerated are the ones we should have in mind in

dealing with hemorrhage. It is well to remember, too, that when you have a large hypertrophied tonsil all these blood vessels are enlarged and therefore many of the smaller vessels become very prominent. Without taking up too much time emphasizing the anatomic relationship of the tonsil, I want to impress upon you the outline of the pharyngomaxillary space, which lies behind and outside the tonsil and in which there is a large amount of cellular tissue and in which kidney-shaped space the blood vessels are found and in which we have the accumulated pus in peritonsillar abscess. The shape and location of this pharyngomaxillary space indicates why you should open your peritonsillar abscess at the point midway between the base of the uvula and the last molar tooth, where the space comes nearest the surface. The anatomic relationship between the blood vessels and this space also explains the serious hemorrhages that we frequently have in peritonsillar abscesses. As the nerves are found with the blood vessels you can readily appreciate that if this cellular tissue is infiltrated with a water solution we will have loss of pain in the removal of the tonsil.

With this review of the anatomy we are prepared to discuss the operation for the removal of the gland and without going too much into detail, would say that the aim in tonsillectomy has been to remove the gland with its capsule intact, and this has been accomplished either

(1) By taking hold of the gland with a pair of tonsil forceps and pulling the whole gland from its bed, dissecting away with sharp knives the mucous membrane and cellular tissue or

(2) By bluntly dissecting with the finger, and thereby tearing through the mucous membrane and the cellular tissue or

(3) By extracting the tonsil from its bed, incising through the mucous membrane and then passing the snare outside the capsule, thus removing the whole tonsil or

(4) By the Sluder operation.

The above procedures, or some modification of them, have been the customary methods for the removal of the tonsil.

Of the series of fifty patients, ages fourteen to forty, examined from two to three months after operation, in which some one of the above forms of surgical procedure was employed, I found deformed throats in more than 80 per cent. of the patients and not more than 20 per cent. of the patients had throats approaching the normal. In the ten patients with normal appearing throats the speaking and singing voice was perfectly natural from date of removal and they had no trouble of any kind following the operation. Of the forty remaining patients, 17 complained of speech defects for two or three weeks, 8 complained of speech and voice defects two months after operation, 2 practically lost the singing voice, while 13 said they could speak better and throats felt better after operation than before. About 5 per cent. complained of difficulty in using certain words and had nasal intonation.

The deformities following enucleation seem to follow one of two or three varieties. In the first variety the pillars on both sides seem to have disappeared, leaving a flattened surface where the tonsil formerly was and a much-narrowed opening into the nasopharynx.

In the second variety the pillars on both sides seem to have grown together, leaving but one pillar where there were formerly two, with the uvula pulled to one side or the other.

In the third variety the anterior pillar has wholly disappeared and a large amount of cicatricial tissue is deposited on the surface of the posterior pillar, altering its shape and function. In some of these cases the soft palate and uvula were pulled down to a very much lower position than normal, thus accounting for the nasal intonation complained of by some of the patients. In all the patients whose singing voice was affected the posterior pillar was very much out of the normal through the contraction of cicatricial tissue.

That you may get a better idea of the appearance of these throats I have had Mr. Deck, our medical artist, make composite drawings from a number of patients and these drawings I have the pleasure of showing you this evening. It would seem, therefore, that the question we should consider is "How to enucleate the tonsil with its capsule without incurring after-results that are unsatisfactory?" As a means to this end I have for some time been removing tonsils, both in my clinics and private work, in a way and by a procedure that I have not seen described in the books, but will endeavor to show you.

In adult patients I cocainize the surface of the tonsil with a 10 per cent. solution of cocaine and after cocainization has been accomplished I inject into the cellular tissue surrounding the capsule of the tonsil a 1½ per cent. solution of bisulphate of quinine. This makes the operation absolutely painless. In young children I use ether as a general anesthetic. The operation is done as follows:

With a tonsil tenaculum inserted as far as possible into the center of the gland, avoiding the capsule, I take hold of the bands of tissue extending from one side to the other and endeavor to invert the tonsil the same as you would invert a uterus by pulling on the cord of a retained placenta. Where the capsule is not too much contracted and where the gland has not become a solid mass of hypertrophied tissue and where the capsule is not bound down on all sides with bands of tissue left from old abscesses, on slight traction the tonsil will invert and after the same is completely inverted I pass the snare about it as shown on the chart and by slowly tightening the snare, taking from one to three minutes, the tonsil is removed without injury to the muscles, without pain, and without hemorrhage. I have employed this method during the past two years in a very large number of cases and yet am to have my first case with deformity following the procedure. After two years' experience and after familiarizing myself with the literature on the subject I am convinced that in the cases adapted for this operation, the proceeding outlined surpasses any operation heretofore known to me for the removal of tonsils.

164 West Seventy-third Street.

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## THE PATHOLOGY AND TREATMENT OF CALLOUS ULCER OF THE BLADDER.

By LEO BUERGER, M.D.,

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The very striking and remarkable result obtained recently in the treatment of two cases of callous ulcer of the bladder seems to me to be of sufficient interest to warrant reporting the cases in detail. By simple excision of the ulcers with a punch forceps through the operating cystoscope, two patients, both of whom had suffered most intense vesical

symptoms for more than a year, were completely cured.

In reviewing the literature on simple solitary ulcer of the bladder as well as what has been written on vesical ulceration in general, a striking diversity of

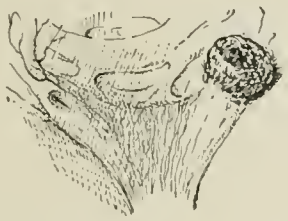

Fig. 1—Ulcer with exudate in Case 1. Cystoscopic picture.

opinion as to etiology, pathology and treatment is encountered. Indeed, a critical study of many of the published papers even arouses a suspicion of doubt as to the authenticity of the diagnosis in many of the cases. What with the larger experience gained of late years by diligent work with the cystoscope and what with the production of improved optical instruments, cystoscopists will more often be able to make a positive diagnosis of the existence of simple solitary ulcer of the bladder.

Thus it is interesting to note that Casper in his recent book on cystoscopy[1] makes no mention of operating or treating ulcers of the bladder with the cystoscope, although some thirty-five pages are devoted to the discussion of therapy through this instrument.

In the latest edition of the classical book of Nitze[2] this author refers to the condition of "simple ulcer of the bladder," but confesses to have very little experience with this lesion. In fact, he even goes so far as to throw some doubt upon the authenticity of the findings of such an authority as Fenwick. Therefore, this author at least had no operative experience with this condition.

In less than two years five cases of simple solitary ulcer of the bladder have come under my observation. Two of those recently observed belong to a type which, according to my own pathological studies, may truly be called "simple chronic callous ulcer of the bladder." It would take me too far from my theme were I to enter into a discussion of the various forms of simple solitary ulcer of the bladder and of the pathology and possible etiology. I shall therefore content myself with a consideration of the pathology and treatment of that form which may be designated as "chronic callous ulcer."

Two cases that had consulted me during the year 1911 were treated and cured by methods other than that which shall here be described. In one of these cases fulguration was successfully applied. In the other case repeated fulguration did not avail, and the ulcer finally healed under internal mercurial treatment. Neither one of these cases, however, belonged to the callous type with extensive involvement of the deeper tissues, and possibly the first one of them could have been healed by the application of caustics alone.

Where the process is deep-seated, where it has lasted for a long time, and where typical phosphatic encrustations have become deposited on the ulcerating surface with the usual train of symptoms—intense vesical tenesmus, dysuria, purulent urine and possibly contracted bladder—neither topical applications with silver nitrate nor cauterization by the fulguration method will have any beneficial effect. One of the cases in which fulguration was tried, well demonstrates the inefficacy of cautery methods in bringing about cicatrization and healing in such types of lesion.

A superficial study and cursory perusal of reported cases in the literature may give the impression that topical applications of silver nitrate can cure simple ulcer of the bladder. A critical review of the history of such cases and the cystoscopic findings will lead to the conclusion that such cases belong to the superficial variety of ulceration and that (as far as my own search in the literature goes) no case of deep-seated callous ulceration has been cured by topical application of medicaments alone.

Thus Armstrong[3] describes one case of ulceration about the size of a ten-cent piece, in a school boy 12 years of age, reporting a cure with irrigation of silver nitrate solution (1 per cent.) This ulcer was evidently not of the callous type, but a superficial defect.

Another such case is reported by Imbert[4], who, in an article entitled "Ulcères de la Vessie," purports to have cured an undoubted ulcer by irrigations of silver nitrate. He regards the case as one of simple solitary ulcer of the type described by Fenwick. There was no relation to trauma cystitis, tuberculosis or any demonstrable etiological factor. Here, too, the author was undoubtedly dealing with a simple superficial ulceration.

Those authors who have contributed most to the literature of solitary ulcers of the bladder, namely, Le Fur and Fenwick, are both emphatic in their belief that radical measures are absolutely necessary for the cure of the callous chronic variety of ulcer of the bladder. Although the work of Le Fur is based mainly on a study of the literature, the conclusions must be accepted as authoritative, for all available reports of cases up to the year 1901 had been carefully studied. This author says that in cases of simple chronic ulcer of the type under consideration, the methods of lavage and the use of silver nitrate cannot be regarded as reliable.

He quotes Albarran as saying that the solutions do not bathe the ulcers sufficiently when they are situated in certain regions of the bladder; but he also records observations of certain authors who have cured these cases with silver nitrate and lactic acid. He is strongly of the opinion that the operative methods of Nitze will prove of value as soon as methods are perfected for the purpose of applying strong solutions *in loco*, and when methods of cauterization and curettage of the ulcer have been properly devised. He says that he himself has had no experience with any of these procedures.

But when conservative treatment does not effect a cure, Le Fur recommends surgical intervention before the condition has advanced so far as to affect the general condition. Almost all other authors recommended the vaginal route in the case of

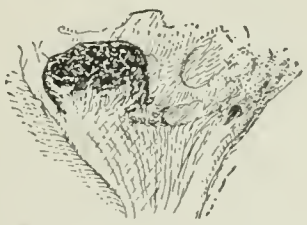

Fig. 2—Ulcer with exudate in Case II. Cystoscopic picture.

females, but the author thinks that this method does not do anything more than put the bladder at rest, and does not bring the interior of the bladder to view. Therefore the suprapubic route is preferable, in his opinion.

Hence as far as Le Fur's researches go, these ulcers do not seem to be cured by silver nitrate, and he rather doubts the efficacy of this method of treatment. Further, he sees hope in the employment of operative endovesical methods, although he

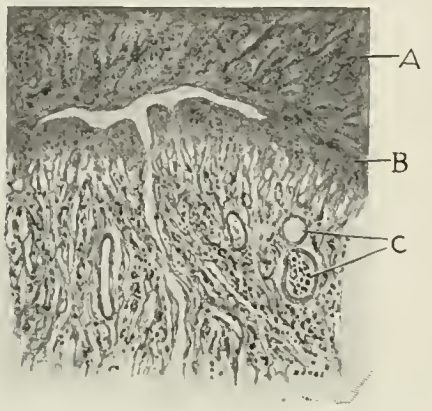


Fig. 3—Drawing showing microscopic section of callous ulcer; A, exudate on surface; B, zone of necrosis; C, inflammatory fibrotic tissue.

has had no experience with them; and finally he anticipates my own method inasmuch as he lays down the dictum that "resection (by the suprapubic route) is the best test that we have of the presence of a simple chronic ulcer, for if it fails to effect a cure, the ulcer may be regarded as of the malignant or tuberculous type."

Of all authors, perhaps Fenwick has contributed most of our knowledge of ulcer of the bladder. In his handbook of "Clinical Cystoscopy" (1904), he says that although some ulcers have healed spontaneously, it is unwise to trust to expectant methods. He believes that curettage and excision yield such good results that they should be undertaken as soon as possible.

*The Author's Treatment by Excision.*—With the operating cystoscope devised by the author and flexible forceps provided with cup-shaped jaws, it is an easy matter to attack practically any portion of the vesical mucous membrane. Difficulties are encountered only when we approach the vesical sphincter and the method in overcoming the obstacle in such cases will be described in a paper on operative cystoscopy. It will suffice here to say that the closed forceps is directed against the lesion in very much the same way as an ureteral catheter. The jaws are opened, the exudate covering the ulcer first removed with forceps, and then the bottom of the ulcer and borders are excised in as few bites as possible.

In the first of the cases which I shall report, the excision of the ulcer was performed for the purpose of diagnosis. The excision of suspected lesions in the bladder had been employed by me for a long time. The results were most gratifying, not only in cases of carcinoma of the bladder, carcinoma of the prostate, papilloma of the bladder, metastatic lesions in the bladder and follicular lesions, but also in doubtful cases of renal tuberculosis in which the pathological examination of excised portions of the suspected ureteral ostium often makes a positive diagnosis possible.[5]

A perusal of the following two histories will leave very little doubt as to the efficacy of the method of treatment, the rapidity of the cure as well as the failure of other procedures:

Case I.—E. H., forty-four years of age, married twenty-one years; seven children, was operated on, April 14, 1910, by Dr Lilienthal, for a tuberculous left kidney, the organ having been removed at that time. For a long time the patient was in the hospital in an extremely debilitated condition, and even after the nephrectomy wound had closed, severe urinary symptoms persisted. During the early part of 1912, as well as for a whole year preceding, the patient was suffering dire distress on account of urgency of micturition and desire to empty the bladder every fifteen minutes or half hour, the pain and ardor urinæ being present during the night as well as during the day.

During the first six months of the year 1912 she had received numerous treatments with the fulguration method for vesical ulceration. Although the cystoscopic findings seemed to indicate marked improvement in the vesical condition, the patient's symptoms were not at all ameliorated; so that in July, 1912, when, through the courtesy of Dr. Lilienthal, the patient was put in my charge, she complained of desire to urinate almost every half hour by night as well as by day.

In July, 1912, frequent cystoscopic examination showed the following picture: the right ureteral orifice was apparently normal, the vesical interior pale in places, congested in others, the most marked lesion being situated near the orifice of the left ureter in the posterior portion of the trigone. Here, arising from edematous angry red mucous membrane there was a grayish white tumor mass with a rather broad base and a flattened summit measuring possibly a centimeter or more in diameter. (Fig. 1). This mass appeared not unlike a necrotic papilloma, although to one who had seen lesions of this sort before, it made the unmistakable impression of a large exudate encrusted with salts, projecting from the base of a chronic ulcer. The diagnosis, therefore, was chronic indolent ulcer capped by a fungiform mass of exudate and salts.

When attempts were made to dislodge pieces of this projecting mass with a catheter, the mucous

Fig. 4—Photomicrograph of margin of ulcer; on the left, inflamed degenerate and hypertrophied mucous membrane; on the right, vascular inflammatory tissue.*

membrane bled profusely and it was impossible to separate a sufficient amount of it to bring into view the left ureteral orifice.

*I wish to thank Dr. F. S. Mandlebaum, Pathologist, Mt. Sinai Hospital, for the preparation of the photomicrograph.

During July and the early part of August, 1912, three treatments with the fulguration method were given without any improvement in the symptoms. On August 23 the whitish mass was still present with considerable edema and swelling in the juxtasphincteric portion of the trigone, particularly in the neighborhood of the left ureter and left half of the trigone, and the patient considered herself unimproved. A final attempt was made on August 23 with the fulguration method to thoroughly cauterize the affected area, several small portions having been previously detached by catheter and sent to the laboratory for histological examination and injection into guinea pigs.

The histological examination of the detached exudate showed the absence of any recognizable tissue and the presence of merely an amorphous mass stained deeply with hematoxylin—evidently an exudate containing lime deposits.

On August 27, 1912, some of this exudate was inoculated into guinea pigs and five weeks later the animals were killed, there being no evidence of tuberculosis.

The cystoscopic findings on September 23 did not vary very much from those previously described. The same edema and swelling of the distal portion of the trigone and the same tumor-like mass of exudate were found. Besides this, the infero lateral aspect of the right side of the juxtasphincteric region presented a number of follicular hypertrophies.

A month had elapsed since the last cautery treatment, with no improvement in the local condition and no improvement in the symptoms. Therefore through a period of three months, the local condition had not appreciably changed, in spite of repeated cauterization of the affected area.

*Excision of the Ulcer.*—In order to determine definitely by pathological examination of the affected area, whether we were dealing here with a tuberculous ulcer or not, it was decided to punch out not only the projecting mass of necrotic tissue, but also to remove as completely as possible the base of the ulcer. With the operating cystoscope and the largest cup-shaped punch forceps, it was a relatively easy matter on October 28, 1912, to remove the exudate completely as well as the floor and margin of the ulcer. A rather wide excision was made in order to obtain ample material for histological investigation. Immediately after the operation a firm coagulum formed over the affected area.

One week after the removal of the specimen from the bladder (Nov. 4) another cystoscopic examination was made. To our surprise, there was a marked improvement in the local condition, there being only a slightly hyperemic spot visible at the site of the former lesion. The patient, too, was emphatic in her statement as to the improvement in her general condition. The frequency of urination had diminished. She felt a great deal more comfortable and the act was no longer accompanied by pain. It was evident that the ulcerated area was now in the process of repair.

On November 11 the patient was again examined, and to our amazement the affected area was replaced by intact mucous membrane, somewhat paler than the neighboring mucosa, showing vessels radiating toward the site of the lesion. The picture was typical of that of a healed vesical ulceration. Corresponding to the change in the local condition, the patient's symptoms had almost disappeared, urination taking place every two or three hours during the day, every four to six hours during the night. The vesical ulceration was therefore regarded as completely cured.

On December 21, 1912, she was able to hold her urine for four hours and had to void only once a night. Vesical symptoms had completely disappeared and she considered herself cured. The catheterized specimen of urine was absolutely clear, and on microscopic examination of centrifuged specimens, only a very few pus cells could be detected.

*Summary.*—We were therefore dealing here with a case of intense vesical symptoms due to the presence of a chronic simple callous ulcer. This ulcer was not tuberculous and the etiology of the process could not be ascertained. However, prompt relief was obtained after excision through the operating cystoscope.

Case II.—Mrs. B. S., twenty-four years of age, married; three children, was referred to me by Dr. Kaufman on November 21, 1912, because of an intractable cystitis, severe pain on mucturition and ardor urinæ.

She had had three labors, the last pregnancy having terminated on the 19th of May, 1912. Her bladder symptoms began in November, 1911, about a year preceding, when she noted that she had to void more frequently than ever before, and that the act of urination was accompanied with burning and pain. At first she paid little attention to these symptoms until they became so severe toward the end of her pregnancy that she sought the advice of a physician who prescribed internal medication. After her confinement in May, 1912, the symptoms did not abate, but gradually became more severe, so that she had to urinate every hour or less during the day and frequently during the night. In August, 1912, about nine months after the onset of her illness, she sought the advice of Dr. K., who found that the urine contained a large amount of pus and some blood. She remained under treatment for almost four months, receiving frequent vesical irrigation with silver nitrate without improvement. The dysuria, painful micturition, and increased frequency persisted, so that finally she was compelled to void as often as every fifteen or thirty minutes during the day and every hour during the night. At times the urine seemed to contain clots of blood. Lately, the pain was so severe that she would "double up" during the act of micturition.

On November 21, 1912 cystoscopic examination was made. The whole trigone was markedly inflamed, the changes on the right side being more intense than on the left. The left ureter could be detected as a markedly swollen orifice imbedded in edematous mucous membrane. Not far removed from the left orifice occupying the middle and right cornu of the trigone there was a large whitish polypoid mass of exudate, the surface of which presented areas of brownish and blackish discoloration giving the impression of a tumor mass about the size of a hickory nut (Fig. 2). The right ureteral orifice could not be discerned, it being evidently hidden by the mass. Far back in the bas fond, situated somewhat to the right and the median line, there was a superficial defect in the mucous membrane, and not far removed from this in the posterior wall, another smaller abrasion. The rest of the bladder appeared to be pale and almost devoid of changes. The presumptive diagnosis after this examination was chronic ulcer involving the region of the right ureter and trigone, with intense

trigonitis, cystitis with some superficial defects and possibly right renal tuberculosis.

The urine contained a large amount of pus, numerous red blood cells, and cultures showed *Staphylococcus albus*. No tubercle bacilli could be found.

On December 6 she was again examined (without general anesthesia) the vesical changes being very much the same as those noticed at the last examination. Beside the cystitis which involved particularly the floor of the bladder, there were patchy areas in the right lateral wall with a superficial defect far back in the postero lateral wall. The left ureter was plainly visible, imbedded in swollen mucous membrane, but the region of the right orifice was occupied by a necrotic polypoid tumor-like mass not unlike that seen in Case I. A catheter was easily introduced into the left ureter, and then a second catheter blindly introduced in the neighborhood of the necrotic mass, the catheter slipping easily into the right ureter.

Most striking was the intense pain experienced by the patient when the catheter touched the bladder wall, indicating extreme irritability of the trigone.

Clear urine was obtained from both kidneys, the right side excreting 1.7 per cent. urea, the centrifuged specimen containing a few epithelial cells and a few white blood cells. The left ureteral specimens contained 2 per cent. urea, microscopic examination showing a very few red blood cells. Both specimens contained a very faint trace of albumin. The cultures from both sides were sterile. Indigocarmine appeared on both sides within fifteen minutes, indicating adequately functionating kidney.

The findings at this cystoscopy, therefore, were the absence of renal involvement, the presence of a chronic ulcer in front of the right ureteral orifice and cystitis with an area of erosion.

On December 8 a catheterized bladder specimen again showed numerous staphylococci (*Staphylococcus albus*) and an unidentified gram positive bacillus. No tubercle bacilli were found. A twenty-four-hour specimen also proved negative for tubercle bacilli.

*Excision of the Ulcer.*—With the diagnosis of chronic ulcer covered by a tumor-like exudate now well established, and with the striking curative result obtained in the previous case in mind, it was determined to excise the whole ulcer area and the polypoid mass, by means of the punch forceps through the operating cystoscope. Therefore, on December 9 the whitish polypoid mass was completely removed and the base of the ulcer punched out, both soft and hard pieces of tissue being obtained. The margins of the ulcer and a fairly large firm fibrous piece (undoubtedly representing the bottom of the ulcer) were identified both macroscopically and microscopically. All of these pieces were sent to the pathological laboratory for histological examination.

On the day following this procedure the patient already gave evidences of improvement as far as the urinary symptoms were concerned. Three days later the improvement was already marked, the patient being able to hold 10 oz. of urine without trouble. The urine obtained by catheter was almost clear, contained a few red blood cells and a few white blood cells.

On December 19, ten days after the excision of the ulcer, cystoscopic examination showed a complete absence of the ulcer. The right ureter was now distinctly visible, the trigone just in front of it being occupied by several small ecchymoses. The mucous membrane was swollen and the ulcer evidently in a process of rapid repair. The catheterized specimen of urine was perfectly clear and the patient regarded herself "well," voiding only three times during the day and not at all at night.

On January 3, 1913, twenty-five days after the excision of the ulcer, the patient reported her condition as follows: urination every five hours during the day and not at all during the night. There are absolutely no vesical symptoms.

Cystoscopy, January 10, 1913, revealed a practically normal bladder, there being no vestige of the ulcerated area. Pale mucous membrane in front of the right ureteral orifice was the sole indication of the former lesion. The patient considered herself "cured."

*Pathology of the Ulcer in Case I.*—The tissue removed in the first case did not differ materially from that obtained in Case II. A reference to Fig. 3 will show the general topography of this ulcer, the superficial exudate and deposit, the necrosis, the underlying inflammatory connective tissue. There was marked fibrosis at the floor of the ulcer and the periphery was made up of edematous vascular stroma, covered by swollen disintegrating mucous membrane. Except for the fact that here intense angiomatous formation was less marked than in the other case, and that the stroma was more edematous and cellular, no striking variation from the lesion in Case II could be found.

*Pathology of the Ulcer in Case II.*—Macroscopically, the excised tissue was composed of grayish white necrotic masses, soft tissue evidently containing mucous membrane, a few shreds undoubtedly from the ulcer itself and one large firm fibrous piece representing the bottom of the ulcer.

The necrotic material was composed of amorphous material, staining deeply with hematoxylin, together with aggregations of detritus and cellular elements, the component parts of a purulent exudate. The cellular elements were for the most part polynuclear leucocytes, a few swollen epithelial cells and some round cells.

Microscopic examination of those pieces, which evidently represented mucous membrane excised from the margin of the ulcer, revealed the following picture: (Fig. 4.) The mucous membrane is attenuated in many places whereas elsewhere it is apparently hypertrophied. Under the epithelium, the submucosa is seen to be composed for the most part of a multitude of fine vessels present in such large numbers as almost to suggest an angioma. Here and there the vessels are practically in contact, but, for the most part, they are separated by aggregations of round and plasma cells, and a scant number of polynuclear leucocytes. Where these vessels are most numerous, and where the cellular elements are in greatest abundance, there the epithelium seems to be most attenuated and to have undergone the greatest amount of degeneration. Thus the cells are swollen and distorted, and all evidences of a basal membrane are absent. Deeper in the tissue, the capillary vessels disappear and give way to larger dilated blood spaces with very thin walls, these spaces being encroached upon by aggregations of plasma cells and migrating leucocytes. Some of these blood spaces contain large numbers of leucocytes and evidences of an active inflammatory process, whereas others are only filled with blood.

Those portions of the mucous membrane which are seemingly hypertrophied present the mixed picture of thickened mucous membrane, exaggeration

of the crypts together with simultaneous destruction and disintegration of the epithelial clefts. Not only the surface epithelium, but also that which dips deep into the tissues is the seat of an intense inflammatory process, the crypts being filled with polynuclear leucocytes, swollen and disintegrating epithelial cells.

Therefore, the tissue in the neighborhood of the ulcer presents the picture of a chronic inflammatory process with enormous proliferation of vessels coupled with destruction of epithelium as well as hypertrophy of the epithelial nests.

Those sections which contain tissue both from the floor and from the margin of the ulcer may be described as presenting the following different types of change: First, the amorphous phosphatic and purulent exudate; second, the inflammatory tissue beneath this, and, third, the vascular tissue at the margin of the ulcer.

The same amorphous exudate previously described as being admixed with pus cells and detritus, can be seen firmly attached to the superficial layers of the bottom of the ulcer, the salts penetrating deeply into the tissues. Just beneath this deposit there is evident necrosis of tissue, and still deeper a layer of young connective tissue. Here, in the bottom of the ulcer, the capillaries are not so prominent as in the surrounding angiomatous tissue for the reason that this region has given way to the formation of dense fibrous tissue which has caused compression and obliteration of the vessels. Near the surface, however, of the ulcer, a few dilated capillaries with swollen endothelial cells containing numerous leucocytes are rather conspicuous, their presence being important in accounting for the tendency of these ulcers to bleed. The deeper layers are marked in places by the formation of fibrous tissue, although this is not so dense as to exclude small collections of plasma cells and leucocytes. This picture can be traced into the border of the ulcer, where a gradual transition into intensely vascular tissue occurs.

*Conclusions:*

1. Clinical, cystoscopic and pathological studies in two cases of vesical ulceration have conclusively shown that simple callous ulcer of the bladder can and does exist.

2. The clinical symptoms of this condition are intense dysuria, urgency, frequency of micturition with sanguineous and purulent urine. The manifestations become progressively more marked and take a chronic course.

3. The chronicity of this disease and the progressive impairment of vesical capacity speak strongly for the view that chronic cystitis and contracted bladder are often the sequelæ and outcome of solitary ulceration.

4. The region of the trigone seems to be the favorite site for the chronic indurated type of ulceration.

5. Although designated as simple, and often as solitary ulcer of the bladder, this condition may be accompanied by one or more superficial erosions of the mucous membrane, elsewhere in the bladder interior, lesions which are undoubtedly secondary to the intense cystitis accompanying the ulcer.

6. The most effective and rapid method of curing the disease as well as the simplest procedure is the excision of the ulcerated area by means of the author's operating cystoscope and punch forceps.

7. Less radical measures of treatment, such as cauterization with the actual cautery or fulguration, and silver nitrate irrigation are of no avail in this type of ulcer.

8. Histological examination in two cases has shown that the pathology of this condition is rather characteristic, there being a superficial deposit of urinary salts, a layer of necrosis and ulceration, and a stratum of newly formed connective tissue with active evidences of inflammation. The margin of the ulcer shows intensely vascular inflamed mucous membrane and submucosa.

9. In every case of chronic cystitis, particularly in women, where dysuria, urgency, and frequency of micturition are marked, a careful search should be made for this form of ulcer, for if it be present, it is more than likely that chronic cystitis, irritable and contracted bladder are secondary, and may be cured by the method advocated.

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# SEXUAL DISORDERS ASSOCIATED WITH DISEASE OF THE NERVOUS SYSTEM;

## AND REMARKS ON PRESENT DAY SEXUAL PROBLEMS.*

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We must all admit that the scientific study of the sexual sphere in the human economy has not been neglected. Not for a moment would I belittle its significance and importance. Of late, it is being dwelt upon with greater activity than ever, often, perhaps, in an ultrascientific manner, but always in an altruistic spirit. The public agitation resulting from the labors emanating from various kindred sources is truly remarkable and far-reaching. The plans elaborated for the awakening and enlightenment of the community regarding the anatomy and physiology of the human generative apparatus and the mechanism of reproduction; the prevention of conception; the suppression or control of prostitution; the prevention of venereal diseases, and the newer science of Eugenics are exciting popular interest.

Let me digress for a moment to mention incidentally how such topics often appeal to the masses and even to the average intelligent layman, unless carefully and judiciously presented. Twenty years ago, the first English translation of Krafft-Ebing's book entitled "Psychopathia Sexualis" was published in this country. It dealt with all generally recognized and unsuspected forms of sexual perversion, and had a larger sale among and was perused with more avidity by the laity than by earnest members of the medical profession. Of course, the majority of readers through lack of proper training failed to appreciate the true scientific value and spirit of the work, but were attracted through their morbid desire to indulge in so-called pornographic literature, and they discussed the subject accordingly *ad nauseam*.

In a recent book (1909) on "The Sexual Life of

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our Time," by Iwan Bloch of Berlin, the American publishers state that the sale of the English translation shall be limited to the members of the legal and medical professions. The same was said of Krafft-Ebing's work, which was sold, however, without discrimination.

Let us always bear in mind, that, in common life, the rôle of the sex instinct is of fundamental importance. It is the only human instinct that can be compared with the instinct of self-preservation in respect to the profundity of its influence on the conduct of man.

Within the last decade, the sexual element in disorders of the nervous system has received more attention than heretofore. Thus, we have the advent of Freud's doctrine of psychoanalysis in the investigation of the psychoneuroses. In this work, the sexual factor in mental anomalies such as obsessions, phobias, anxiety, and the like, has been brought forward and emphasized as the fundamental and essential feature. He ascribes these conditions to "repressed psychical traumata" of sexual origin, arising during childhood or youth. Among Freud's numerous critics and opponents are many distinguished neurologists both at home and abroad, who, while admitting the value of his studies in psychology, are unwilling to accept many of his bizarre sexual theories.

The public instruction of adults and even school children in regard to sexual matters is a more recent innovation. It has seemed to me that the presentation of such information should be undertaken only in the most tactful and discriminating manner by specially trained physicians. It is unnecessary to teach more than can be properly assimilated. Whatever is taught, we must assure ourselves that it is not misunderstood. "More knowledge on the subject of sex than is required tends to a morbidity of imagination."

As a rule, the more thorough the elucidation the greater the misinterpretation. The dormant sexual instinct may thus be aroused in morbidly susceptible individuals, new mental complexes of a sexual character being formed, which may ultimately develop into various psychoneuroses.

In the case of children, however, individualization is absolutely essential as a precautionary measure against psychosexual curiosity and its baneful results. Hence, such teaching is impracticable and inexpedient in the public class-room, and cannot be safely relegated to pedagogical routine. Furthermore, the imparting of such knowledge to children should be the prerogative of instructed parents whenever possible.

Finally, the State has taken cognizance of the seriousness of sexual problems. Thus, we have recent legislative enactment legalizing the sterilization of male criminals and defectives, for the purpose of preventing their further propagation. This laudable idea has been carried out with such a degree of technical refinement, that only their *potentia generandi* is surgically obliterated, while their *potentia coeundi* is left unimpaired.

It has therefore occurred to me that under such conditions these individuals may ultimately, not only form a peculiar class by themselves, creating a new type of public prostitute, with an increasing demand for their innocuous sexual activity (so far as impregnation is concerned), but also serve as an additional element in the dissemination of venereal disease. Furthermore, such an operation would not prevent seduction or rape. We must also bear in mind that this legalized sterilization process would not deter the criminal from further depredations, which are so often fundamentally stimulated and encouraged by the incentive to gratify the mercenary demands of the woman with whom he is sexually associated. Besides, the *potentia generandi* can be restored by another simple surgical operation. Hence, would it not be better and more desirable to destroy completely all sexual power in such persons?

It has seemed to me, after careful investigation, that there is much misdirected energy expended in the public exploitation of what is termed "The Sexual Question." One of our most energetic and vehement preachers on sexual subjects has frequently stated that when such matters are publicly spoken of "a spade should be called a spade." In this way he thinks he can more successfully teach the public by dispensing with euphemistic language. In my opinion, such a plan should be materially modified and adapted to the character of the audience.

The awakening of the crude and undeveloped minds of young boys and girls by well-meant but unsuitable instruction in the physiology of human procreation and reproduction has often resulted in sexual precocity and an ignorant and wilful disregard of social conventionalities both in conversation and manner. It is a notorious and deplorable fact that so many of the popular novels of the present day, together with the stage, pander in such a large measure to the prurient tastes of the multitude, thus promoting the spread of morbid sexual proclivities.

Notwithstanding these and other antagonistic influences which are continually at work neutralizing the beneficial effects of all forms of uplifting methods, it may be safely said that the inhibition of gross sexual ideas, and the refinement, guidance, and control of the sexual instinct are still among the most significant evidences of advancing civilization.

In this paper another side of the question will be dealt with, namely, "Sexual Disorders Associated with Disease of the Nervous System."

From the standpoint of clinical neurology there is much to be said on this topic, but I shall refer only to some of the more frequent conditions that confront us. Excluding local affections of the genitourinary apparatus, chronic nephritis, diabetes, etc., symptoms referable to the bladder or sexual organs, are usually due to functional or organic disorders of the nervous system. Hence, in the absence of indications of local disease, all patients with genitourinary symptoms should be subjected to a neurological examination. It should always be borne in mind, that in neuropathic individuals slight sensory irritations are disproportionately magnified, this being particularly the case when they originate in the sexual organs.

When we are consulted by young men with all manner of neurasthenic and psychasthenic symptoms, and masturbation is admitted, it is our duty in the first place to instruct them regarding the dangers attendant upon continuance of the habit. In impressionable individuals one should be extremely cautious and not overdo the matter by dwelling upon the subject and exaggerating its seriousness. In some cases such a course will often increase the apprehension, for such patients usually have false notions already firmly established. To still further alarm them is a mistaken policy, often fraught with danger to their mentality.

It is not unusual for older unmarried neuropaths

to erroneously ascribe their symptoms to the remote results of masturbation practised during early youth. Their preposterous phobias are sometimes almost inconceivable. In quite a number of my patients over 40 years of age who were troubled by various obsessions, insomnia, etc., it required several months of treatment to successfully overcome the fixed and dominant idea that all of their symptoms were caused by masturbation discontinued before their sixteenth year.

In my experience, masturbation is more commonly a cause than a consequence of sexual neurasthenia. Occasional nocturnal pollution in psychoneurotic individuals is in itself of no serious moment. It is the misinterpretation of its significance, and the apprehension engendered and fostered by the perusal of quack literature, etc., that act as important contributory elements in the production and continuance of the symptoms.

The typical sexual neurasthenic is diffident and seclusive, exhibiting a lack of energy, and incapacity for sustained effort, his morbid introspection being colored by dominant thoughts of impending "lost manhood." He is on the borderland of insanity. It has been wisely said that "probably more unhappiness is caused by sexual impotence than by any other disease that affects mankind."

All experienced observers realize that in married life sexual impotence and sexual perversion are matters of momentous sociological and forensic importance. That impotence is often the secret groundwork of a seemingly mysterious origin of marital infelicity leading to legal separation or divorce is well known. On the other hand, the slightest disturbance or diminution of sexual power promptly demoralizes the worshiper of Venus and Priapus, and is soon followed by depressing thoughts portending impotency. This is particularly the case with bon-vivants, who commonly indulge in excesses of all kinds, and are more or less of a neurasthenic temperament. Not long ago a retired merchant seventy-eight years of age and of good physique and general health was sent to me for examination. For several months he had lost interest in his surroundings and suffered from mental depression, morbid anxiety and sleeplessness. It was soon discovered that the dominant obsession in this case was the fear of sexual impotence, which he said was the greatest misfortune that could befall him, even at his age. After several psychotherapeutic explanations he became reconciled to his physiological loss of function, and being resigned to the inevitable, he soon made a complete recovery from his mental symptoms.

Impotence in varying degree is at times an early manifestation of tabes (which is the commonest organic disease of the nervous system in which impotence is a familiar symptom). In many instances it is considered by the patient merely as one of the less important and unobtrusive phenomena. Nevertheless, the atypical tabetic may consult the physician in regard to diminution or loss of sexual power. Persistent attacks of priapism have also been observed in tabetics. It is just in these atypical forms of tabes wherein lieth a pitfall for the general practitioner as well as the genitourinary surgeon. It is a common occurrence for such patients to be treated for supposed spasmodic urethral stricture, or the organ stimulated by various measures, without recognition of the underlying cause. Incidentally, it may be mentioned that the restoration of the sexual activity in tabetics is not always advisable.

Owing to the prevalent traditional notion that incoordination in standing and walking is the pathognomonic symptom in all cases of tabes, its absence has often misled the physician into hastily excluding the disease without further investigation. As you all know, the abolition of the knee-jerk, and the lost reaction of the pupils to light, are among the characteristics and important objective signs. Only a few of the cardinal symptoms of the disease may be present, yet they may prove sufficient for a correct diagnosis. To the casual or ordinary observer, it would seem that testing for the knee-jerk and reaction of the pupils is a simple matter and requires no special training. But this is not the case. A methodical plan is necessary, in order to avoid erroneous deductions. Many years of observation and association with physicians have impressed me with the fact that these examinations are often either inaccurately or carelessly performed. On the one hand, is the danger of the erroneous assumption that the knee-jerk is abolished, and on the other, that the pupillary reaction to light is preserved.

Sexual excesses and congressus interruptus, or withdrawal (properly termed onanism), are common causes of impotence. The habitual practice of the latter at times produces a clinical picture simulating spastic paraplegia. Such patients have urethral hyperesthesia, aching and paresthesia with spasticity affecting both lower extremities, exaggerated knee-jerks, pseudo foot-clonus and general tremulousness, etc. Complete abstinence from sexual excitement and intercourse and general tonic treatment usually result in recovery within six or eight months.

It is very difficult, nay, almost impossible, to define accurately what may be considered excess in venery. Copulation for propagation may have its limitations so far as frequency of the act is concerned, but the absence of *potentia generandi*, or sterility in the wife is not a satisfactory excuse for over-indulgence. Just as in other matters, what might be considered moderation in one individual may be excess in another. It may be safely said, however, that sexual intercourse is excessive when it is practised with effort or followed by fatigue or exhaustion.

The claim that continence is a frequent or common cause of impotence, or that it is incompatible with good health, has not been satisfactorily proven. The idea is of foreign birth, having originated in European cities where sexual gratification flourishes as a fine art, and prostitution is officially recognized. Such a doctrine is not only fallacious, but its promulgation in this country is obviously dangerous.

The condition known as psychical impotence is of absorbing interest. As an independent affection, *i.e.* without any other involvement of the nervous system it is extremely rare. It may be classified in the same category with sexual hypochondriasis and neurasthenia.

I well remember the case of a healthy and vigorous young man brought to me by his father-in-law in the early period of my practice. In attempting the sexual consummation of his marriage he was repulsed by his wife who dreaded the ordeal. This was repeated many times. Several months later, when she was willing and anxious to submit, his *potentia coeundi* had entirely disappeared. He remained in this condition for several years. In another case seen about a year ago, a man forty years of age had for some time indulged in an extramatrimonial alliance. The woman then married a man of sixty-five, and she told the patient that her

husband was as strong sexually as a man of thirty. Subsequently, he endeavored several times to prove his superior or equal capability, but invariably found himself absolutely impotent through fear of failure. He has since remained impotent so far as this person is concerned, but continues normally his legitimate relations at home. Some of you may recall the classical case reported many years ago by Legrand du Saulle. The husband had never succeeded in coitus with his wife since marriage. After several years of unsuccessful treatment it was discovered that during his betrothal he had been in the habit of having sexual intercourse with his fiancée while she was completely dressed. He was then directed to undertake the act under similar circumstances and this plan proved successful.

Of course many other instances, possibly more remarkable, could be cited if time permitted. These histories have been briefly narrated for the purpose of illustrating and emphasizing the fact that the psychogenetic origin of this form of impotence varies with the mental attitude of the patient, being modified according to the diverse circumstances of association and environment.

Shock, fear, aversion, apprehension, worry, lack of self-confidence, mental abstraction, and superstition are the chief factors in the causation of psychical impotence.

In order to successfully manage patients with sexual disorders of nervous origin it is always necessary to closely investigate their status as to personal habits and domestic relations. In some cases, psychoanalytic methods often prove valuable in ascertaining the initial and persistent cause. The results of treatment by untrained and unskilled practitioners are usually unsatisfactory and at times disastrous. These supersensitive individuals find much relief in unburdening their mind to a physician of receptive temperament. Suitable psychotherapy is the essential feature. While other therapeutic procedures are indispensable, they must be considered of secondary importance. In impotency frequent repetition in attempts at coitus, or any form of sexual excitement, only increases the difficulty. Rest for several months is necessary.

Various ingenious mechanical devices have been utilized for the purpose of producing and maintaining erections in the impotent, but they are anything but curative.

In conclusion, permit me to state that the management of patients with neurotic sexual disorders requires discriminating judgment and much common sense. Haste and thoughtlessness in the prescription of so-called aphrodisiac drugs cannot be too strongly condemned. In the majority of cases such remedies are absolutely worthless. Unnecessary and meddlesome local treatment, in the presence of unrecognized organic disease of the central nervous system, can be avoided only by the acquisition and application of a useful amount of training in neurological diagnosis.

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**Torticollis Following "Mumps" and Associated with Bilateral Cervical Ribs.**—L. H. McGavin reports the case of a girl, aged eleven, who three months previously had an attack of "mumps," which lasted a fortnight and caused much swelling, not only over both parotids but "round the back of the neck." During resolution the patient's head began to assume its present position, the face being tilted upwards and rotated to the left. A skiagram showed a well-marked but short cervical rib on both sides; these, however, give rise to no symptoms.—*Proceedings of the Royal Society of Medicine.*

# THE ACCURACY OF SYSTOLIC BLOOD-PRESSURE DETERMINATIONS BY VARIOUS METHODS, AND THE CLINICAL USE OF THE DIASTOLIC PRESSURE.

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The auscultatory method of blood-pressure determination was introduced by Korotkow in 1905. He found that by placing a stethoscope over the brachial artery distal to the cuff of the blood-pressure apparatus a series of sounds could be heard as the pressure was released, and the pulse came through below. The succession of sounds has been divided into five phases: (1) A clear, tapping sound, which is agreed by all authors as indicating the systolic pressure; (2) a murmur makes its appearance, and either accompanies or replaces the tapping sound; (3) the murmur disappears and a clear sound persists; (4) the clear sound becomes dull. Warfield proves experimentally, and so far as I can judge conclusively, that the fourth phase corresponds to the diastolic pressure; (5) all sounds suddenly disappear.

These phases can in most cases be heard, and are usually well defined. The ordinary bell stethoscope is a better instrument for hearing them than the special instrument manufactured by the instrument houses for the purpose. In many individuals the various phases can not be sharply differentiated. The first phase, however, is always distinct.

Goodman and Howell believe that the length of the various phases measured in millimeters of mercury has some significance in judging the functional capacity of the heart. Dr. L. S. Milne and the writer have been interested in following their observations on a series of cases at the Bell Memorial Hospital. We have also tried to come to some conclusion as to the usefulness of diastolic pressure or pulse pressure in clinical practice, using the beginning of the fourth phase to indicate diastolic pressure. The number of cases we have observed has been too small up to the present time to have arrived at any conclusion. But in the course of them the writer has been interested in comparing the systolic pressure determined by the old digital method with the systolic pressure determined by the auscultatory method. It was thought that if it developed that there was a sufficient discrepancy in any large number of cases it might be feasible to recommend that one method be discarded for the other. A comparative set of readings was made upon one hundred cases; a mercury manometer and an ordinary bell-shaped stethoscope were used in each instance. Two possible sources of error could have entered into the calculations. One, that under the excitement of the manipulation the blood pressure of the patient would actually change, was partly obviated by changing the order of the readings so that on some patients the digital, on some patients the auscultatory reading was taken first. As a matter of fact, the readings were so close together that this error was ruled out in the face of the results. The other was the question of the personal equation—the fact that as one's opinions begin to crystallize about any procedure, that mental attitude is likely to influence the results. This was neutralized by the help of other individuals who took one reading while I took the other.

The average difference in the readings of 100 cases was 6.7 points-millimeters of mercury. The digital reading was lower than the auscultatory in 71 per cent. of the cases; the auscultatory was lower in 9 per cent. of the cases; the two readings are recorded the same in the remaining 21 per cent.—that is, there was certainly not more actual difference than one or two millimeters of mercury. Some readings showed a margin of difference as wide as 17, 14, 12, and one of 20 millimeters. These occurred in young subjects, not in the high readings.

A record of an average ten cases—11-20 in the series—is as follows:

| No. | Sex | Age | Note | Digital Reading | Auscultatory Reading | Diastolic Reading |
|---|---|---|---|---|---|---|
| 1 | M | 59 | Cardio vascular—renal cases Aortic regurgitation | 190 | 192 | 120 |
| 2 | M | 30 | Dyspepsia, Neurasthenia | 170 | 176 | 86 |
| 3 | F | 40 | Colloid goiter | 122 | 122 | 90 |
| 4 | M | 32 | Normal | 118 | 121 | 92 |
| 5 | M | 29 | Normal | 132 | 132 | 108 |
| 6 | F | 38 | Exophthalmic goiter | 144 | 150 | 100 |
| 7 | M | 26 | Normal | 131 | 140 | 108 |
| 8 | M | 43 | Fibroid phthisis | 132 | 138 | 117 |
| 9 | M | 19 | Asthma, possible pulmonary tuberculosis | 112 | 109 | 74 |
| 10 | F | 31 | Pleural effusion | 118 | 117 | 90 |

On the whole, then, it can hardly be said that the margin of difference between the two methods is large enough to be of any great moment. It is hardly conceivable that it could make much difference in any diagnostic puzzle. It is not necessary for life insurance companies to demand from their examiner anything but an ordinary digital reading. And this for at least one reason besides the actual small number of millimeters of difference in the two readings. That reason is that our interpretation of blood-pressure data is based upon readings made by the digital method. If we accepted the auscultatory method it might simply mean that we would put our upper and lower limits of the normal ten millimeters higher.

At the same time, the writer has found that with the increase of his experience he is coming to use the auscultatory method more and more. There are many cases in which the pulse is hard to feel after coming through a compression above. In these cases I have noticed that the mercury column begins to oscillate with the pulse beat some time before any full pulse can be felt. In these cases I am convinced the auscultatory method is nearer the accurate reading by the present standards of calculation.

In all these cases I have taken the reading of diastolic blood pressure, using the fourth phase to indicate this. While this particular series is too small to admit of judgment, I have not been impressed with its usefulness from the clinical standpoint. I cannot see that it tells us anything that we could not learn easier by a simpler method.

1025 Rialto Building.

**Bilateral Congenital Displacement of the Upper Ends of the Radius and Ulna.**—L. H. McGavin reports the case of a female child, aged 8 months, in which the deformity was noticed a fortnight after birth. Both arms were rotated internally, so that the thumbs pointed backward, and the palmar surfaces of the hands faced outward. Supination was possible only through a quarter of a circle with the elbows flexed. A skiagram showed transposition of the heads of the radius and ulna; the radius articulating with the trochlea and the ulna with the capitellum. There was no history of deformity in any of the other members of the family.—*Proceedings of the Royal Society of Medicine*

## Medicolegal Notes.

**Opinion Evidence.**—In a murder case a physician testifying for the State was permitted to say that the blow which caused the wound upon the deceased's head was a "severe" one. The witness had shown that he had been called to the relief of the deceased immediately after the injury, and that an examination disclosed a very serious fracture of the skull, which was verified by the post-mortem investigation. The fact that the blow must have been a severe one would be apparent to every juror of intelligence and the statement could not be prejudicial to the defendant.

The witness was also asked his opinion as to the character of the weapon or club that was used to produce the fracture found in the deceased's skull. He replied, "I believe a blunt or rounded, fairly heavy object—possibly like a whiffletree. That is the most common shape." It was held that the testimony was competent, the witness not having testified that a whiffletree had been used, but merely having used that instrument as an illustration.—State v. Baker, Iowa Supreme Court, 135 N. W., 1097.

**Implied Authority of Agent, etc., to Employ Physician.**—In an action for medical services it appeared that the minor son of the defendant had general permission from his father to operate his father's automobile. While using the machine for his own pleasure he, accidentally and without fault, ran over and injured a pedestrian, who was taken to a hospital. The superintendent telephoned for one of the plaintiffs, and he was driven to the hospital by the defendant's son, who informed him of the occurrence, and while at the hospital requested the doctor to give the injured boy every attention to save his life He did not attempt to contract on behalf of the defendant; nor did the doctors communicate with the defendant at any time before the completion of their services. When the injured boy was about to be discharged from the hospital the superintendent informed the defendant that the boy's mother was poor and would probably never be able to pay for the hospital charges, and requested the defendant to do something towards paying the bill. The defendant paid the hospital bill, informing the superintendent that he was not responsible. He then received a bill from the plaintiffs for their services. He had heard that doctors were attending the injured boy at the hospital, but did not know they were making a claim against him until he received the bill, which he refused to pay. It was held that the son was without authority to bind the father to pay the physicians. In order to authorize an employee to bind the employer to pay for physicians in attendance upon persons injured by the negligence of such servants the employment must have been of such nature that the act of the servant is reasonably within its scope. The cases of general superintendents of railway companies, general managers or agents, etc., go largely upon the corporate character of the employer, the usual practice pursued, and the great exigency which arises in railroad disasters, and the dangerous character of the business. A mere chauffeur in a town where the employer is known and can be readily reached by telephone, or by other speedy and certain means of communication, would not ordinarily possess such authority. Neither would an infant son using his father's automobile under like circumstances. Moreover, the stipulation entered into upon the trial that the boy in charge of the automobile was not to blame for the injuries cut away the groundwork from the implied authority raised from the desire to save the employer from damages caused by the negligence of the employee. Judgment for the plaintiffs was therefore reversed.—Habhegger v. King, Wisconsin Supreme Court, 135 N. W., 166.

**Liability of Corporation for Physician's Services.**—A physician was called to attend a boy who had been injured while working in a mill. He continued to attend the boy professionally for about two months and sent his bill to the company owning the mill. In an action for the amount of it the evidence showed that the company's bookkeeper had represented to the physician that the company would be responsible for his services and that this representation was known to the company's officers, and a reply letter written to the physician on receipt of his bill by the bookkeeper under the direction of the company's managing officer. It was held that the company was liable for the services, notwithstanding that the physician's employment had not been authorized at a meeting of its board of directors; the circumstances known to the company's officers being such as justified the physician in believing that the company would pay for his services.—Taylor v. C. M. Robertson Co., Connecticut Supreme Court of Errors, 83 Atl. 534.

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## RACIAL PSYCHOPATHOLOGY.

It is beyond the skill of man to say when or where the present-day spirit of iconoclastic analysis and intellectual rebellion will show its next outcropping. Old institutions and ideas in science and medicine as well as in politics and society have gone by the board and new ideals and ideas have replaced them and been added to whatever shreds of the old may have survived the attack of a disbelieving age. In no field are these facts better exemplified than in the modern present-day attitude toward, and care of, insanity. As in many other medical fields so in insanity and mental defectiveness, the keynote now is prevention—prevention in the individual by avoidance of those habits and excesses of body and mind which predispose to mental instability, and prevention in the race by stopping the inheritance of mental taints. This latter is perhaps the most important object of our modern science of eugenics. It is a field which is being admirably developed by the National Committee for Mental Hygiene, and its allied and related societies and organizations.

In line with the intensive study of problems connected with preventing the reproduction of mental taints and psychopathic predispositions, is the study of racial and even in some cases national characteristics and attributes of mind. Racial psychology has never been satisfactorily studied, yet it is the basis of any inquiry into racial psychopathology. The subject matter of such an inquiry is found in the pathological phenomena which are characteristic of a race or which are found in it with any considerable frequency. Its object is to classify these phenomena and by pure inductive reasoning, assembling the data and then drawing hypothetical conclusions, and rules as a working basis, to trace the underlying laws and reasons for the phenomena observed. The practical function of such an inquiry in turn is to arrive at the means of remedying these pathological phenomena viewed from the racial standpoint. As ever anthropology and medicine have much common ground in this science of racial psychopathology, or rather the art of medicine is seriously concerned with it for the purpose of curing or preventing pathological mental conditions, whereas purely scientific medicine makes it a subject of anthropological research alone.

A recent number of the *Popular Science Monthly* (March, 1913) contains an article by Dr. J. G. Wilson entitled, "A Study in Jewish Psychopathology," in which the author ingeniously rather than ingenuously undertakes to prove two propositions, (1) that the Jews are a highly inbred and psychopathically inclined race, and (2) that the prevalence of mental affections among them is almost entirely due to heredity. His arguments are striking and thought-compelling, even though tinged with a fixed idea of anti-Semitism. He concludes that the excessive number of constitutional inferior insanities among the Jews is at least partially explained by the fact that centuries of inbreeding have produced a race with a paranoid make-up. The author proposes more careful avoidance of consanguineous marriage and the introduction of non-Jewish blood into the race as a solution of the problem. If his premises be accepted, his conclusion is sound and his remedy logical. But there is much to be said on both sides and the discussion must from the first be raised above the suspicion of prejudice or personality. Its true significance, and the reason for adverting to it here, is in illustration of the growing importance of a careful investigation into racial psychopathology as a valuable addition to our means of combating the prevalence and increase of mental disorders and defects.

The surgeons at Ellis Island know full well that no just examination of the mental status of an immigrant is possible without some understanding of his mental habits, his inherited characteristics, and his environmental relationships. No cut and dried rule of thumb can be applied to any two races with a successful result. The Binet measuring scale of intelligence is an admirable test for French school children but it is inapplicable to the child of the Servian or Macedonian peasant. The Pole and the Greek, the Arab, the Finn, the Lett, the Italian, the Basque, even the German, the Swede, the Jew, the Englishman, and the Frenchman must be tested mentally with some understanding of the typical mentality of each. Wilson contributed a new angle to the observation of Jewish racial psychopathology. Whether or not his particular views and conclusions are correct is of much less importance than that interest be stimulated in this new field. First steps have often to be retraced but only by taking them can further progress and further knowledge be obtained.

## FATIGUE AND EFFICIENCY.

Fatigue is generally attributable to the waste products formed during muscular action, not only in muscular tissue, but throughout the economy as well. The extract of fatigue muscle injected into animals induces pronounced languor; injecting extract of non-fatigued muscles gives no such result. Soldiers after an exhausting march are as arm tired as they are leg weary. The workman who does not rest adequately for his needs loses his energy, psychic as well as physical—the fagged brain is fully as unreliable as the fagged muscle; this is a consid-

eration which should vitally interest the employer, from an economic if not from a humane standpoint. The latter should comprehend—indeed is more and more coming to do so—that, as Lee says, "mankind at present can administer no food or drug that can push the wearied cells up the metabolic grade simultaneously with their descent, or quickly after the descent has ceased. Only the assimilation and detoxication that normally come with rest—and best, rest with sleep—are capable of adequate restoration of working power."

The best surety against accident during work is an alert, refreshed mind in a virile body; on the other hand, the sure predisposition to accident is an exhausted, run down, devitalized human machine. There is now no question of the relation between fatigue and accidents; in Europe (and especially in Germany where the number of industrial accidents has been reduced fifty per cent.) this relation has been scientifically noted for practically all forms of human activity. Bank clerks make most of their errors in the late afternoon; wherefore there is now early closing of these institutions, since bankers have found their employees' mistakes too expensive for the maintenance of longer hours. Every one now knows what dreadful calamity must be feared when railway men work too many hours through many days. As to druggists: to err (with perhaps fatal consequences) in the filling of a prescription is indeed human and hardly blameworthy in a clerk who must be attentively at his post almost two-thirds of the twenty-four hours. And when such daily exhaustion in any trade or occupation is extended into weeks, becoming more and more incapable of re-creation by rest, a total disability results. And this becomes a matter of especial economic importance in positions where experience is what the employer is largely paying for.

In a recent "Scientific Study of Fatigue and Efficiency," published by the Russell Sage Foundation, Miss Josephine Goldmark has emphasized the part played by overstrain and long hours in the breakdown of health and efficiency among working people; although she by no means disregards the baneful influence, in debasing vitality and producing illness, of poverty and low wages, dark and insanitary tenements, dirt, overcrowding, lack of privacy, bad food and worse cooking.

There are those who hold that shortened hours of labor give the workers just so much more opportunity for dissipation—that there is more leisure to go wrong when people live in wretched homes with only the streets and the saloon to go to for recreation (to be re-created in). But Miss Goldmark destroys such reasoning, not by means of theories and speculations, but by sympathetic deductions from facts. Where cynics have prophesied drunkenness and rowdyism through the leisure derived from the shortened hours of labor, a kind of regeneration has really taken place. "Workers have made extraordinary advance in physique and morals." The gradual emergence of the English mill operatives from the physical and moral degenerations into which they had sunk in the thirties of the last century, is not exceptional but typical. It is an humble chronicle but full of meaning to any reader who loves the fulness of human nature. Gardening, sewing out-of-doors summer evenings, evening schools in winter, time for "the endearing trivialities of human life"—these were some of the simple yet enduring things at which mill workers learned to spend their leisure. And there has been an increase in temperance, which need not be surprising when one grasps "the truth that among industrial workers the desire for drink has often sprung from sheer physical exhaustion."

## STATUS TO-DAY OF THE WORLD PLAGUES.

The United States through its Public Health Service, operating to a large extent through the consular service, keeps us in close touch with new outbreaks of cholera, bubonic plague, yellow fever, etc. These details, however, give us no perspective, and we remain in ignorance of the general movement of these maladies over extended periods of time.

It is therefore of interest to read what was said before a recent meeting of the Aerztliche Verein of Munich on the last named aspect of epidemiology (*Münchener medizinische Wochenschrift*, March 10) by G. Mayer. The latter gave in brief outline the movement of the great epidemic scourges from 1900 to 1912. Leprosy, prevailing freely in the tropics and subtropics, tends to appear in Italy, France (west coast) and the Riviera. Cholera has moved from India across the Persian Gulf to Mesopotamia, Syria, the Caspian Sea, Persia, the villages of the Volga, Don, Dnieper and Dniester rivers. It progresses in Russian Poland, but has become arrested at the Russo-German and Russo-Austrian boundaries. In 1911 Russia was visited with especial severity from Mesopotamia and Syria, as were also Italy, Turkey, and the Balkan States, and Hungary. The Italian vessels bore cholera to Tripoli and to many other Mediterranean ports.

During the same period the bubonic plague moved from India and China to East Australia, East Africa, South American ports, California. In 1911-12 it extended to North Africa, East Arabia, the Azore Islands, and notably into Brazil.

Typhus, almost confined to Russia and Mexico, has come to light in Spain, while yellow fever prevails in America from Mexico south, along certain routes (West Indies, South American coasts). It has been transported in some degree to North and East Africa. At last accounts it was strongest in Mexico, the West Indies, and Chili.

## Sialoadenitis Sublingualis Acuta Epidemica.

This is the name given to an acute inflammation of the sublingual gland analogous to the inflammation of the parotid gland in mumps. There are instances in which the latter infection involves the submaxillary glands alone, and in extremely rare instances the sublingual glands may be the only ones affected. This rarity imparts considerable interest to the report of an epidemic occurring among the nurses in the Eppendorf Hospital, in which during the month of February, 1912, seven nurses, in addition to one admitted patient, were taken ill with an

infection of the sublingual glands. The cases were observed by C. Hegler, who reports the results of his study in "Beiträge zur Klinik der Infektionskrankheiten und zur Immunitätsforschung," Vol. I, No. 2. Of great significance is the fact that at no time during the occurrence of these cases, either in the hospital or in the city of Hamburg, was mumps prevalent, although it is noted that February is the month of greatest incidence of this disease. All of the author's cases began uniformly with the sudden onset of a swelling in the mental and submental regions, which swelling was more or less painful and tender and gave the appearance of a double chin. At the same time a swelling appeared in the mouth over the region of the sublingual glands. In most of the cases there was increased salivation. There was a slight rise in the temperature, and in six instances there were constitutional manifestations such as headache, joint pains, dizziness, and malaise. There were no pathological manifestations in any of the other organs of the body. The blood showed a normal to a slightly increased leucocyte count. The subjective symptoms disappeared within a few days, but the swelling subsided in from four to nineteen days. None of the complications that are occasionally observed after parotitis developed in these cases. The etiology as in the case of the latter disease is unknown. The evidence indicates the existence of a specific microbic factor probably distinct from that giving rise to mumps.

### Galvanization Plus Hypophysis Extract in Induction of Abortion.

With the discovery of the oxytocic action of hypophysis extract was no doubt associated the apprehension that it might prove itself a dangerous abortifacient. This fear soon passed off with the discovery that even at term the new drug is barely able to initiate labor. Nevertheless, it could not be overlooked that this drug is counted upon to exert an abortifacient influence along with other synergistic measures. At a meeting of a Strassburg medical society not long ago (*Deutsche medizinische Wochenschrift*, March 6) Vogelsberger first discusses the history of galvanism as an oxytocic. It was recommended for this purpose as long ago as 1845 by one Schreiber. Forty years later Bayer revived the method, and elaborated a technique which failed in practice only because there was present an unknown quantity, viz., the inability of the current to affect the last stages of labor. The method seemingly lay fallow until the discovery of the oxytocic properties of pituitary extract, which seemed to be exactly what was needed to complete the expulsion of the child. Naturally this combined resource will be employed chiefly only in missed labor and in gestation at term. The possibilities involved in procuring a therapeutic abortion in special cases will doubtless be allowed to slumber until more urgent conditions arise.

## News of the Week.

**Pellagra Work to Continue.**—The Thompson-McFadden Pellagra Commission, which is connected with the Post-Graduate Hospital, New York, has been assured of sufficient funds to continue the work of investigation and will soon open summer field-headquarters at Spartansburg, S. C., where its members worked last spring and summer. The personnel of the commission is the same as last year: Capt. Joseph F. Siler, Medical Corps, U. S. A.; Dr. Philip E. Garrison, Passed Assistant Surgeon, U. S. N.; Dr. Ward J. MacNeal, Assistant Director Department of Laboratories of the New York Post-Graduate Hospital and Medical School; Allan H. Jennings and M. V. King, entomologists of the Bureau of Entomology of the Department of Agriculture.

**City Death Rate.**—During the week ending March 29, there were in New York City 1,660 deaths, giving a death rate of 16.12 per thousand, as compared with a total of 1,617 deaths and a rate of 16.31 for the corresponding week of last year. The death rate for the first thirteen weeks of 1913 was 15.86 as against 15.71 for the same period of 1913.

**New Home for Consumptives.**—The Government of New Brunswick has received a gift from Mrs. James C. Jordan, of an estate of about 800 acres and a residence, to be used as a hospital for tuberculous patients in the incipient stage. The estate is on a high bluff along the Bollet River, twenty miles from Monckton, N. B. The Government has appointed a commission to manage the hospital.

**The von Ruck Serum.**—Medical Inspector E. R. Stitt of the United States Navy, has been ordered to Asheville, N. C., to investigate the work done there by Dr. Karl von Ruck in the treatment of tuberculosis. The Public Health Service has also undertaken to study the remedy and its effects. The results of Dr. von Ruck's studies were reported in a recent number of the Medical Record.

**Prize Essays on Diabetes.**—Announcement is made of the offer of one or more prizes by the Society of Karlsbad Physicians, for essays on "The Treatment of Diabetes Mellitus, with Special Reference to Balneotherapy." The competition is open to physicians of all countries, and essays may be presented in any language. The committee on award includes Professor Dr. Ritter v. Taksch, of Prague; Professor Dr. Luethje, of Kiel; Professor Dr. Ortner, of Vienna; Professor Dr. Schmidt, of Innsbruck; and Dr. Edgar Ganz, President of the Society of Karlsbad Physicians, and they have the option of awarding one prize of 5000 crowns, two prizes of 3500 and 1500 crowns respectively, or three prizes of 2500, 1500, and 1000 crowns. The essays must be in the hands of the judges by December 31, 1913. Further information may be obtained from the Society.

**Civil Service Examinations.**—The New York State Civil Service Commission will hold examinations on May 13, 1913, for the purpose of filling vacancies in the following positions: Assistant medical officer in the Health Officers' Department of the Port of New York, at a salary of $1,500 This position is in the detention and hospital service at the quarantine station, Staten Island, N. Y., and requires a knowledge of cholera, plague, yellow fever, smallpox and epidemic cerebrospinal meningitis. This examination is open only to licensed medical practitioners of the State of New York. Candidates will not be required to appear at any place for written examination, but will be rated on their age, education, experience (particularly with the quarantinable diseases) and personal qualifications as shown by their sworn statements and by answers to such inquiry as the Commission may direct to proper sources of information among persons acquainted with their qualifications.

Physician in the New York State Training School for Girls, Hudson. Examination open to women who are licensed medical practitioners in this State, who have graduated from a registered medical school, and who since graduation have had one year's experience on the resident medical staff of a general hospital, or in a State hospital or institution, or have been engaged for three consecutive years in the practice of medicine. Subjects of examination and relative weights: Written examination, covering anatomy and physiology, hygiene, bacteriology, and pathology; chemistry, organic, inorganic, and physiological; materia medica and therapeutics (drug, psychic, electric, and physiologic); surgery, obstetrics and gynecology; internal medicine and diseases of children; diseases of the mind and nervous system; diseases of nose, throat and skin, 6; education, experience and personal qualifications, 4. A vacancy exists in the position of assistant physician at $1,000 per annum and maintenance, increasing to $1,200, and in the position of physician at $1,500 to $1,800 and maintenance.

Medical Superintendent in the Oneida County Hospital at Rome, at a salary of $2,500 and maintenance for the superintendent and his family. Candidates must be well educated physicians, graduates of legally chartered medical colleges, with an experience of at least six years in the actual practice of medicine, including at least one year's actual experience in a hospital. Subjects of examination and relative weights: Questions relating to hospital management, including the purchase of supplies, 3; questions on general medicine, surgery and hygiene, and the treatment of tuberculosis, 3; education and experience, 4. In connection with the rating of the last subject, candidates may be summoned to Rome for an interview with the examiners. Special credit will be given for actual experience as executive head of a hospital. Open to all citizens of the United States, preference in certification being given to residents of the State of New York.

**A New Kind of Baby Show.**—The Babies Welfare Association of this city is holding a baby show in one of the public school buildings in which prizes are to be given to the healthiest babies and not necessarily the prettiest. It is probable, however, barring some exceptional case of distorted features, that the baby taking the health prize would also have stood at or near the head in a beauty contest, for health and beauty are twins at all ages.

**What Are Twins?**—The commissioners in charge of the dispensing of maternity benefits under the English national insurance act have a hard problem to solve in the case of a Lancashire woman who gave birth to a son on February 24 and to a daughter on April 4. Thirty shillings was awarded to her on the birth of the first child, and the question to be settled is whether the second child is to be considered as cause for granting another thirty shillings, or whether as a twin its birth was covered by the first payment. Under the insurance act the maternity benefit is the same for twins as for one child.

**Gifts to Charities.**—The Harrisburg Hospital of Harrisburg, Pa., receives a bequest of $5,000 by the will of the late William H. Boyer of New York.

By the will of the late Theresa Foy of New York, St. Vincent's Hospital receives a bequest of $3,226.

By the will of the late Lucy Wharton Drexel of Philadelphia the sum of $10,000 is bequeathed each to the Gynecean Hospital and the Hospital of the University of Pennsylvania.

The Society of the Ruptured and Crippled, New York, receives $5,000 by the will of the late Jerome Hilton Waterman.

The Presbyterian Hospital, New York, receives $7,500, and the Adirondack Cottage Sanitarium, Trudeau, St. Mary's Free Hospital for Children, New York, and the Grenfell Labrador Mission $5,000 each, by the will of the late Miss Henrietta Penfold.

**Dr. Herman M. Biggs** of this city is announced as Governor Sulzer's choice for the Commissioner of Health of the State.

**Lee County (O.) Medical Society.**—At the annual meeting at Opelika recently the following officers were elected for the ensuing year: *President,* Dr. W. J. Love; *Vice-President,* Dr. G. H. Moore; *Secretary-Treasurer,* Dr. O. V. Langley.

**In Memory of Dr. L. W. Steinbach.**—A memorial meeting in honor of the late Dr. Lewis Steinbach of Philadelphia was held in that city on the evening of March 30 under the auspices of 42 different organizations. Among the addresses of tribute was one by Dr. Solomon Solis-Cohen on "Physician and Friend."

**Obituary Notes.**—Dr. Frank Warren Chamberlain of New York, a graduate of the College of Physicians and Surgeons, New York, in 1892, and a member of the alumni associations of the New York and Sloane Maternity Hospitals, and of the Washington Heights Medical Society, died at his home on March 29, aged 52 years.

Dr. Joshua W. Beede of Auburn, Maine, a graduate of the Bellevue Hospital Medical College, New York, in 1864, a member of the attending staff of the Central Maine General Hospital, Lewiston, died at his home on March 21, aged 80 years.

Dr. James Clement French of Natchez, Miss., a graduate of the Pulte Medical College, Cincinnati, O., in 1875, a member of the American Medical Association, and the Mississippi State Medical Society, and president of the Adams County Medical Society, died at his home from Bright's disease, on March 19, aged 58 years.

Dr. Leon Straus of St. Louis, Mo., a graduate of the Medical Department of the University of Louisville, Ky., in 1879, and a member of the American Medical Association, the Missouri State and the St. Louis City Medical Societies, and the American Proctologic Society, died at his home from heart disease on March 15, aged 53 years.

Dr. John A. Hayes of Somersworth, N. H., a graduate of the Dartmouth Medical School, Hanover, in 1862, a member of the New Hampshire State and Strafford County Medical Societies, and a veteran of the Civil War, having been retired at its close with the rank of lieutenant-colonel for faithful and meritorious services, died at his home on March 25, aged 75 years.

Dr. Joseph Coddington Young of Newark, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1873, a member of the New Jersey State and Essex County Medical Societies, and for fifteen years chief medical examiner of the Mutual Life Insurance Company of Newark, died at his home on March 26, aged 65 years.

Dr. George McClellan of Philadelphia, a graduate of the Jefferson Medical College of that city in 1870, a member of the American Medical Association, the Pennsylvania State and Philadelphia County Medical Societies, the Philadelphia

Academy of Surgery, the American Association of Anatomists, and the Philadelphia Pathological Society, and professor of Applied Anatomy in the Jefferson Medical College and in the Pennsylvania Academy of the Fine Arts, died at his home on March 29, from an affection of the heart, aged 64 years.

Dr. Nelson Gales Blalock of Walla Walla, Wash., a graduate of the Jefferson Medical College, Philadelphia, in 1861, and a member of the Washington State and Walla Walla County Medical Societies, died at his home, from paralysis, on March 14, aged 77 years.

Dr. Richard Pearce Francis of Montclair, a graduate of Harvard University in 1883, and of the Harvard Medical School in 1888, a member of the American Medical Association, and the New Jersey State and Essex County Medical Societies, president of the medical staff of the Mountainside Hospital, Montclair, and for many years a member of the Montclair Board of Health, died in the Mountainside Hospital, from injuries received in an automobile accident, on March 29, aged 51 years.

Dr. Luther Jacob Saeger died at Allentown, Pa., on March 24, at the age of 36 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1899. He was a member of the Lehigh County Medical Society, of the Medical Society of the State of Pennsylvania and of the American Medical Association.

Dr. Joseph Currie died at Beverly, N. J., on March 24 at the age of 68 years. He was graduated from the Hahnemann Medical College of Philadelphia in the class of 1866.

Dr. William Zoller of Fort Plain, N. Y., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1878, died at his home on April 2, aged 67 years.

Dr. Julian Augustus Mead of Watertown, Mass., a graduate of the Harvard Medical School, Boston, in 1881, a member of the American Medical Association and the Massachusetts State and Middlesex County Medical Societies, a member of the Massachusetts State Board of Health since 1895, and formerly medical examiner of the Seventh Middlesex District, died at his home on March 30, aged 57 years.

Dr. Denis A. O'Brien of Boston, Mass., a graduate of the Harvard Medical School in 1892, died at his home on March 30, aged 45 years.

Dr. Samuel Richmond of the staff of the Atlantic City Hospital, Atlantic City, N. J., and a recent graduate of the University of Virginia, died at the home of his father in Passaic, N. J., on March 31, aged 26 years.

Dr. James A. Egan of Springfield, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1893, a member of the American Medical Association, the Illinois State and Sangamon County Medical Societies, and the American Public Health Association, a lieutenant in the United States Medical Reserve Corps and secretary of the Illinois State Board of Health, died at his home from Bright's disease on March 30, aged 53 years.

Dr. James M. McClure of St. Louis, Mo., a graduate of the Rush Medical College, Chicago, in 1868, and a member of the American Medical Association and the Missouri State and St. Louis City Medical Societies, died at the home of his brother in Princeton, Ind., on March 16, aged 71 years.

# Correspondence.

## THE SELF-LIMITATION OF GONORRHEA.

To the Editor of the Medical Record:

Sir:—The review of my book which appeared in the Medical Record of March 29, gives a wrong impression by only quoting a part of the paragraph in regard to gonorrhea being a self-limited disease. The statement which I made in my book is as follows: "Gonorrhea is a self-limited disease, and the suppuration may be looked upon as an effort on the part of the tissues to remove the invading microorganisms; so that when the last gonococcus is removed suppuration ceases, unless post-gonorrheal lesions in the urethra and infection with other bacteria cause a catarrhal inflammation with secretion, and a discharge of pus continues." Will you do me the favor to print my letter in your next number as I do not wish to be misquoted in your journal.

Henry H. Morton, M.D.

[In the review to which Dr. Morton takes exception, the writer said: "such a debatable statement as 'gonorrhea is a *self-limited* disease' cannot pass unchallenged." In this the author was not misquoted, for the rest of the paragraph simply explains but does not explain away the statement as to the self-limitation of the disease.—Ed.]

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

TROPICAL MEDICINE—DEBATE ON ALIMENTARY TOXEMIA—EFFECTS OF INSURANCE ACT ON HOSPITALS.

London, March 21, 1913.

Tropical medicine has had a good share of attention this week, both the schools having been brought prominently before the public. Prince Louis of Battenberg, president of the Dreadnought Seaman's Hospital Society, took the chair at the annual meeting and pleaded for continued support on the ground that it meets the claims of the sailors of all nations. This year a splendid effort has been made by Mr. Austin Chamberlain to raise an adequate sum to complete the noble monument begun by his father and it is hoped the new buildings will be opened by the King and Queen. The Prince-president urged that in his island kingdom the work of the "hospital dreadnought whose only object was to heal and not to kill" must appeal to all. Mr. Austin Chamberlain followed with an interesting speech advocating tropical research in this school in the capital of the empire.

The Liverpool tropical school comes into a bequest of £80,000 from the late Sir Alfred Jones, a munificent supporter during his life. He left more than £200,000 to be distributed under a scheme which has just been approved by Chancery and which includes this sum of £80,000, which said, Mr. F. C. Dawson the deputy chairman, has come at a most opportune time and would enable them to erect laboratories, wards, and other buildings in immediate contiguity to the Royal Infirmary and within a few yards of the University, the headquarters of the school. The funds for this extension being now assured the work will be put in hand at once. The reputation of the Liverpool school is world wide and its expeditions have been carried on with remarkable zeal. One sent to Jamaica to investigate the vomiting illness so prevalent there is now returning.

"Alimentary toxemia" was the subject fixed upon for full discussion at the R. S. M. and opened on the 10th at a special meeting by Dr. Hale White. There were no less than four papers for the opening day, each of which was enough for a lecture and then there were some speeches before the adjournment. Dr. White's paper was to be a general introduction. He began by objecting to the term chosen for the subject as unscientific for poisoning cases should be grouped according to the variety of the poison, not the point of entrance: "it is a minor matter whether our murderer comes in at the window or the door." The term also, he found too wide as covering an illness caused by absorption from any part of the canal though it would hardly serve for a case of opium poisoning. If it is intended to suggest microorganisms resident in the canal causing illness by passing into the blood we cannot name them nor can we name the poisons made by them if such be intended. If food causes the illness it is somewhat confusing to talk of food poisoning and not toxemia unless the food be infected and on the other hand when not infected to call it alimentary toxemia, as when urticaria follows eating strawberries. The name selected to include the different troubles to be discussed is of secondary importance and Dr. White's objection only a preliminary to a very lucid general statement of the conditions comprised in pyorrhea alveolaris, intestinal stasis, and so on, with practical observations on causes, symptoms, and treatment, as well as some considerate but candid criticisms, especially of the recent extension of surgery in some of these conditions.

The next paper was by Dr. F. W. Andrewes, who took up the bacteriological aspect of the subject. Remarking that the alimentary canal presented ideal conditions for bacterial growth he reviewed its flora and the part played thereby in the production of toxemia. He laid down that (a) in one important group of cases the poisoning is by foreign proteins, these being due to a defect in the liver and generally has little to do with bacteria; (b) the main effect of the bacteria lies in their ability to carry out protein cleavages beyond the capacity of the digestive ferments, with the formation of products which, when in excess, the body is unable to neutralize, and, (c) there is at present little evidence that true toxins, derived from the ordinary flora, soluble or intracellular, play much part in the toxemia.

Dr. Vaughan Harley considered the toxins in question from a chemical point of view. They were probably formed in the canal as were other poisonous products derived from the food as well as from the secretions and excretions, whichever their source they were practically the same. The aromatic substances, indol, skatol, phenol, and cresol, formed by the breaking down of protein by the various bacteria of the canal, appeared to cause symptoms of toxemia.

Dr. Saundby, Professor of Medicine in the Birmingham University, tackled the subject from the medical aspect. He is not so smitten with some of the current notions on food poisons and considers the natural protective agencies, in normal conditions adequate for defence. These agencies are: (1) The digestive secretions; (2) impermeability of the mucous membrane; (3) intestinal mucus which delays absorption; (4) the normal microbes; (5) antitoxic action of the liver. But this protection, he admitted, may be diminished or abolished by inflammation. Alcohol, too, must be regarded with suspicion from its slowing or checking of the digestive processes and inhibiting the protective agencies. Wholesome food in reasonable quantity did not break down the protection and the evidence did not justify the exclusion of animal protein as directly or indirectly a cause of toxemia. When this was actually present treatment was elimination of the poison and reinforcing the protective agencies. Extensive disease of the wall of the colon of long duration and rebellious to other methods might call for surgical intervention.

Mr. Arbuthnot Lane then re-stated his views on intestinal stasis and emphatically asserted the remarkable value of surgical treatment showing from his own practise and that of others throughout the world how defective drainage has been dealt with by operative methods and in numerous cases with brilliant results.

Mr. J. F. Colyer discussed the subject from a dental point of view, two main sources of oral sepsis being caries and periodontal disease, the latter difficult to diagnose at an early stage and requiring each tooth socket to be explored with a fine probe. He held that mouth breathing was a constant cause.

Hospital authorities are greatly perturbed as to the consequences—both present and prospective—of the Insurance Act. They find that subscriptions are falling off or being reduced and at the same time they are called upon to insure their employees. This demand seems utterly unjustifiable considering that these employees had no desire and no need for insurance; they were, in fact, receiving the medical benefits of the Act from the hospitals they served. In the case of the London Hospital the sum thus extracted amounts to £900 a year—a very serious hindrance to the work of this institution, situated in the overcrowded and poor East End and the income of which is only raised with the greatest difficulty. Its zealous and energetic chairman, Mr. Sydney Holland, with officials of the other voluntary hospitals appealed to the Chancellor of the Exchequer to make some amends by relieving them of the duty on legacies. They received for answer that the proposal would involve serious loss of revenue and other demands would follow. And yet, as Mr. Holland remarks, Irish hospitals are exempted. In his thorough way he has gone into the figures of all the hospitals in England and Scotland and finds the concession would cost about £57,250 a year which, he says, is no great amount for the Exchequer and would be a great help to those who have to fight hard for every £5 note. Then he enforces the claim for relief by enumerating the benefits conferred by hospitals and medical schools in all directions and for which no consideration whatever has been shown under the Act or the way in which it has been construed. So "out of pure revenge," as he terms it, he closes his protest by telling those who will leave legacies to hospitals how to divide their bequests so that the charities may receive the largest proportion and the Exchequer the smallest.

A falling off of subscriptions is noticed at some of the voluntary hospitals and is generally attributed to the exactions of the Insurance Act though it is not always possible to trace the cause. An example was quoted at the anniversary of the Italian Hospital on Tuesday when a letter was quoted from a subscriber who for this cause reduced his contribution from £20 to £2 2s. This was urged as a reason why hospitals should be relieved from rates

—a serious impost which costs this charity between £200 and £300 a year. I hear of similar troubles from the provincial hospitals.

## OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

DEATH RATE IN MANILA—PERIOD OF INFECTIVITY IN MEASLES—INSTRUCTION OF THE PUBLIC IN SANITARY MATTERS—HEALTH LEGISLATION IN PERSONALS.

MANILA, P. I., February 15, 1913.

DURING the month of January there was a marked decline in the Manila death rate. For the same month of 1912, there were 698 deaths, whereas, for January, 1913, there were only 502 deaths, which is a reduction of 196. This is by far the lowest mortality record that has been made in Manila since American occupation. There is considerable reason to believe that the many sanitary improvements which have been brought about since American occupation are now beginning to produce results. The new water supply, which furnishes Manila water from an uninhabited water-shed; the sanitary sewers, the prompt isolation of dangerous communicable diseases, clean streets, and effective disposal of garbage and refuse, control of mosquitoes, and the sixty thousand cases per annum that are furnished relief at the Philippine General Hospital, are all, probably, important factors in improving the public health.

The modern views with regard to the period of infectivity of measles, as shown by the work of Anderson and Goldberger, are being given a practical test in dealing with measles cases in Manila. In a girls' dormitory, in which there were quartered 20 girls, none of whom had had a previous attack of measles, there appeared a typical case in a girl who had been outside the dormitory for a number of weeks, and who returned to the dormitory three days after the rash had made its appearance. For a period of 36 hours she came into intimate contact with the remaining girls, but as she was considered to be no longer infective she was simply transferred to an isolation hospital and none of the contacts were quarantined. They were permitted to attend school with several hundred other girls, many of whom had not had the disease. Disinfection of the premises was carried out. More than a month has now elapsed since the case was detected, and no further cases of measles have appeared.

The Bureau of Health has prepared a large number of views illustrating insanitary conditions and their method of correction; the pictures showing the conditions before, and the results after correction. These have been put into the shape of lantern slides and a Filipino physician, who speaks the native dialects, had been detailed to give illustrated lectures on hygiene and sanitation to school children and others throughout the provinces of the Philippines. A number of these lectures have already been given and were well attended, and apparently are useful in educating the public in public health matters. Owing to the few places in the Philippines at which electricity is available, outside of Manila, it is necessary to send a complete electric light plant accompanied by an engineer, in order to operate the lantern. On this account the appearance of the lecturer and his equipment in isolated towns is a rather important event, and directly responsible for awakening much interest.

The annual session of the legislature, which closed February 11th, passed a number of acts which have a direct bearing upon medical matters in the Islands. The opium and cocaine law was amended so that dentists may now administer these drugs under certain restrictions.

An appropriation was made for opening the Southern Islands Hospital, at Cebu. This institution was completed some time ago, but could not be opened until the legislature provided the necessary funds. This hospital marks the beginning of a new epoch in medical relief in the Islands, in that it is the first time in their history that the facilities of a modern hospital are available outside of Manila.

Some slight amendments were made in the provincial sanitary act, so that now only the vote of half the municipalities is required in order to make it obligatory upon a provincial board to vote an equal sum for each dollar appropriated by a town council for health purposes. Formerly a two-thirds vote was required.

An appropriation of $12,500 was made for a diet kitchen in which the pupils of the Philippine School for Nurses may receive instruction in dietetics. The sum of $10,000 was set aside for improving the Sibul Springs baths. The sum of $100,000 was made available for continuing the installation of artesian wells, and $10,000 for continuing the work of the committee heretofore appointed to study the cause of the high infant mortality.

Dr. W. K. Beatty, a medical inspector of the Bureau of Health, has been granted leave of absence to visit the United States.

Dr. Louis Schapiro, who has just returned from leave of absence, has been reassigned as Chief of the Bontoc Hospital Division of the Bureau of Health, with station at Bontoc, in the Mountain Province.

Dr. Collins, of the United States Public Health Service, who is on duty as medical officer on the United States Revenue cutter *Unalga*, en route from Baltimore to Seattle, passed through Manila last week.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*March 27, 1913.*

1. A Few Important Points in X-Ray Examination of the Digestive Tract. F. W. White.
2. The Experimental Production of Lesions Resembling Pellagra. H. M. Adler.
3. The Present Position of Abdominal Cesarean Section in Eclampsia. J. T. Williams.
4. An Unusual Obstetrical History. J. C. Hubbard.

1. **X-Ray Examination of the Digestive Tract.**—By F. W. White. (See MEDICAL RECORD, Vol. 82, page 1055.)

2. **Experimental Production of Lesions Resembling Pellagra.**—H. M. Adler has conducted an investigation with the object of determining the reasons for emaciation and anemia in many chronic diseases found among the insane and senile. It has been found that certain patients with emaciation suffer from the effects of a fat intoxication. A similar condition has been shown to exist in certain cases of extreme emaciation due to general paralysis. In these cases it was possible to demonstrate an autohemolysin in the serum after overfeeding with fat in the form of milk or cream. The autohemolysins disappeared regularly when the fats were reduced. These experiments pointed to the existence of a defect in the ability of the individual for handling what under normal conditions was a food. Experiments on the production of pernicious

anemia in rabbits by overfeeding with olive oil, cotton-seed oil, chemically pure triolein, etc., have brought out the facts that an excess of fat may be absorbed by the intestines; that, having been absorbed, it will produce at times the symptoms of acute enteritis, loss of weight and in time a varying degree of anemia, which may be severe enough to closely resemble the pernicious type. In six out of ten rabbits there appeared during the latter part of the experiment, four months or more after oil feeding was commenced, a skin eruption on the inner surface of the ears. This condition was in the nature of a diffuse lesion, characterized by intense congestion and thickening of the entire ear. The ears would become so much thickened that they could be folded over with difficulty, and the congestion caused them at times to appear dark purplish in color. This appearance of the ears was invariably accompanied by acute enteric symptoms such as profuse diarrheas and bloody stools. At the same time the weight of the animal dropped rapidly. The oil feedings were discontinued and the symptoms lessened in severity and disappeared. These experiments seem to the author to be presumptive evidence that a condition which is characterized by a dermatitis and acute enteritis need not be necessarily a clinical entity in the sense of being a specific reaction to a specific causative agent, but that this may be a more or less general reaction common to a large number of pathological conditions.

3. **Abdominal Cesarean Section in Eclampsia.**—J. T. Williams concludes that abdominal cesarean section in eclampsia has a maternal mortality of 48.2 per cent. Vaginal cesarean has a mortality ranging from 3 to 18 per cent., and dilatation of the cervix has a mortality ranging from 7 to 26 per cent. Therefore, abdominal cesarean section in eclampsia should be restricted to those cases in which there is a pelvic contraction sufficient in itself to demand it, and possibly also to early cases of threatened eclampsia at or near term, where the shock of a vaginal delivery seems to offer much greater danger than the added strain imposed upon the excretory organs by cesarean section.

## New York Medical Journal.

*March* 29, 1913.

1. Massive Dose *X*-Ray Treatment of Cutaneous Epithelioma. G. M. Mackee and J. Remer.
2. Hospital Morbidity Statistics. C. F. Bolduan.
3. Suprapubic Cystostomy. C. G. Cumston.
4. An Improved *X*-Ray Generator. S. Tousey.
5. Extract of the Suprarenal Glands. J. Aikman.
6. Chronic Seminal Vesiculitis. A. Hyman and A. S. Sanders.
7. Newer Teachings of Diseases of Gastrointestinal Canal. M. Knapp.
8. Dreaming and Dreams. G. Drenford and L. K. Hirshberg.
9. Hyperidrosis; Etiology and Treatment. H. G. Wertheimer.
10. A Plea for More Expert Anesthetists. M. Lavandera.
11. The Prevention of Middle Ear Diseases. M. Lubman.
12. Ten Cases of Goiter. J. J. Gilbride.
13. Salvarsan in Asthma. L. E. Glasgow.

1. **X-Ray Treatment of Epithelioma.**—G. M. Mackee and J. Remer state that the advantages of the massive dose over the fractional dose method in the treatment of cutaneous epithelioma are the following: (1) The accurate measurement of the dose is hardly ever attempted excepting in intensive treatment, so that the method can be said to be accurate and scientific. (2) The patient is spared the necessity of almost unlimited visits to the physician's office. It has been proved that prolonged and excessive exposure to the *x*-rays can produce cancer. It would seem advisable, therefore, in the treatment of epithelioma with the *x*-rays, to give as nearly as possible the exact or minimal amount necessary to cure the individual case. This dose may be divided into several strong treatments, but not into unlimited and oft-repeated mild exposures. The only way to cure a cutaneous epithelioma with the minimum amount of ray is to obtain the desired result in one treatment. If, for instance, six H units of a No. 6 or 7 Benoist ray, administered at one sitting, will cure a given case, the same effect will not be noted if this dose is divided into more than one treatment.

3. **Suprapubic Cystostomy in Carcinoma of the Prostate.**—C. G. Cumston notes that suprapubic cystostomy is the operation of choice in this condition, because it allows one to remove the carcinomatous prostate later on if conditions are suitable. At the present time the occurrence of prostatic cancer is well recognized and it should always be looked for in every case of supposed simple prostatic hypertrophy. In the early stage, before serious symptoms have arisen, a radical operation can be done successfully, but in advanced cases palliative measures alone are indicated. For this reason total prostatectomy should follow suprapubic cystostomy as soon as the conditions admit, the suprapubic operation having been indicated by certain urgent symptoms resulting from the prostatic process. But there is always a notable proportion of inoperable cases, in the author's experience about one out of three, in which the growth has extended beyond its capsule and in which prostatectomy would be useless, if not disastrous. Here one is dealing with what Guyon called the diffused type, and besides not being able to remove the neoplasm completely there is always danger of fatal hemorrhage or a rapid extension taking place immediately after the attempt at removal. These instances are of the *noli me tangere* class, and to them palliative operations alone belong.

5. **Suprarenal Extract.**—J. Aikman summarizes a few important points as follows: Constitutional effects are obtained only by hypodermic injections or intravenous infusions. The hemostatic effect is obtained only by local applications of the drug. Given by the mouth, suprarenal extract has little or no action aside from the local effects. It should not be used in the treatment of pulmonary or cerebral hemorrhages. Failures in the treatment of bronchial asthma are generally due to faulty diagnosis or improper administration of the drug.

6. **Chronic Seminal Vesiculitis.**—A. Hyman and A. S. Sanders as a result of a large number of urethroscopic examinations were led to the conclusion that from the urethroscopic examinations alone it is not possible in the majority of cases to diagnosticate accurately the condition of the seminal vesicles. The appearance of the openings of the prostatic and ejaculatory ducts gives one some idea, however, as to the organ involved. In prostatitis the prostatic ducts generally show evidences of disease, while in vesiculitis the lesions are found in the region of the ejaculatory ducts. As pathognomonic of vesiculitis may be mentioned the oozing of pus from one or both ejaculatory ducts; this latter condition is rarely seen. With the possible exception of this characteristic picture the lesions presented by the colliculus cannot be taken as a criterion of the condition of the adnexa, for similar lesions are often seen in uncomplicated posterior chronic gonorrhea, and even in cases of irritative urethritis due to masturbation or excessive coitus.

## Journal of the American Medical Association.

*March* 29, 1913.

1. Sanitation on the Canal Zone. W. C. Gorgas.
2. Gunshot Wounds of the Abdomen. M. Kahn.
3. A Study of the Toxicity of the Salicylates Based on Clinical Statistics. P. J. Hanzlik.
4. Autoserotherapy in Serofibrinous Pleurisy. M. Fishberg.
5. Some Old Pelvic Inflammatory Diseases, Their Non-Surgical Treatment with Report of Cases. F. McMorrow.
6. How We May Reduce the Mortality from Cancer of the Uterus, with Special Reference to Treatment and to Publicity Through the Lay Press. H. J. Boldt.
7. Report of a Case of Pneumococcus Meningitis with Normal Cerebrospinal Fluid. J. M. Brady.
8. The Grafting of Preserved Amniotic Membrane to Burned and Ulcerated Surfaces Substituting Skin Grafts. M. Stern.
9. Medical Education and the Hospital. A. D. Bevan.
10. The Philosophy of Mastication. G. M. Niles.
11. Spasm of the Lumbar Muscles. F. M. Pottenger.
12. A Case of Spastic Paraplegia, with Dorsal Root Section for Pain and Spasticity. L. Kaufman and P. Le Breton.
13. Poliomyelitis in Guine-Pigs. M. Neustaedter.
14. The Growth, the Death and the Regeneration of Bone. H. G. Wetherill.

15. Report of a Case of Hydrophobia. A. Hand, C. Y. White and J. Reichel.
16. The Branched Forms of the Tubercle Bacillus and Immunity to Tuberculosis. S. G. Dixon.
17. The Finding of Acid-Fast Bacilli in the Circulating Blood. J. B. Rogers and A. I. Murphy.

2. **Gunshot Wounds of the Abdomen.**—By M. Kahn. (See MEDICAL RECORD, January 25, 1913, page 181.)

3. **The Toxicity of the Salicylates.**—P. J. Hanzlik concludes from his investigations that the mean toxic doses of the different salicylates for adult males and females, respectively, are 180 and 140 grains of the synthetic sodium salicylate; 200 and 135 grains of the natural sodium salicylate; 120 minims of the oil of gaultheria (methyl salicylate); 165 and 120 grains of acetylsalicylic acid, and 100 and 83 grains of salicylosalicylic acid. For females the toxic dose of the salicylates is approximately 80 per cent. of that for males. The toxic dose of salicylosalicylic acid is about 50 per cent.; that of methyl salicylate and acetylsalicylic acid about 60 per cent. of that of sodium salicylate. The toxic dose of the synthetic sodium salicylate for the majority, or about 68 per cent., of individuals of both sexes lies between 100 and 200 grains. Practically the same is true of the methyl salicylate. The therapeutic efficiency of synthetic sodium salicylate is greatest in rheumatic fever and, not infrequently, partial relief and even complete relief are obtained in other conditions. Presumably, there is no relation between the occurrence of albuminuria in febrile and afebrile conditions and toxic doses of the synthetic salicylate. Individuals show idiosyncrasy toward toxic doses of the synthetic salicylate, but no connection is found between these idiosyncrasies and the factors of age, sex, race, and diseased condition. The idiosyncrasy generally varies in the same patient, and is not influenced by previous salicylate medication.

4. **Autoserotherapy in Serofibrinous Pleurisy.**—M. Fishberg believes that this method of treatment is a simple one and ought to be tried in every case of pleural effusion in which the fluid is not purulent. Indeed, inasmuch as in practically every case of pleurisy showing signs of effusion exploratory puncture is to be performed with the view to determining the character of the fluid in the pleural cavity, it is advisable, when the contents of the pleural cavity are found to be serous, that the needle should not be withdrawn completely, but that when its point is brought to the subcutaneous tissue it should be injected then and there. The quantity of fluid to be injected subcutaneously need not be very large; from 2 to 5 c.c. is quite enough. In favorable cases it is observed that within two or three days the subjective symptoms—the pain, the dyspnea, the prostration, etc.—are ameliorated or entirely disappear, while physical exploration of the chest shows that the upper level of the fluid is lower than it was before the injection. Within a week or ten days the fluid in the chest disappears altogether in about 80 per cent. of the cases. In some patients it may be necessary to repeat the treatment several times every two or three days before any salutary effects are evident. In about 10 or 15 per cent. of cases this mode of treatment seems to fail, but even in this instance no harm is done to the patient.

6. **Cancer of the Uterus and Publicity.**—H. J. Boldt states that nothing definite is known as to the cause of cancer. There are no symptoms which, alone, are characteristic of cancer of the uterus. The onset of the disease is so insidious that sometimes the neoplasm has progressed to a stage beyond the hope of cure by any kind of operation, before the appearance of a symptom sufficiently marked to cause the patient to seek advice. The promulgation of knowledge regarding cancer of the uterus through the lay press, as advised at the last meeting of a large national gathering, cannot bring about a lowering of mortality from uterine cancer to such an extent as would be the case if the medical profession—the family physician—did the teaching directly. Information regarding cancer of the uterus in its early stages, through the lay press, is likely to do more harm than good, because there are no characteristic symptoms that apply to that disease alone, and because the principal early symptom, leucorrhea, is one that is present so often in women, in whom there is not the slightest suspicion of uterine cancer that such lay articles are likely to aggravate the nervous symptoms already existing in many, and make neurasthenics of some who are not ill. The family physician must be urged to realize that, in all instances in which there is the slightest suspicion of cancer, his obligation to his patient is to ascertain, by all diagnostic means at his command, that cancer is *not* present, rather than to affirm a cancer diagnosis. When the diagnosis of cancer has been made, an operation for the relief, or the cure—as the case may be—should be undertaken as soon as possible, since, with our present knowledge, surgery offers the best prospect for the patient.

7. **Pneumococcus Meningitis.**—J. M. Brady concludes that the positive diagnosis of pneumococcus meningitis may be impossible during life. A normal cerebrospinal fluid may be obtained throughout the disease. Anatomical changes (encephalitis, meningitis) occur oftener than is usually believed and are the explanation of symptoms from the side of the nervous system which have been regarded in the past as functional (meningismus).

11. **Spasm of the Lumbar Muscles.**—F. M. Pottenger states that the kidney reflex (muscle spasm) is not very difficult to elicit. It is found by placing the patient on a comfortable stool or chair so that his feet are flat on the floor. He is then instructed to sit erect, but relaxed, so that the lumbar muscles are not put on a stretch. These muscles are now examined by light palpation. Any difference in tension should be observed. If one kidney is the seat of an inflammatory process, the muscles on that side will be firmer than normal. If both kidneys are inflamed the lumbar muscles on both sides will be firmer than normal to the touch. It is often plainly visible that the muscles on the affected side are larger and stand out more prominently than the corresponding muscles on the other side. The most important thing to remember in looking for the spasm here, the same as in examining the muscles of the abdomen, chest, or neck, is to have the muscles relaxed. The muscles which are being examined, as well as those with which they are being compared, must be relieved of all tension, otherwise errors will creep in.

16. **Branched Forms of the Tubercle Bacillus.**—S. G. Dixon states that he has shown that the tubercle bacillus has a cycle of life not previously recognized, with a morphology suggesting the higher molds. He is now seeking a culture medium on which, under suitable temperature conditions, the branched forms of tubercle bacilli will reproduce the rod-shaped forms. In the branched forms there is noted a reduced virulence and the author has produced a marked degree of immunity in lower animals with branched forms of the living bacilli.

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## The Lancet.

*March 22, 1913.*

1. Intrathoracic Aneurysm. F. de Havilland Hall.
2. The Genital Functions of the Ductless Glands in the Female. W. B. Bell.
3. Bastedo's Sign: A New Symptom of Chronic Appendicitis. A. F. Hertz.
4. Cases Treated by Radium in the Royal Infirmary, Edinburgh, during 1912. D. F. D. Turner.
5. Hyperextension and "Backfire" Injuries of the Wrist. C. S. Wallace.
6. Ionic Medication in Herpes Zoster. A. Macnab.
7. The Nature of Tea Infusions. H. L. Smith.

1. **Intrathoracic Aneurysm.**—F. de Havilland Hall states that the two prime factors in the production of an aneurysm are some degenerative change in the wall of the artery and strain. Syphilitic endarteritis is the most

important causative agent. Thoracic aneurysm is a comparatively rare disease in females. The symptoms met with in intrathoracic aneurysm may be grouped as follows: (1) pain; (2) respiratory symptoms; (3) laryngeal symptoms; (4) circulatory symptoms; (5) dysphagia; (6) paraplegia and hemiplegia; and (7) general symptoms. Pain is one of the earliest and most constant of the symptoms of aneurysm. It may be of three kinds: anginal, that due to pressure, and neuralgic. It is important to bear in mind that angina pectoris of the most typical character may owe its origin to aneurysm, otherwise the physician may be content with recognizing the symptom and fail to discover its cause. Dyspnea is a very common symptom in aneurysm, and may be brought about by various causes. If accompanied by stridor it is highly suggestive of aneurysm. Two kinds of dyspnea are to be recognized—*i.e.* a paroxysmal dyspnea and a gradually increasing difficulty of breathing. The former is probably due to implication of the vagi or recurrent laryngeal nerves, or to compression of the small branches of the pneumogastric forming one of the pulmonary plexuses; and the latter to direct pressure upon the trachea or bronchial tubes. The characteristic cough of aneurysm has been described as ringing, brassy, rough, guttural, or compared to a leopard's growl. The cough may be harsh and dry, or it may be accompanied by a mucous expectoration, sometimes tinged with blood. Paralysis of the left recurrent laryngeal nerve is frequently associated with intrathoracic aneurysm. Among circulatory symptoms may be mentioned pain of an anginal character and throbbing, but it is quite astonishing how little the heart seems to be affected by the presence of an aneurysm unless there be coexisting disease of the aortic valve. In aneurysms affecting the third part of the arch and the descending aorta the patient may experience difficulty in swallowing due to pressure of the sac upon the esophagus. Paraplegia is a rare complication of aortic aneurysm but it may occur as a result of erosion of the vertebræ and direct pressure of the aneurysmal sac upon the spinal cord. The pain and consequent loss of sleep and the general misery caused by an intrathoracic aneurysm usually result in considerable loss of flesh. Emaciation may be more directly brought about by pressure on the esophagus preventing the entry of food into the stomach; or an enlarging aneurysm may compress the thoracic duct causing engorgement of the absorbent vessels and glands, and leading to great interference with nutrition. In some cases the loss in weight is rapid.

2. **Genital Functions of the Ductless Glands.**—W. Blair Bell presents facts which illustrate the influence of the ovaries on the uterus, on the general metabolism, and on the rest of the principal organs of internal secretion. With regard to the influence of the ovary on the uterus it is pointed out that to some extent the implantation of the fertilized ovum is assisted—possibly by the secretion of the corpus luteum. Further, the activity of the uterus is maintained and regular contractions are promoted, probably by the secretion of the interstitial cells. In the general metabolism the total ovarian secretion appears to promote the excretion of calcium and the retention of phosphorus. And lastly, total ovarian insufficiency arouses increased activity in most if not in all the other remaining ductless glands.

3. **Bastedo's Sign in Chronic Appendicitis.**—A. F. Hertz has demonstrated the efficacy of this sign and notes that during the past few months papers have appeared by Rost, Dreyer and Slawinski in Germany likewise confirming its value. The test depends upon the production of pain and tenderness in the right iliac fossa on inflation of the colon with air. For this purpose the author uses an ordinary rubber rectal flatus tube, which is connected by a short piece of glass to a pump, such as that used with the sigmoidoscope. Bastedo recommends that the tube should be inserted 11 or 12 inches into the rectum, but, as the experiments of Goodhart, the author and others have shown that a tube can very rarely be passed beyond the pelvirectal flexure, which is never more than 6 inches from the anus, there is no advantage in introducing it further than just within the ampulla of the rectum—about an inch and a half from the anus. After the tube has been inserted the patient lies flat on his back, and the pump is brought up between his legs. On now slowly pumping air through the tube the colon is seen gradually to distend, and after a certain quantity has been introduced an individual who is not suffering from appendicitis feels a diffuse discomfort in the lower part of the abdomen, but there is no pain unless an excessive quantity of air is introduced, in which case it is not more marked on one side than the other. There is also no tenderness. Patients suffering from appendicitis, however, generally experience pain in the right iliac fossa, even if the pain has hitherto been confined to the epigastrium or the neighborhood of the umbilicus. In one of the author's cases, in which a diseased appendix was subsequently removed, pain was only felt some hours later. Whenever pain is produced, and in some cases in which no pain has been felt, well-marked tenderness is found in the neighborhod of McBurney's point. When tenderness has already been observed in this situation it is always much increased by inflation, but it is also found in cases in which no tenderness has hitherto been noticed in spite of frequent examinations. In a number of instances the author has observed a further exceedingly characteristic symptom; the pain is referred to the epigastrium when pressure is exerted in the right iliac fossa after inflation, the epigastric pain being identical in character with that which formed the chief symptom of which the patient complained.

## British Medical Journal

March 22, 1913.

1. Glycosuria. G. Rankin.
2. The Action of Salicylic Acid and Chemically Allied Bodies in Rheumatic Fever. R. Stockman.
3. Death by Electric Currents and by Lightning. A. J. Jex-Blake.
4. The Food Requirements of Children. C. Watson.
5. Cases Treated by Radium in the Royal Infirmary, Edinburgh, during 1912. D. Turner.

1. **Glycosuria.**—G. Rankin notes that this condition occurs under a bewildering variety of conditions, and in the present state of knowledge no complete system of classification seems possible. It is met with on recovery from chloroform or ether anesthesia; in poisoning from coal gas; after the administration of thyroid extract and of various drugs; after sudden immersion in cold water; in the later months of pregnancy; as the result of mental shock, etc. It happens as an incident in many diseases of the nervous system; it may be a sequel of the acute infective fevers; and it is met with in organic disturbance of the liver, pancreas, and intestinal tube, and also in disease of the thyroid gland or of the pituitary body. While it is true that carbohydrates ought to be limited in all cases of glycosuria, it is no less certain that in most instances patients do best with a moderate carbohydate element in their diet, and in every case the problem to settle is how far starch, in one form or another, may be given without increasing the urinary sugar. For this purpose the first point to determine is the extent to which the glycosuria depends upon carbohydrate intake. In the matter of dietetic treatment there is one plan which has not received as much attention as it deserves, namely, the effect to be derived from repeated short periods of absolute starvation.

2. **Salicylic Acid and Allied Bodies in Rheumatism.**—R. Stockman finds that the real efficiency of the numerous compounds which have been recommended in rheumatic affections depends solely on the amount of salicylic

acid which they contain or develop in the body. Little is known as to how chemical constitution influences the antirheumatic action of this group of substances. Benzoic acid, formed by the introduction of COOH into benzol, shows this specific action, but when two molecules of COOH are introduced (phthalic acid) the antirheumatic effect is diminished almost to the vanishing point. When, however, OH is introduced into benzoic acid to form salicylic acid, the efficacy is enormously increased, and it looks as if this OH were the determining factor, yet the stereo-isomers of salicylic acid, m-oxybenzoic and p-oxybenzoic acids, have no action. When the OH of salicylic acid is altered into $OCH_3$, as in ortho-methoxy-benzoic acid, all antirhematic effect disappears. That the COOH molecule also has a dominating influence is shown by the fact that in cinnamic and coumaric acids, where it is disturbed, the specific antirheumatic action is completely lost. Methyl salicylate develops salicylic acid in the body and retains the specific action, while the dimethyl-salicylic acid, which does not do so, is inert, and the same holds true in the case of other salicylic compounds, such as salicin (which is active) and populin (which is inactive). The cresotinic acids are the only substances which are known to equal or even approach salicylic acid in efficacy. The prevention of heart lesions, valvular and myocardial, should be the great aim of one's treatment, yet it is notorious that heart lesions occur very commonly even while large doses of salicylates are being administered It is still an open question whether these lesions and rheumatic lesions generally are caused by colonies of microbes or by toxins, nor is it known definitely whether the salicylates act as antimicrobes or as antitoxins. The most immediate explanation of their action is that they kill or injure a causal microbe, but it has also been maintained that the almost instantaneous although transient effect of a small dose given intravaneously points to an antitoxic action, and that when given per os the rapid abatement of symptoms apart from the real cure, as shown by the tendency to relapse, points in the same direction. It is not seriously held at the present day that any of the germicidal remedies can be given in sufficient amount to kill bacteria in the human body. The most one can hope for is that their vital activity and capacity to produce toxins may be abated, and that thereby the natural defensive agencies of the body will be enabled to deal with them more readily and effectively so that the infection is got rid of. Most probably this is what occurs in rheumatic fever under salicylic treatment, and it explains the tendency to relapse if the remedy be prematurely stopped or not given in sufficiently large doses.

3. **Death by Lighting.**—A. J. Jex-Blake states that it would seem as if sudden death by lightning might occur in at any rate three different ways—by failure of the heart, by failure of the respiration, and by failure of both together. In the vast majority of cases the senses are lost at once, and in most death takes place very rapidly if at all. The extreme suddenness with which it must have occurred, as proved by the natural position of the corpse and its placid expression, has often been noted. As is the case in non-fatal strokes, there is reason to suppose that the nervous system is profoundly affected, though no microscopic lesions may be demonstrable. Persons struck and apparently killed by lightning should at once be given plenty of fresh air, their clothes should be loosened, and artificial respiration by Schäfer's or Sylvester's method should be applied and should be continued until either recovery occurs or cooling of the body and *rigor mortis* show conclusively that death has taken place. In the medical writings of from fifty to two hundred years ago one often sees bleeding recommended, and this might well be of service in those cases of lightning stroke in which the heart goes on beating while the respiration stops. If it were immediately—within a few minutes—available to give strong electric shocks to the precordia would be well worth trying in desperate cases. As regards other remedies—such as stimulants in all forms, hot or cold applications, the inhalation of pungent vapors—very many have been recommended, but none seem to have met with any success.

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## Berliner klinische Wochenschrift.

*March* 17, 1913.

**Athletics and Stimulants.**—Professor F. Hueppe shows a most unusual familiarity with athletics in the United States. He begins his article with a summary of the various folk stimulants, and another of the folk athletics. The latter were originally compulsory in character, a part of the daily existence of hunters, mountain dwellers, and the like. The relationship between physical exertion on the one hand and food and stimulants on the other is very intimate; but in compulsory athletics is less marked than in athletics for sport's sake. In the latter the relationship may be one of self-denial, a strict diet without any use of stimulants. When this is pursued not as a fixed discipline, but in the attempt to secure within a limited time a maximum development of efficiency and endurance, the process becomes one of intense hardship and physical torment. During the competition or toward the close of it stimulants are often used and when training is broken there is a very common tendency to go to extremes of eating and drinking. Gotch, the wrestler, has stated that the tortures of training can never be forgotten, while an even more famous athlete ended a season's campaign of sustained effort by a debauch the moment his last engagement had expired. It was of the sort which Americans affect to believe possible only to a German student. The author speaks of the unpleasant impression created by the sight of the boys playing tennis, bicycling and skating with pipes and cigarettes in mouth. Such travesty of sport seems inconceivable, for very much of the benefit of the latter is held to be due to breathing out-of-door air Cocaine has been used more or less on both animals and man as a stimulant in contests. "Doping pills" used in Germany in six-day bicycle races contain both cocaine and caffeine. Cocaine was found upon a test to be very disadvantageous in ski running. The effects of alcohol on physical endeavor have not been brought into harmony, there being evidence on both sides. Much depends on whether the subject tested has some acquired tolerance to the drug. That an abstainer is unfavorably influenced by a prolonged test is conceded. The article will be continued.

**Appendicitis and Scarlet Fever.**—Meyer cites the dicta of several authorities as to the great infrequency of this association. The subject is an interesting one because of the supposed relationship between ordinary angina and inflamed appendix. If the ordinary streptococcus is responsible for the association, we should see it in scarlatina as well as simple streptococcus sore throat. The author has seen one scarlatina case and has obtained notes of another from a colleague. His own occurred in a typical lymphatic child, predisposed to inflammations and hyperplasia of lymphoid tissue. That the case was not a mere coincidence, or a lighting up of a latent appendicitis was crucially shown by the fact that the boy had scarlatina twice, at an interval of about one year and that on each occasion he presented undoubted symptoms of appendicitis. In this connection it is of interest to note that the latter affection has not infrequently developed in the midst of other acute infectious diseases. To return to the author's case the double occurrence of scarlatina was no less a rarity than the appendicitis complication with which it should have become a necessary relationship. He surmises as to whether appendicitis was not the primary lesion, but

concludes finally that the child was the victim of a general infection or sepsis and that the lesions were all metastatic. Cases of this type naturally do not assist in clearing up the border line between scarlatina and ordinary streptococcus sepsis.

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### Münchener medizinische Wochenschrift.

*March* 18, 1913.

**Chronic Appendicitis.**—Krecke enumerates the following data which should aid in the diagnosis of chronic appendicitis from other affections such as chronic colitis. The pain in appendicitis as a rule is boring or lancinating, while in colitis there is simply a sense of pressure or discomfort. In the former affection it is naturally restricted to a single area, and further tends to appear in successive crises. Dependence of pain to some extent on outside influences (exercise, menstruation) speaks for colitis, as nothing without either aggravates or mitigates the pain of appendicitis. If a sensitive point like the McBurney symptom is felt at some other region of the abdomen, for example over the sigmoid, it is probably of colonic origin. McBurney's point may be quite insensitive in chronic appendicitis. If a cordlike or cushionlike resistance is encountered over the ileocecal valve it doubtless proceeds from the colon. Altered stools—constipation, fermentation, admixture of mucus—are very suggestive of colitis but do not exclude appendicitis. Improvement under physical and dietetic procedures speaks against appendicitis as due nervous disorders. The author in this comparison is influenced largely by the reproach brought against surgery on account of alleged "revenue" operations performed in which the appendix is found to be normal.

**Biological Diagnosis of Pregnancy.**—Engelhorn has repeated Adberhalden's dialysis tests of the blood of gravidæ and nongravidæ with results which appear to show that the method will be of limited value for the diagnosis of pregnancy. In 60 gravidæ the reaction was positive in 49, which is not a bad showing, but in 48 miscellaneous nongravidæ no less than 31 reacted positively. In this series the individuals suffered in part from various affections of the genitals, of 11 subjects presumably normal 4 gave positive and 7 negative finds, in 12 cases of genital prolapse 10 gave positive reaction; in 8 cases of carcinoma the percentage was the same each way. The author also instituted a series of experiments in which placental tissue was replaced by cancer tissue, fetal, ovary, and liver, etc. The results were paradoxic in the main. Cancer albumin was disintegrated by the serum of gravidæ 10 times in 12; while when the serum of nongravidæ was used the find was almost identical—8 positive in 11 cases. The author is therefore extremely skeptical as to the specificity of Abderhalden's reaction.

**Poisoning by Mould Fungi.**—Dreisbach relates one of those episodes which appear to occur not infrequently in Germany during the harvesting season, and which impose themselves as influenza, typhoid (paratyphus) and similar conditions. The connection of the disease with the threshing of oats was evident to the patients themselves. It was learned that the straw had become mouldy before threshing. The machine used for the latter purpose sent out dust in clouds. Those exposed developed chills followed by fever, great prostration, headache, arthralgia, nausea, anorexia. Upon inspection the face was congested and perspiring, the compression one of apathy from fatigue. There were bronchial symptoms. The tendency of the malady was to run its course within a few days, although certain symptoms, as cough, persisted in certain cases. The public spoke of the affection as the "threshing disease." The author is unable to find any account of a malady due to mould fungi, and thinks the latter could only explain the bronchial irritation. He seems to believe that another factor set up the general infection, despite the fact that zinc vapor when inhaled sets up the picture of a general infection.

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### Deutsche medizinische Wochenschrift.

*March* 13, 1913.

**Lymphatism and Gastric Ulcer.**—Stoerk sums up an article upon this association as follows: It is in the highest degree probable on the ground of statistics that lymphatism is an essential factor in the genesis of round ulcer of the stomach, especially in the young. The rationale of this association should be somewhat as follows: The stomach of the lymphatic subject should and does contain an increased amount of lymphoid tissue. The projection into the lumen of the stomach of these follicles, by causing the so-called mamellonated state causes a condition of vulnerability. The vessels of the mucosa are also arborescent in this condition and further contribute to the irregularity of the surface. The lymphatic subject also puts up a poor defense to bacterial invasion. While microörganisms do not attack the mucosa primarily they may readily infect ulcers once these are produced and retard their healing. The lymphatic subject is prone to anginas and tonsillitis and acute infectious diseases like typhoid and pneumonia run a course less favorable than in normal subjects. It is also probable that vagotomy is more prone to occur in the lymphatic subject. Another possible causal element is the narrowness of the blood vessels often seen in these subjects. We know that when an ulcer is produced accidentally in the stomach of a normal subject its tendency is to rapid cicatrization.

**Length of Incubation Period of Acute Poliomyelitis.**—Schoug relates a number of cases intended to demonstrate the actual period of latency in the transmission of infantile paralysis. As far as his own material is concerned this should be about four days. There are two possibilities in regard to transmission. First, some blood-sucking parasite may transmit the disease from one person to another direct, which involves the existence of the actual microbic cause in the circulating blood. Second, the germ of the disease may lurk in the nasal discharges of patients and be transmitted to others through the upper air or food passages. The short incubation period announced does not favor one view over the other, although in inoculation by biting flies we should expect necessarily a brief incubation period. In Sweden such a mode of transmission appears to be negatived by the fact that many cases of the disease occur in the winter. Neither is the horse fly so common in that country that many individuals should fall ill at about the same time. Hence the author is obliged to lean toward the theory of propagation by means of the nasal secretion, with participation of healthy carriers.

**Phosphorus in Epilepsy.**—Leubuscher mentions among remedies indicated in epilepsy those which act upon the blood vessels and those which make for disinfection of the alimentary canal. The observation has been made recently that phosphorus exerts power over tetany, an affection commonly believed to depend on autointoxication. He has therefore exhibited phosphorus in a number of cases of epilepsy, giving it over prolonged periods of time. In a number of cases the frequency of the attacks was quite notably lessened. Even after cessation of the treatment the benefit continued and this in the absence of bromide or other therapy. The cases were as a rule severe in type and of long standing. With one exception the epilepsy was genuine in type. The rationale of the treatment is rather difficult of explanation, and Laubuscher is able to say only that we know that phosphorus has the power of modifying metabolism in some manner.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS,

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

*Premiums for Limited Payment Policies:*—Reference has only been made so far to the ordinary or whole life policy, a contract payable at death, with equal annual premiums to be paid during the lifetime of the insured. The net annual premium for the ordinary life policy has been determined by dividing the net single premium by a life annuity, the first payment of the annuity being due at once. It may be added here that this computation must necessarily be based on an annuity payable on the first day of the contract year, because the premiums for life insurance policies are always payable in the beginning of the policy year.

A form of policy, probably the most popular, is one in which the payment of all premiums is completed within a stated length of time, say within ten, fifteen or twenty years as elected by the applicant. Such a contract is termed a ten, fifteen or twenty payment life policy. To compute the premium for these limited payment policies, the net single premium for whole life must be apportioned into a limited number of equivalent payments, the divisor being the value of a temporary annuity instead of that of a life annuity.

A temporary annuity is one which, like a life annuity, terminates with the death of the annuitant, but which, unlike the latter, terminates also when a specified number of payments have been made though the annuitant is still living. The value of a temporary annuity is determined in a way similar to that followed in the case of the life annuity. For example, assume that a temporary annuity of $1.00 a year for ten years is granted to the 81,822 members of the hypothetical company at age thirty-five. By calculating the present worth of the amounts required in each and every year during the ten year period, the total fund which must be on hand in the beginning, may be ascertained. Dividing this sum total by 81,822, the number of the original members, will give the value of a temporary annuity of $1.00, at age thirty-five, and terminating with the tenth payment. In a similar way, the value of an annuity for any stated number of years may be determined.

To ascertain the net yearly premium of ten payment life, divide the net single premium of an ordinary or whole life policy by the value of a temporary annuity of $1.00, terminating in ten years. In the same way, the net annual premium for a fifteen or twenty payment life is computed.

*Premium for Term Insurance:*—A term policy is one payable at death provided that death occurs within a period specified in the contract, say, five, ten, fifteen or twenty years. The contract then terminates even if the policyholder still lives. The process of computing the premium already described is again resorted to. It may be assumed, for example, that the 81,822 members of the hypothetical company are all insured for a period of ten years on the term plan at age thirty-five instead of whole life. The company will only have to pay losses for those who die within the ten years. The mortality table shows that 74,173 members will live beyond the period of ten years and will receive nothing in addition to the protection which was extended to them during this time. By consulting the mortality and interest tables the sum of the present worth of amounts required in each and every year to pay the claims during the ten years may be determined, and this amount divided by 81,822, will give the net single premium of a ten year term policy at age thirty-five. Dividing this net single premium by the value of a ten year temporary annuity of $1.00 at age thirty-five, will give the net annual premium required. The holder of a term policy pays purely for protection during the stated term and when he is fortunate enough to live beyond the period in question, he will have received what he paid for at its exact mathematical cost.

*Premium for Endowment Insurance:*—Endowment insurance has been devised for those who wish to make provision for their own futures, in addition to providing for their dependents. To meet this end, the endowment policy is one which is made payable to the insured himself if he lives through a specified number of years, or to his beneficiary in the event of his prior death.

The regular endowment policy is a combination of term insurance and what is known as pure endowment. The latter form of policy is payable only to those who live to complete the endowment period, and according to its terms no payments are due in the cases of those who die prior to the termination of the contract; in other words it is purely investment insurance and the very opposite to term insurance.

To compute the rates paid for pure endowment, it may be assumed there is a proposition to issue a ten year pure endowment policy for $1,000 to each of the 81,822 members of the hypothetical company, at age thirty-five. During the next ten years, 7,649 members will die according to the mortality table. These will receive nothing, but there will be 74,173 survivors who are to receive $1,000 each, requiring a total payment of $74,173,000. The present worth of that sum is $52,582,648.99, and this amount divided by 81,822, gives $642.65 as the net single premium of a ten year pure endowment policy at age thirty-five.

It has been stated that the holders of pure endowment policies receive nothing if they die before the termination of the contracts. If, however, each of the 81,822 members carries term insurance also during the same period, the sum of $1,000 is payable to the beneficiaries of each of the 7,649 members who die during the ten years. By combining, then, the premium of a term policy with that of a pure endowment, the premium of the regular endowment policy is determined, providing for both those who live and those who die.

The chief interest in pure endowment, which is seldom written, lies in the part played by the computation of its premiums in ascertaining the premiums for the regular endowment policy.

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**Prevention of Fraud in Life Assurance.**—In a meeting of the Life Assurance Medical Officers' Association, on May 1, 1912, in London, Dr. John Howitt brought up the following points of interest. It is of importance to examine the pupils and reflexes generally. Also the urine of patients should be passed in the office and not brought in bottles. In regard to the question on the daily consumption of alcohol it is always more or less a premium on lying and answers to this question must usually be regarded with suspicion.

# Book Reviews.

Outlines of Physiology. By Edward Groves Jones, A.B., M.D., Professor of Surgery in Atlanta School of Medicine, and Allen H. Bunce, A.B., M.D., Associate Professor of Physiology in the Atlanta School of Medicine. Third Edition, Revised. 111 illustrations. Price $1.50. Philadelphia: P. Blakiston's Son & Co., 1912.

This work presents the essential facts of modern physiology as related to the practice of medicine. As an introductory book it can be warmly recommended, but it is too elementary to be used as a textbook by medical students, and does not contain enough even for the average State board examinations. Prospective medical students might read it with much advantage before beginning their medical studies.

The Ship Captain's Medical Guide. Edited by Charles Burland, M.D., F.R.G.S., Senior Medical Inspector of the Board of Trade. Price 2s. London: Published by His Majesty's Stationery Office, 1912.

This handy little volume is meant for use by the captain and officers of those numberless ships which do not carry a physician. The book is issued officially by the Board of Trade of England, and it seems that it should be of the utmost use not only to seafarers but also to others who are far away from skilled medical assistance. The plan of the book is excellent; it is written in plain language, so that there can be no misunderstanding. Under the heading of venereal diseases, the value of prophylaxis is emphasized. The prescriptions at the end of the book are written in full and in plain English, so that they may be copied and taken ashore when possible, without risk of error, or prepared on board ship by any one possessed of normal intelligence.

A Compend of Histology. By Henry Erdmann Radasch, M.Sc., M.D., Assistant Professor of Histology and Embryology in the Jefferson Medical College. Third Edition, Revised and Enlarged, with 111 illustrations. Price $1.25. Philadelphia: P. Blakiston's Son & Co., 1912.

This work has been revised and to some extent rearranged. In its new form it will be found to be a satisfactory guide for the medical student. It is more complete than compends usually are, and yet it is not so large as a textbook. The author has succeeded in providing a small book, which is well arranged, plentifully supplied with the right kind of illustrations, and which bids fair to become as popular as the other volumes of the series.

E. Merck's Annual Report of Recent Advances in Pharmaceutical Chemistry and Therapeutics. Volume XXV. Darmstadt: E. Merck, 1912.

Merck's Annual Report is well known. It collects the most important items from literature and presents them as impartially as possible. The annual edition has now reached the number of 60,000 copies, and it is published in four languages (English, German, French and Russian).

The Science of Hygiene; a Text Book of Laboratory Practice for Public Health Students. By Walter C. C. Pakes, D.P.H. (Camb.), F.I.C., late Demonstrator of Sanitary Science and Bacteriologist to Guy's Hospital, etc., etc. New Edition. Revised by A. T. Nankivell, M.D. (State Medicine), B.S. Lond., D.P.H. (Camb.), etc. Demonstrator of Public Health, King's College, University of London. Price $1.75. New York: D. Van Nostrand Company, 1912.

This little volume should prove a useful supplement to any standard work on hygiene. It gives a very systematic and clear account of the chief processes required in the laboratory, and supplies a concise but adequate explanation of each process. The book deals with analysis of water, milk, butter, flour, bread, coffee, spirits, wines, beer, vinegar, air and soil; disinfectants, microscopy, and meat inspection. There are several helpful illustrations.

Progressive Medicine; a Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D. Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; Assisted by Leighton F. Appleman, M.D. Instructor in Therapeutics, Jefferson Medical College, Philadelphia. December 1, 1912. Price $6.00 per annum. Philadelphia and New York: Lea & Febriger.

The current number of Progressive Medicine contains articles on: Diseases of the Digestive Tract and Allied Organs, by E. H. Goodman; Diseases of the Kidneys, by J. R. Bradford; Genito-Urinary Diseases, by C. W. Bonney; Surgery of the Extremities, Shock, Anesthesia, Infections, Fractures and Dislocations, and Tumors, by J. C. Bloodgood; and Practical Therapeutic Referendum, by H. R. M. Landis. All of these contributions are of value, but special mention should be made of the sections dealing with shock, and anesthesia and blood-pressure. These latter are of more than passing interest.

A Manual of Surgical Treatment. By Sir W. Watson Cheyne, Bart., C.B., Hon. Surgeon-in-Ordinary to H. M. the King; Senior Surgeon to King's College Hospital; and F. F. Burghard, M.S. (London), F.R.C.S, Surgeon to King's College Hospital, and Senior Surgeon to the Children's Hospital, Paddington Green. New Edition entirely revised and largely reprinted with the assistance of T. P. Legg, M.S. (Lond.),F.R.C.S., Surgeon to the Royal Free Hospital; Assistant Surgeon to King's College Hospital; and Arthur Edmunds, M.S. (Lond.), F.R.C.S., Surgeon to the Great Northern Central Hospital, Paddington Green. In five volumes. Vol III. The Treatment of the Surgical Affections of the Joints, the Spine, the Head, and the Face. Price $6.00. Philadelphia and New York: Lea & Febiger, 1912.

The present is the third volume of the new edition of this well known English work on surgical treatment and includes the description of the treatment of the surgical affections of the joints, the spine, the head, and the face.

As it was found impracticable to incorporate the many changes in this field, the book has been entirely rewritten and so altered as to bring it up to date. The authors have intended their book for the practitioner who is believed to be already acquainted with the pathology, symptomatology, and diagnosis of surgical conditions, and have therefore given all their attention to presenting in full the detailed information as to the best methods of treatment. They have succeeded in their task, as is well shown by the favorable reception which the work met with in its first edition.

The present volume is well printed and sufficiently illustrated to meet all ordinary requirements. A more detailed description of its contents is unnecessary in this connection, and it may suffice to say that Cheyne and Watson's Manual constitutes one of the best works of its kind in English text-book literature.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M.D., Fellow American Proctological Society; Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine; Attending Proctologist, Harper Hospital, Providence Hospital, and U. J. C. Clinic, etc., Detroit, U. S. A. With 172 illustrations, mostly original, including four colored plates. Second edition, revised and rewritten. Price $4.00. St. Louis: C. V. Mosby Company, 1913.

The present edition has been entirely rewritten and forty new illustrations, including two colored plates, have been added, and the entire book has been reset. The book is written in the hope that the medical profession will arouse itself to the possibility of this line of work and not allow the charlatan and the advertising quack to take from them work which can be done by the legitimate practitioner of medicine. Special attention has been paid to office work in rectal diseases and the part that local anesthesia plays in this class of work. Dr. George W. Wagner contributes a chapter on "The Feces and Their Clinical Examination," which adds much to the value of the work.

Klinik der Nierensteinerkrankung. Von Dr. med. Wilhelm Karo. Price, 1 Mark. Berlin, Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1913.

This pamphlet, which is No. 6 of the fourth volume of the Sammlung zwangloser Abhandlungen aus dem Gebiete der Verdauung und Stoffwechsels-Krankheiten, contains the etiology, symptomatology, diagnosis, and treatment of nephrolithiasis. The author remarks that the subject of stone in the kidney is of equal interest to the internist and the surgeon. To the latter because the end product of this disease, the stone, is a foreign body which may lead to severe lesions of the kidney substance. The unquestionable relation between trauma and stone formation is also of interest to the surgeon. The investigations of this condition for the past ten years have an important bearing to internal medicine. A positive basis has been given for the intimate connection of calculus and metabolism. Light has also been thrown upon the more exact study of the chemistry and mechanism of the renal urinary secretions which is of direct value for the knowledge of the formation of stones. Further, the chemical examinations of the solubility of the concrements have furnished a scientific basis for a rational internal therapy.

# Society Reports.

## REPORTS FROM THE TUESDAY CONFERENCES OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.

### First Division—Dr. Joseph Collins.

**Fracture-Dislocation of the Cervical Vertebræ Causing Injury of the Fifth Pair of Anterior Spinal Nerve Roots, with Subsequent profound Muscular Atrophy.**—In presenting this case for Dr. Collins, Dr. Sharpe said most operations upon the spinal cord are undertaken to relieve the pressure of old fracture-dislocations of the vertebræ or of tumors. The symptoms and signs of these conditions are becoming more and more clearly defined so that the exact location of lesions of the spinal cord is being made more frequently. Although the localization of lesions of the spinal cord is less difficult than of the brain itself, yet in spinal cord lesions mistakes are not infrequent and the greatest care must be used in each case. The following case is interesting chiefly from the diagnostic point of view. Had the diagnosis of pressure upon the spinal cord itself been made in this case laminectomy would have been advised and it is doubtful if any benefit would have resulted. The difficulties of making a definite diagnosis, however, are many.

This patient, an Austrian Hebrew, 32 years of age, came to the clinic on December 12, 1912. His history was as follows: Six weeks ago, while in good health, he fell from a ladder, which had twisted beneath him, to the roof below, a distance of 20 feet and struck upon the top of his head. He did not lose consciousness but he yelled lustily for help. His friends helped him to his feet and he walked a distance of fifty feet to an ambulance which took him to a hospital in which he remained from 10 a. m. until 7 p. m., when he decided to return home. Even at this time he required some assistance in pulling his undershirt and shirt over his head. During these hours of residence in the hospital he had severe pain in both upper arms, in both shoulders, and in the back of the neck, but he could still raise his head and turn it slightly. He remained in bed for two weeks at home; the pain gradually lessened in severity and the patient regained power to raise the head from the pillow. For the first few days after the accident there was difficulty in breathing and a sensation of weight in the thorax. During the past four weeks the patient has gradually become more and more active—walking about, but the power of both shoulders and the upper arms has not returned, and he is unable to pull his shirt over his head. There is no marked disorder of respiration at present; but he complains of an occasional dull aching sensation in both shoulders and upper arms and at the site of injury, especially when coughing. There is no impairment of sensibility of the arms or legs nor has there been. His voice and articulation seem quite normal.

Patient has had a cough ever since he can remember. Five years ago he was advised to take a "lung cure" in the lower part of Austria. This he did, and the examining doctor there told him his lungs were "all right," but that he had an "enlarged liver" and patient has been slightly "yellow" ever since. The cough has remained the same for years—no definite blood observed; no night sweats. Patient has lost 15 pounds since the accident. Venereal disease is denied. Nocturnal urination—two or three times and it "burns." Appetite, fair since the accident. Bowels regular daily. No digestive complaints. Patient lost the left eye sixteen years ago as the result of a quarrel with his sister, who threw a fork at him, puncturing the left eyeball.

Physical examination shows a man of 32 years whose face has an anxious expression. Somewhat emaciated; yellowish tint to the conjunctiva; coughs repeatedly, raising much whitish phlegm. He stands with his head and neck thrust forward, his square shoulders raised posteriorly and his arms hanging limply down his sides; a mild degree of lordosis. General examination: the patient is wearing a left glass eye; the heart is negative; the lungs are dull at both apices, especially the right, and many moist râles are heard throughout both lungs—a chronic bronchitis. The abdomen is enlarged over the right hypochondriac region, and upon palpation the liver is found to extend downwards to within 3 cm. of the right iliac crest; the left lobe also extends almost down to the level of the umbilicus. Its surface is smooth, and it has a sharp lower border, not tender nor nodular. Spleen not palpable. No free fluid. No masses are to be felt. Laboratory examinations are practically negative.

*Local Examination* shows pupil (right) moderately dilated; reacts normally to light and to accommodation. Cranial nerves, negative. There is marked atrophy of

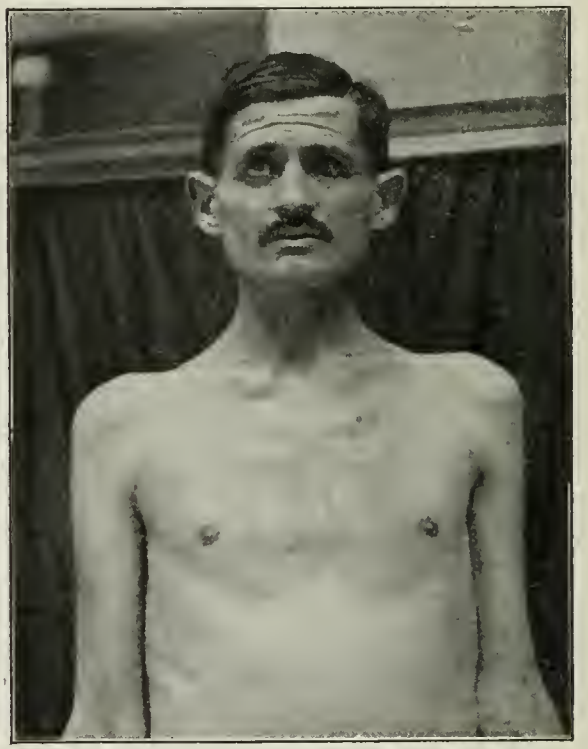

Fig. 1.

the muscles of each shoulder and of each upper arm—deltoids, pectoral muscles, supra- and infraspinati muscles, biceps, triceps, and supinator longi. (See Figs. 1, 2, and 3.) The patient cannot raise the arms up to the level of the shoulders. Use of the forearms and hands normal. No atrophy of the intrinsic muscles of the hands. Grip, normal. No impairment of sensation of touch, temperature, postural, or pain.

The electrical reactions show some variation in the response to stimuli—a general hyperexcitability, with no reaction of degeneration. The deep reflexes of the arms are normal; of the legs, at times those of the left side are greater; at other times, those on the right. No clonus. No Babinski.

At the back of the neck there is a marked prominence of the fifth cervical spine, due chiefly to an anterior displacement of the fourth cervical vertebra (See Fig. 4). Slight tenderness at this point. There is slight limitation of lateral twisting of the neck, also in flexion and in extension.

The positive signs therefore are, marked atrophy of

both spinati, pectorales, deltoids, biceps, triceps, and supinator longi muscles; no reaction of degeneration; the anterior dislocation of the fourth cervical vertebra with a fracture of the fifth cervical vertebra; the arm reflexes are present. It should be noted that there is no impairment of sensation; no alteration of the superficial deep reflexes of the lower extremities; no Babinski; no rectal nor vesical disturbance and no atrophy of the intrinsic muscles of the hand. Theoretically, the lesion which would easily explain this symptom complex would be an injury of the anterior roots of the fifth segment—that is a motor lesion entirely; the absence of sensory disturbances and the presence of the normal reflexes of the trunk and lower extremities would thus be explained. The absence of sensory disturbances in the arms eliminates a lesion of the upper branches of the brachial plexus.

However, when the history is considered that there was no paralysis until two days after the accident, and that then the paralysis came on rather slowly, we are re-

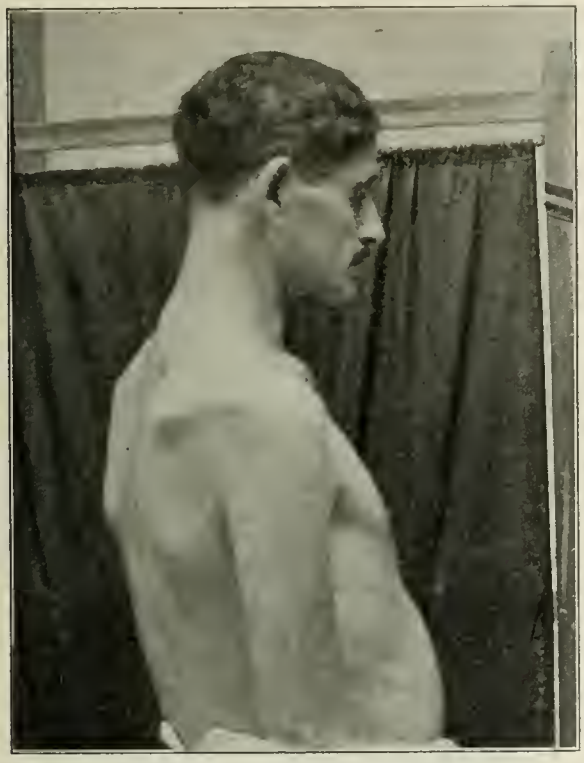

Fig. 2.

minded of the condition of hematomyelia; the fact that there are no sensory disturbances of light touch and of temperature and no change in the reflexes makes this diagnosis rather doubtful; there are cases of hematomyelia reported, it may be said, which have not shown any sensory disturbances. It seems improbable, however, that similar hemorrhages could occur in both anterior horns of the fifth segment—small enough to cause the above signs and yet not large enough to affect the pyramidal tracts anad the sensory paths.

The amount of anterior dislocation of the fourth cervical vertebra is well shown in the skiagraph. It is difficult to conceive of such occurrence without consequent severe injury of the cord itself, but in this case there are no genuine indications of myelomalacia and no signs of real cord injury. On the other hand, the course of the symptoms as well as their occurrence indicate partial destruction of anterior nerve roots, particularly of the fifth segment. Little success has attended efforts to suture torn anterior roots. They are difficult to get at, and when we neurologists and nerological surgeons meet them the proper time for operating has long gone by. What we propose to do now in this case is to make an exploratory incision in the side of the neck similar to that made for repairing the brachial plexus and thus ascertain the condition of the nerve roots as they pass

Fig. 3.

through the intervertebral foramina. If the point of rupture is at the intervertebral foramina it may be quite possible to suture it—that is, bring the distal end of the fifth torn nerve root to the side of the sixth nerve root and so obtain a nerve that will fracture. A man

Fig. 4.

who has pulmonary tuberculosis is not a good surgical risk, but laminectomy is not a serious operation when properly and skillfully done. Without operation his chances of recovery, we think, are slight.

Second Division—Dr. Frederick Peterson.

**A Case of Infantilism, with Pronounced Dysthyroidal Features.**—Dr. R. H. Hoffmann presented the patient, N. F., who was referred by the principal of the DeWitt Clinton High School as a case of mental as well as

physical deficiency. He is twenty-one years of age and has advanced in his studies as far as the average boy of fourteen. He seems to be utterly incapable of mathematics. In the family history consanguinity plays a rôle: his parents are stepbrother and sister; four other chil-

Fig. 5.

dren are normal in mental attainment and in stature. Until his sixth year the patient seemed to be a normal child except that he was somewhat undersized. This dwarfism continued to his twelfth year, during which time his height remained the same. At twelve he entered school and his progress, though dependent upon considerable effort, was practically uninterrupted. He grew very little in the interval and acquired the physical characteristics that stand out so prominently at present, and which place the patient in the obscure class of internal secretion anomalies.

Laboratory investigation has given us practically nothing that would help in isolating a single gland of internal secretion as a causative factor in the production of this infantile state. The blood picture is normal. The urine, feces, and gastric chemism have shown no deviation from natural findings. His sugar tolerance is normal. *X*-ray of the skull by Dr. Cole showed the sella turcica well marked and no abnormal variation. The systolic blood pressure varied between 100 and 110; the diastolic between 70 and 80. One is thus forced to depend rather upon the empiricism of clinical observation and for the time being at least to categorize the patient with those cases that have shown a similar picture and whose study has revealed a definite anomaly of a specific gland or to a greater or less degree of the entire chain of the ductless system. Viola and Prude have found in an exhaustive study of four cases that no single gland was responsible for the infantilism. Bramwell, however, described clinically a pancreatic type, showing an absolute pancreatic deficiency that improved remarkably upon pancreatic therapy. The true myxedematous types of Brissaud are well known and their metabolism has been profoundly studied. The patient is 4 feet, 1½ inches high. (Figs. 5, 6.) He weighs 76¾ pounds stripped; chest, inspiration, 30 inches; expiration, 29 inches; abdomen, 30 inches; thighs, 8 inches above knees, 16½ inches; prominence of calf, 11 inches. As he stands, one is impressed by the rounded, chubby face; the double, folded chin; the fine, thin, silky hair; the absence of the outer half of the eyebrows. The nose is not snubbed. The skin is fine, delicate, and marbled. The extremities are plump and taper at the ends. The body and neck are covered with cushions of fat. There is an absence of hair in the pudendal and axillary regions. The genitals are rudimentary. He has, however, had an occasional erection. The testes are very small, but completely descended. Physical examination shows the heart and lungs to be normal; no anomaly of the abdominal viscera. The teeth are good. The thyroid gland and cartilage are not palpable. There is no presternal dullness. His temperature is normal. His pulse rate has been found to vary between 90 and 110 per minute.

In short, he is not myxedematous and yet he fits most logically into a dysthyroidal picture—in this case, perhaps, a dysthyroidal state that is to a certain degree self-compensating. That this is not the only cause no

Fig. 6.

one will seek to deny. Nevertheless, it stands out preeminently over other symptom groups that we have been wont to class together as belonging to a single gland anomaly.

THIRD DIVISION—DR. PEARCE BAILEY.

**Recovery from Organic Paraplegia.**—Dr. BAILEY presented a patient who had been shown several times before at the conferences when almost completely paralyzed in both legs. Man, aged twenty-six; clerk; admitted September 19, 1910. The patient was an athlete and declared that he was perfectly well until about one month before admission. Then he began to be unsteady on his feet, which was soon followed by numbness in the lower limbs. The limbs ached at times. The symptoms gradually progressed. He left the hospital in October, but returned on December 4 with all of the symptoms aggravated. At this time both lower extremities were spastic, with exaggerated knee- and ankle-jerks, clonus, and Babinski. He now complained of burning sensations in his lower limbs and there was a diminution in all three sensations up to the level of the twelfth dorsal spine. After a short stay in the hospital he again left, only to return January 8, 1911. The burning sensations in the lower limbs were worse and were accompanied by shooting pain in the left groin, the lower limbs were weak and spastic so that he could hardly drag himself around with help. There was some slight sexual disturbance. The right lower extremity was now weaker than the left; both knee-jerks were exaggerated, the right one more so. Ankle-clonus and Babinski were elicited on both sides, more marked on the right. Abdominal reflexes could not be elicited. There was a marked diminution of all three sensations below the tenth dorsal segment.

Although there were no definite surgical indications, experience with other obscure affections in which relief had followed decompression, brought up the question of operation and, at the patient's urgent request, Dr. Elsberg, on January 20, 1911, removed the spinous processes and laminæ of the seventh to tenth dorsal vertebræ. Nothing abnormal was found. One week after the operation, the patient could recognize heat and cold on all parts of both lower limbs, and the hypesthesia and hypalgesia were much less marked. He was able to move his lower limbs much more freely; a great deal of the spasticity had disappeared. Patellar reflexes only slightly exaggerated, no ankle-clonus, no Babinski. Three and a half weeks after the operation there was still some improvement. He could move his lower limbs more freely, but the spasticity was as marked as before the operation, with patellar reflexes again exaggerated; there was bilateral ankle-clonus and Babinski on the right side.

The patient was discharged from the hospital two months later and became steadily worse. He was confined to bed, unable to work at all; lost control of the sphincter; became anesthetic to the waist, *i.e.* developed a typical picture of sensori-motor paraplegia. This condition persisted unchanged for several months. Then improvement set in, gradually, until in the winter of 1911-1912 the man began to walk with crutches and the other symptoms receded. In June of 1912 he called at the hospital, walking stiffly but without support. From then on he progressed rapidly, so that by the middle of the summer he could swim a mile, walk five miles, could jump and run, and had no sensory or sphincter trouble.

To-day, January, 1913, the patient presents few remnants of the paraplegia. He walks easily, can jump, stand on heels or toes, start and stop suddenly. Both knee-jerks are active, but the foot clonus and Babinski have disappeared on the left and are only slightly present on the right, the side which was always most affected. He has no other symptoms, feels in perfect health, commutes every day to business, which he resumed last autumn. No hypothesis satisfactorily explains this miraculous recovery. The patient presented symptoms which pointed unequivocally to organic interference with the spinal cord—namely foot clonus and Babinski, together with other signs of paraplegia. Exploration revealed no pressure or other evidence of disease. The most probable explanation at first, and the one we adopted when the patient left the hospital, was that a patch of intramedullary sclerosis, which was a part of the general disease, multiple sclerosis, was at the bottom of the condition. But the subsequent recovery is more complete than is to be looked for in multiple sclerosis. In that disease there is a wide fluctuation in symptoms which interfere with function, *i.e.* in paralysis, or rigidity, or sensory disturbances. But in the past we have relied on the persistence of the fundamental neurological signs—the foot clonus, the Babinski, the nystagmus, etc.—for diagnosis. If they disappear there is little left to sustain the diagnosis. So in this case. We have watched all the organic signs slowly fade away, until now a one-sided Babinski and slight foot clonus are all that are left.

It seems possible that this case represents one of those little-explored conditions, first described by Horsley, in which changes in intramedullary circulation may bring about the symptoms of definite fecal disease. The successful issue of certain cases of spinal decompression, in which the operation, although it reveals nothing, is followed by recovery, lends some support to such a view.

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## THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Special Meeting, Held March 7, 1913.*

THE PRESIDENT, DR. BROOKS H. WELLS, IN THE CHAIR.

**The Prevalence of Catarrhal Deafness and Its Economic Consideration.**—Dr. HAROLD HAYS read this paper. (See page 646.)

Dr. W. SOHIER BRYANT said that the individual sustained a tremendous loss in many ways when he was deaf and life insurance companies advanced the premiums paid on the insurance of one who was deaf to 95 per cent. of total disability. He wished to call attention especially to the enormous importance of a knowledge of the prevalence of catarrhal deafness and to its etiology and prevention. Its prevalence in any community was even greater than given by Dr. Hays. With regard to the etiological factors concerned, they all knew that catarrhal conditions of the ear were dependent upon affections of the nose and throat and especially of the latter as well as of the nasopharynx. The nasopharynx was intimately connected, as it were, with civilization, exposed to all kinds of stress as under- and overfeeding, under- and overclothing, and all sorts of causes which resulted in irritation. There were occupational conditions, the business life in the city, and all the conditions incident to the competition for existence. Again there were the impurities in the air, mechanical, gaseous, or bacterial. Dr. Hays had stated that many diseases were derived from the air breathed and one should make it a rule to look at the nasopharynx. The reason for this was that the Eustachian tube opened into the nasopharynx and its function was interfered with when changes occurred in the mucous membrane of this region. Dr. Bryant thought that if they chose to consider their obligations to the public, they could do a great deal by advising people near them how to lead a hygienic life in relation to the nasopharynx and a great deal could be done in spreading this knowledge far and wide. The public was eager to gain information and efforts to this end fell not only upon the otologists but upon the general practitioners.

Dr. PHILIP D. KERRISON said that this was a very interesting subject, but one to which he had given but little thought, *i.e.* the relief of people already deaf. He did not see how these people could be relieved except by some special treatment and what Dr. Bryant had stated about the etiology showed a way by which some good work might be accomplished. The public should be better educated with regard to the prevention of this condition; if the general public understood better the causes of deafness a great deal could be done towards avoiding the lesions which occasioned it; or, after certain lesions were established, leading such lives as would prevent undue progress in their development, as in sclerosis or catarrhal deafness. With regard to so many patients presenting themselves at the clinics, the reason was, he believed, be-

cause so much time was required for examination and patients had to return, and this tended to congest the clinic, a very regrettable thing. As a result less treatment was given for deafness than for aural lesions. If they could have a clinic devoted to the care of those who were deaf it would be most desirable. The only thing that suggested itself to him in this connection was the desirability of the education of the people, so that they could understand the causes of deafness and also what produced the rapid progress of the lesions. There should be some means provided by which deafness and the diseases which gave origin to deafness could be subjected to intelligent and careful study. It was a cause for regret, well recognized by all, that these patients did not get the careful study and treatment in the hospitals and clinics warranted by effects of deafness.

Dr. Charles G. Am Ende said the absolute inability to relieve these conditions described by Dr. Harold Hays vividly portrayed deplorable conditions and imposed upon the general practitioner the importance of the prevention or abortion in the early stages of the diseases leading up to them. From this point of view he wished to report as probably new that chemically pure nitrate of sodium when given in 10 to 15 grain doses dissolved in water, by itself or in admixture, was a very efficient remedy to cut short catarrhal diseases, colds, etc. The crude drug, Chile saltpeter, occasionally dispensed, had very little effect. When the influenza bacillus, caught from a sneezer in a car, or a patient before us, signified its advent about thirty-six hours later by a slight tickling in the region of the middle turbinated bone and irresistible sneezing, but without general systemic symptoms at this time, it was easily killed by brushing up into the nose the following: iodine, one grain; sodium iodide, 5 to 10 grains; distilled water, one ounce and a half. In the case of an old catarrhal subject very satisfactory results were reported from the following: Chlorate of potassium and boric acid, of each, one ounce; alum and chloral, of each, ten grains, dissolved in one quart of boiling hot water, and diluted; three tablespoonfuls of this solution with ten to twelve tablespoonfuls of tepid water for snuffling and gargling as often as desirable. Upon involvement of the Eustachian tube improvement was obtained from the old prescription: iodine, camphor, menthol, each twenty grains, alcohol two drams. Cotton saturated, but not oversaturated to avoid solution running off, with this solution, was loosely packed into a two-ounce bottle with a rubber stopper with two holes, through each one of which a glass tube was inserted. One of these two glass tubes somewhat bent near its lower end reached to near the bottom of the bottle beneath the lumps of cotton, while its other end protruded above far enough for connecion with a compression rubber bulb. The other glass tube reached below just to underneath the stopper, while its other end above connected with the catheter by a rubber tube provided with a conical glass or rubber piece to fit into the catheter.

Dr. William Kelly Simpson believed that the reason people did not apply for treatment of their deafness in greater numbers was because of the universal idea that there was nothing to be done for deafness. Very much depended upon the condition of the nasopharynx and of the nose; in some cases the treatment directed toward the correction of any lesions there would result in the relief of the patient, whereas in another patient with a similar condition in the nasopharynx, or nose, or both, would not be benefited at all. That was an every-day experience. One of the worse phases of medical practice was that they were so often unable to benefit the deaf; they should attempt to make some definite advance in the treatment of deafness, and it should not be forgotten how much depended upon the condition of the nasopharynx and of the nose. Often deafness would continue even after the nasopharynx and the nose were gotten into a normal condition. Gout, rheumatism, and certain toxic conditions were at the bottom of the condition many times; gout especially was one of the most common causes. Dr. Simpson said he would certainly like to see the medical profession get away from the stigma under which it was suffering and see if it could not do something to improve deafness by treatment.

Dr. Harold Hays said that many of these conditions started early in life, and when seen by the specialist there was little that could be done; in other words the alterations of the connective tissue about the ear were such that they might be likened to the condition in the nervous system in cases of locomotor ataxia. To-day it was recognized that there were various kinds of conditions about the ear, such as sinus disease, which interfered with hearing, but if one took a little child and restored the hearing at the time when the pathological process was subacute the child would not be likely to suffer from deafness later on. With regard to publicity it was necessary to instruct people regarding the care of the ears the same as one instructed them how to avoid tuberculosis and infectious diseases. They should be made to understand many of the troubles which resulted in deafness and told how to prevent them. If one totaled up the cases of catarrhal deafness occurring in one's private office and compared them with the cases that appeared at the clinic he would find a larger percentage in the office than in the clinic and this he believed was the fault of the otologist. Very often these patients became sick and disgusted with the time spent on them and just at a time when a great deal could be done for them. It was a noteworthy fact that these catarrhal conditions were not of as much interest to the otologist as were the acute cases. Certain clinics should be maintained for these deaf cases. Unfortunately they were not able to examine the pathological specimens, such as those of the eye and other parts of the body, because one could not take away an ear for purposes of examination before death; after death the pthological changes were such that nothing could as a rule be made out of them.

**The Group of Peritoneal Adhesions Due to Colonic Bacteria.**—Dr. Robert T. Morris read this paper. (See page 645.)

**Photographs in Color of Rare Pathological Specimens Taken from Autopsies at the City Hospital.**—Dr. Orrin S. Wightman described the apparatus used by them in the preparation of the slides. The photographs in color were shown with Lumiere process lantern slides.

Dr. John H. Larkin gave the pathological exposition of those slides.

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## MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

*Stated Meeting, Held February 17, 1913.*

The President, Dr. Reynold Webb Wilcox, in the Chair.

**Protest Against the Reporting of Venereal Diseases.**—At the annual meeting of the Association, held January 20, the following resolutions, presented by Dr. William S. Gottheil, were adopted:

"*Resolved,* That the recent official request of the New York Board of Health for all physicians to report promptly to them all cases of syphilis, gonorrheal infection, and chancroid, together with the source of infection, if attainable, is an undesirable and useless invasion of the most confidential relationship between physician and patient. The mere compilation of statistics in venereal diseases has no value, and the attempt to make it is a direct incentive to falsification and disobedience to the law. The measure is of value only as a step toward the relegation of the care of this class of cases to the Board of Health, and the ultimate effect will be to promote self-medication and quackery.

*Resolved,* That a committee be appointed to arrange suitable action in regard to this matter, and report at the next meeting of the Association."

This committee, through its chairman, Dr. Robert E. Coughlin, reported as follows: "The special committee recommends that the secretary of the Medical Association of the Greater City of New York be instructed to send copies of the resolutions of condemnation relating to the reporting of venereal diseases to his Honor the Mayor of New York and to the President of the Department of Health." On motion, the report of the committee was unanimously accepted.

**Report of a Case of Hibbs' Operation for Pott's Disease.**—Dr. A. Ernest Gallant presented this report, with photographs and radiographs. The case was referred to him by Dr. J. D. Trezise of Brooklyn. The patient, a female, thirty-four years old and weighing 101 pounds, stated that she had had deformity of the spine for the past two years, and an *x*-ray picture taken October 2, 1912, showed the tenth, eleventh, and twelfth dorsal vertebræ to be affected. The operation was performed on October 5, and by the end of four weeks the patient was entirely relieved of pain. She was kept in bed for a few weeks, and afterwards wore a brace. Later, she was fitted with a suitable corset and returned to her home in Pennsylvania. Early in December she wrote that she had walked two miles and on December 30 that she had gained six pounds. Dr. Gallant stated that the *x*-ray pictures did

not show whether there was actual ossification at the seat of operation at present.

**Eyestrain: Etiology; Indirect Effect Upon the Function of Other Organs; Symptomatology.**—Dr. Isaac Hartshorne said that the term eyestrain was generally understood to mean that varied and complex group of symptoms resulting from errors of refraction or imbalance of ocular muscles. Having explained the conditions in myopia, hyperopia, and astigmatism, he said that in high errors of refraction the ciliary muscle soon tired of trying to overcome the defect, and the blurred images of irregular diffusion remained to irritate the retina. Low hyperopic errors were easily overcome by ciliary action, and as in such cases the constant stimulation to see better resulted in either muscular fatigue or hypertrophy, or both, low errors were often more productive of malfunction than high ones. Since the myope could not impove vision by ciliary effort, he received on the retina the full effect of the irregular diffusion produced by whatever amount of astigmatism he might have. The indirect effect of eyestrain upon the function of other organs could be appreciated by a consideration of the nerve elements involved in the ocular mechanism. For a muscle to do enough work to become hypertrophied or fatigued required an abnormal amount of motor nerve supply. Individuals with a superabundance of nerve force did not feel any effects from this kind of energy expenditure, while in those possessed of only a limited amount an extravagance on the part of one organ meant a lack of normal supply to and consequent malfunction of some other organ. The fact that one-fourth of all the cranial nerves were required to supply the eye-muscles showed how much motor nerve energy was needed for normal ocular function, and also how great the opportunity was for a waste of nerve force when these muscles were overworked. Retinal irritation from irregular diffusion and congestion of the muscles were transmitted as sensations of pain by the trifacial nerve and caused much headache. Muscular fatigue resulted in variations in the distinctness of vision, and the effort to innervate the tired ocular muscles was often productive of twitching of the eyelids and of the facial muscles, as seen in the various habit spasms. Some of the local symptoms of eyestrain which had been noted were screwing of the lids in myopia and astigmatism, elevation or depression of an eyebrow, abnormal wrinkles, constant blinking of the lids, tilting of the head, many chronic inflammatory conditions of the lids and conjunctiva, and enlarged pupils and photophobia. While some patients showed local inflammatory conditions and apparently no reflex irritation, others would appear to have no ocular deformity, but presented reflex disturbances which, after other organs had been excluded, might be regarded as due to ocular difficulty. The speaker's experience agreed with the quoted statement that an ocular cause might be suspected in all headaches which occurred regularly and got worse in the afternoon, which were increased by close work and relieved by rest and on holidays, or which occurred only during certain occupations. Many of the symptoms of fatigue, irritability, and nervous irritability from which women suffered during the menopause were often really due to the sudden onset of presbyopia. Functional disease of the digestive tract associated with continued application and nervous tension and cases of dizziness and so-called bilious attacks, were often due to eyestrain, as evidenced by the relief afforded by glasses. Again, some cases of migraine, epilepsy, chorea, neurasthenia, and psychasthenia were benefited by removing whatever irritation might be present from eyestrain. Glasses were a labor-saving device to prevent or offset the disastrous results of eyestrain. Refraction was an art, and not an exact science. To obtain the best functional results the hyperopic, myopic, or astigmatic errors should be estimated as closely as possible. Astigmatism, the most difficult part of refraction, required special attention, involving training, care, patience, and consequent skill. Lens grinding was an exact science, and the time would come when the profession would be as zealous for accuracy in optical production as we were now becoming for purity in drugs. At present it was a fact that about fifty per cent. of oculists' prescriptions were not accurately filled.

**Clinical Indications for the Mastoid Operation.**—Dr. W. Sohier Bryant read a paper on this subject. Formerly, he said, the accepted indications for mastoid operation were: symptoms of cranial and hemic complications, labyrinthine suppuration, fistula of the mastoid process, facial nerve or abducens nerve paralysis, fluctuation, edema, or deep tenderness over the mastoid region, rise of temperature, and headache—all associated with middle ear suppuration and chronicity. At times there was difficulty in estimating the true importance of the various symptoms, and it often happened that cases which required immediate operation were delayed because of absence of some of the classical symptoms. Atypical cases with absence of any direct evidence of mastoiditis were either not diagnosed until it was too late to save the patient's life, or a tedious recovery followed a delayed operation. Until comparatively recently mastoid operations were on principle deferred until softening of the bone had occurred; expectant treatment holding out the hope of convalescence without operation. Formerly also the prognosis of the results of the operation were most discouraging: usually a slow, weary convalescence with many painful postoperative dressings, and, what was worse, considerable impairment or even complete loss of hearing. It was no wonder, therefore, that the operation was delayed as long as possible. The history of the recent development in the diagnosis, prognosis, and treatment in mastoid surgery was marked by four brilliant achievements: the deductions from bacterial examination of the discharges, the use of the Röntgen ray in disclosing intraosseous conditions, the short convalescence, and the improved hearing after the operation. The present-day indications for a mastoid operation, therefore, included, in addition to the former ones, several definite elements of preeminent value in both diagnosis and prognosis. The most important of these indications were: (1) rise of temperature unaccounted for and the toxic appearance of a patient suffering from inflammation of the middle ear or with a history of such inflammation; (2) the infallible indication of the presence of the *Streptococcus mucosus* in the discharge, together with the determination of the condition of the mastoid, reinforced by the skiagram; (3) the demonstration of a solid mastoid in the presence of middle-ear suppuration. The histological examination and count of the blood, though of little significance alone, was useful as a diagnostic and prognostic point. In the presence of *Streptococcus mucosus*, or with the unaccountable rise of temperature and the toxic appearance of the patient suffering from middle-ear inflammation, operation was infallibly indicated in cases where the skiagram showed a diseased or doubtful appearance. An observation of the greatest importance was that a mastoid infection due to *Streptococcus mucosus* runs a remarkably insidious course, with absence of objective symptoms and slight tendency to resolution. Involvement of the mastoid by this microorganism demanded an immediate operation, for if it were delayed it would be found that soon an emergency operation would be demanded. Like the bacterial differentiation, the skiagram was of especial value in cases which, without its use, might be overlooked. It had been observed that in normal temporal bones the interior structure of the mastoid varied considerably, grading from pneumatic cellular, through diploetic, to dense ivory, bone. Clinical observation showed that in pneumatic mastoids infection tended either to frank abscess formation or resolution, while in cases where diploetic or dense bone surrounded the mastoid antrum it tended rather to eventuation in chronic middle-ear suppuration or to the development of serious intracranial or hemic complications. The skiagram also gave a differential diagnosis between middle-ear suppuration complicated by otitis externa without mastoiditis and otitis externa with mastoiditis, and where both ears were affected it was useful in determining which ear demanded operation, or whether both ears should be operated upon. The means by which the time for operation was determined were the following: (1) The history of the case; (2) the condition of the ear as determined by inspection; (3) the presence of general sepsis; (4) symptoms indicating intracranial complications; (5) the formation of an abscess requiring surgical drainage; (6) a skiagram of the mastoid region; (7) the bacterial examination; (8) chronic middle-ear suppuration not yielding to other treatment or with cholesteatomata; (9) acute suppuration of the middle ear unreasonably prolonged; (10) acute suppuration with the skiagram showing absence of the antral pneumatic cell system; (11) suppurating labyrinthitis. Recourse to the Röntgen ray cleared up a doubtful diagnosis, giving, in connection with the clinical symptoms, positive indications for or against operation. In the pneumatic mastoid suppuration it was advisable to delay operation until the formation of abscess, while in the dense mastoid, suppurative mastoid inflammation was sufficient indication for operating at once. The prognosis following the mastoid operation, if the operation were delayed, was much the same as formerly, but cases operated on at the earliest crucial moment indicated gave a prognosis of speedy convalescence, absence of complications,

and restoration of normal hearing. In conclusion, Dr. Bryant said he would say: (1) operate when mastoid abscess is present; (2) operate on mastoiditis due to *Streptococcus mucosus;* (3) operate in the presence of intracranial or hemic complications of middle-ear infection; (4) operate on mastoiditis, acute or chronic, when the bone is of the solid variety. The former indications for operation were, as we knew, very vague. Now, with our more definite and specialized indications, there was no reason to delay an operation which had in the end to be performed. It was impossible to lay too much stress on the point that we should determine as early as possible whether operative interference was demanded.

**The Combined Laboratory and X-Ray Indications for the Mastoid Operation.**—Dr. George Sloan Dixon, in this paper, said that during the past eleven years 5,496 examinations of aural pus had been made at the Eno Laboratory of the New York Eye and Ear Infirmary. Of these, 26.6 per cent. were mixed infections, where, with a large number of germs present, it was not advisable to charge the infection to any particular germ. The majority were chronic cases, and where a radical mastoid operation was done the mastoid smear usually showed mixed germs. Streptococcus occurred as the predominating germ in 24.8 per cent.; *Staphylococcus* (*aureus* and *albus*), 7.4 per cent.; *Streptococcus mucosus capsulatus*, 4.8 per cent.; spirillum of Vincent, 1.8 per cent. The remaining 22.4 per cent. was made up of miscellaneous and negative microorganisms, among which were the tubercle and Friedländer bacilli. As the mastoid pus in cases coming to operation, as well as the pus from the aural cavity, was examined, comparison showed that the predominating germ in the canal was found in the mastoid pus with sufficient frequency to justify the regarding of the predominating germ in the discharge from the middle ear as responsible for the mastoid involvement. In the matter of the relative virulence of the various microorganisms in acute suppurative processes about the middle ear Dr. Dixon's experience had led him to regard the *Streptococcus mucosus capsulatus* as standing first, *Streptococus pyogenes* next, pneumococcus third, and staphylococcus fourth. He desired to reiterate, with special emphasis, a statement he had made a number of times, namely, that among the microorganisms found in the middle ear the *Streptococcus mucosus capsulatus* in a manner stood alone; being the most insidious and destructive the otologist had to combat. A case in which this was the infective germ would, indeed, tend to recovery equally with other forms of serious infection, provided it was seen early and proper drainage was established; but the great danger from it was to be found in neglected cases or those in which all the acute symptoms had subsided, though the otorrhea persisted and the *Streptococcus mucosus* was present. Cases of this character demanded at least an exploratory mastoid operation. As a rule, every day over two weeks' duration was an additional and increasing menace to the life of the patient. To illustrate the force of this statement he gave brief histories of six cases ending fatally which had been picked at random. While other forms of infection might be equally dangerous, in them there was little likelihood of such a complete cessation of symptoms, and the danger signals were pretty constant. In cholesteatoma the finding of cholesterin crystals in specimens from the canal or attic might aid in the diagnosis. The microorganisms found in this condition were not likely to be of much importance. In mastoiditis the blood count might be an excellent indication of the resistance of the patient or the onset of complications, but gave little information as to the condition of the mastoid itself. In blood cultivations we had an excellent means of determining whether the patient was suffering from bacteriemia or not, and a positive cultivation in the presence of middle-ear suppuration might be regarded as evidence of thrombosis of the lateral sinus, provided that all complications of a suppurative nature below the neck could be eliminated. If any advantage was to be derived from mastoid radiography, some knowledge of the variations met with in the normal mastoid process was, of course, necessary. Having made some reference to these, he said it might very properly be asked what we might reasonably expect to be obtained in the way of information from an *x*-ray examination of the mastoid. First, it would show, in the vast majority of instances, the location of the lateral sinus, judged by the shadow of the anterior margin of the groove in its relation to the meatus and its angle to Reid's base line—which was most important. (Illustrative cases cited.) Second, we could learn the type of bone, the location of the large cells, whether the sinus was covered with cells or not, and the extent to which they had developed into the zygomatic region. If cells did not show on the diseased side, and did show on the normal side, the chances were about three to one that the pathological bone was of the same type. If no detail were found in the plate of the affected side the chances were about five to one that the mastoid was diseased; though the clinical symptoms must back up the plate. (Cases cited.) Third, it was possible to diagnose perisinous abscess occasionally. More experience and improved technique should increase the number discovered. Epidural abscess, if it were not in line with the sinus, should be diagnosed at least in a small proportion of instances. (Cases cited.) Fourth, fractures of the mastoid process could be shown, but not invariably. Stereograms would aid in these cases. Fifth, faults in the canal wall and tegmen tympani and antri might be shown. Furunculosis of the canal frequently gave marked symptoms, and in the vast majority of cases the diagnosis could be cleared up by an *x*-ray examination. (Cases cited.) It could not be gainsaid that *x*-ray examination of the mastoid was of great value. Ordinary common sense must be used in reading the plates, and the findings should be supported by the clinical symptoms. Where the latter alone were not sufficient for a diagnosis of mastoiditis a positive plate would often supply conclusive evidence for immediate operation. Anything which would add to our knowledge would increase the chances of the patient's speedy recovery. The clinical symptoms were all-important; without them our modern aids were of little value. We might have a rather violent streptococcus infection in the canal, or a pneumococcus infection which looked vicious in the smear, recover after myringotomy, even though there might have been considerable mastoid tenderness; and a *Streptococcus mucosus otitis* media might eventuate in the same way. Not infrequently, however, the clinical symptoms in this form of infection were not sufficient to warrant surgical intervention. When the acute stage had passed away we might have none, and the blood count might be normal. Only the otorrhea remained, and possibly even this might have ceased. If in these cases further clinical symptoms were waited for, the chances were greatly in favor of their indicating meningitis or sinus thrombosis when they did arrive, instead of a simple acute mastoiditis. A positive *x*-ray plate in such a case, taken in connection with the form of infection, settled the diagnosis and made the mastoid operation, with as little delay as possible, imperative. Staphylococcus infections seemed to allow more latitude than any of the others, but even these would give plenty of trouble if the drainage was poor. A certain number of cases were met with in which symptoms of sinus thrombosis were the first indication that the time for operative interference had arrived. Here a positive blood culture would, of course, settle the diagnosis, provided that other sources of infection of the blood stream could be eliminated. In these cases the differential blood count was variable, and could not be regarded as affording any very positive assistance; but a large leucocyte count and a high polynuclear percentage were suspicious.

Dr. Gorham Bacon said that for a good many years he had worked with much satisfaction with Dr. Dixon in this class of cases. It was of very great value to know the nature of the infection, not only in one ear, but in both. In certain instances there was a mixed infection on one side and a very virulent infection on the other. The fact of such virulent infection indicated that the real trouble with which we had to deal was probably on the side where this was found. Hence, the laboratory findings helped very much in this class of cases. On the other hand, we might have sinus thrombus with negative blood cultures, and with a positive blood culture fail to find a thrombus in the sinus; and we had, therefore, to rely more on the clinical indications than those furnished by the laboratory. The clinical were the most important, though the others undoubtedly helped out. He could endorse all that Dr. Dixon had said in reference to the pathological importance of the *Streptococcus mucosus capsulatus*, and when in any case, he learned from the latter that this microorganism was present he always operated earlier than he might otherwise have done. The laboratory and *x*-rays were of very great assistance, and he was convinced that in the future these aids would become of even more value than at present.

Dr. Edward B. Dench said that as to the effects upon the hearing, if the operation were done early this was seldom impaired, and his experience was that patients heard as well after the operation as before. This was an argument for operating early, and it should be borne in mind that the simple mastoid operation, if done sufficiently early, was not a dangerous procedure. As to infection by the *Streptococcus mucosus capsulatus*, during one winter he had thirteen cases of this, most of them in private practice, and out of these only two came to a mastoid operation. Still, notwithstanding this experience, he agreed

that this microorganism was the most dangerous we had to deal with. He would say, however, that a case of such infection was not dangerous provided that it was drained early. But the patient should be watched very carefully for a long time, for one never could tell when serious trouble might suddenly develop, even though the patient was apparently in perfect health. He believed that the surgeon should recognize the presence of danger in every case of this form of infection, though it was not necessary to open the mastoid immediately in all instances. Dr. Dench had noticed that Dr. Bryant placed the skiagraph number 5 in his diagnostic table. He himself would certainly give this a much higher position on the list, as he considered it of very great importance in the diagnosis.

Dr. T. Passmore Berens said that of the fourteen cases of mastoiditis radiographed by Dr. Law of the Manhattan Eye, Ear, and Throat Hospital during the past two weeks, as they presented themselves at his (Dr. Berens') clinic, his reading of the plates in every instance was confirmed on operation. Dr. Dixon's *x*-ray and other work was convincing, and could not be too highly praised, and he wished to congratulate Dr. Bryant on his able handling of his subject. He agreed with the latter as to the indications for operation, but thought he had not sufficiently emphasized the fact that there was a class of cases with practically no subjective symptoms which had been called "latent mastoiditis." Latent mastoiditis had, in many instances, simply a discharge from the middle ear, and this was frequently the only symptom on which we had to work—often there was no pain on pressure, no edema, no demonstrable sagging of the walls of the external canal; the blood-count might be normal, fever was absent, and the patient might claim complete freedom from other discomfort—and yet the mastoid might be necrotic and full of pus. There was still another class of cases in which the drum-membrane might be intact, with but little if any redness in it, and there might be simply vague pains referred to the ear and to that side of the head. Even here the blood count might be normal and fever lacking, and yet the mastoid might be full of pus, while operation might uncover a perisinous abscess. Dr. Bryant had not emphasized at all too strongly the importance of early operation in cases of *Streptococcus mucosus*, but it was well to remember that even the comparatively innocent staphylococcus might invade the meninges and cause death. He had seen many cases such as he had mentioned, and it was just these atypical cases which tested our diagnostic skill to the utmost. The most promising aid we possessed was the radiograph, made and read by a skilled and experienced radiographer. The importance of the facts impelled him to emphasize by repetition and to take the liberty of adding to Dr. Bryant's first two conclusions, so as to make them read: Operate when mastoid abscess is present, no matter what the infection may be and even in the absence of fever; operate very early in the presence of *Streptococcus mucosus*, even when the symptoms of a mastoid abscess are comparatively slight.

Dr. Charles E. Perkins said he thought that as time went on we would rely more and more upon the *x*-ray examination to aid us in the diagnosis of doubtful cases. Some two years ago he had reported four cases of mastoiditis without apparent involvement of the middle ear. One of these patients had had a swelling behind the ear for about three months. The fundus of the canal and membrana tympani were normal. At operation a large perisinous abscess was found. The infection in this instance was the *Streptococcus mucosus capsulatus*. In another case, which he had seen just before death, the fundus was normal, but at the autopsy mastoiditis, sinus thrombosis, and meningitis were found. In this case an *x*-ray examination early in the course of the disease would doubtless have cleared up the diagnosis and perhaps saved the patient.

Dr. James F. McKernon said that the importance of the evidence afforded by bacteriological investigation in this class of cases was now generally recognized. Yet when he had asserted this in 1896 it was received with laughter by the surgeons of the New York Eye and Ear Infirmary. He had waited to hear Dr. Bryant say something about the atypical cases. The typical cases were easy of recognition, but those on the borderline were more difficult. There might be no tenderness over the mastoid, but there were two significant signs. The first was a marked diminution in audition on the affected side, and the second was that when a speculum was inserted there was found a general narrowing of the lumen of the canal, though most marked as regards the superior wall. In addition, the appearance of the tongue would indicate the presence of an infection. Again, in children the development of serious trouble was sometimes very late. There might be nothing to attract attention but a continuous discharge, but the quantity of this would show that it came from a reservoir of greater capacity than the middle ear. While the blood examination and *x*-ray were undoubtedly of great confirmatory value, he would refuse to operate in any case in which he had to depend upon the evidence afforded by these alone.

Dr. Joseph A. Kenefick said that he, too, would emphasize the atypical cases as of the greatest importance to the general practitioner. Headache was a sign which ought not to be disregarded, and especially headache at night. Tension was a necessary result of mastoiditis, and this, naturally, was relieved to some extent when the patient was in the upright position, but continuous when he was in the recumbent posture. In mastoid disease the sooner one operated, the better. In the matter of diagnosis, in relation to the type of infection present, he depended upon the findings by Dr. Dixon. Mastoiditis often could be nipped in the bud in infection of any type, and in every instance it was essential that the drum membrane should early be slit from top to bottom.

Dr. Arthur B. Duel said that all seemed now to agree as to the value of smears. This was not formerly the case, as it was claimed by many that only cultures could be of importance. For many years it had been his invariable practice to make smears from the ear, and he had come to look upon the findings as of prognostic value. Dr. Dixon's work had been of great value. As to infection by the *Streptococcus mucosus capsulatus*, we should not be deceived into inaction by the fact that no very serious symptoms developed, provided that the discharge continued. These cases ought to be operated on precisely because the *capsulatus* was there, when the discharge continued for more than a fortnight owing to the fact that tremendous destruction often occurred with no warning symptoms until intracranial structures were involved. The pneumococcus would produce high temperature, as it did in pneumonia, and this was likely to subside by crisis, without giving rise to mastoiditis. He believed the *x*-ray would prove to be of incalculable value in diagnosis as experience increased.

Dr. Dixon, in closing, said that we might have sinus thrombosis, and yet negative blood cultures. This had been shown in two cases in the service of Dr. Robert Lewis, where the internal jugular vein was completely blocked.

Dr. Bryant, in closing, said that the skiagram afforded the final recourse in the diagnosis and prognosis of mastoiditis, that no case should be operated on without it, and that all cases of obvious or suspected middle ear suppuration should be radiographed.

**The Results of Tonsillectomy.**—Dr. Bryan DeForest Sheedy read this paper. (See page 654.)

Dr. Frank C. Raynor said that for a great many years he had done tonsillectomy practically exclusively. He had had some of the deformities mentioned in the paper, but almost always an essentially normal throat afterward. When the tonsil ran very high up there was a greater risk of some deformity. He had met with no marked impairment of function, though it was difficult to follow up hospital cases. Most of his operations had been in children, and in this class of patients, on account of the gagging and other trouble caused, local anesthesia was not practicable. In practically all his cases he had employed general anesthesia, and this he thought preferable on account of the comfort of both operator and patient. He had been much interested in Dr. Sheedy's description of his method, and would certainly give it a trial.

Dr. William K. Simpson said that the question of tonsillotomy versus tonsillectomy was an old and vexed one. There was no doubt in his mind, however, that a good tonsillotomy was better than a bad tonsillectomy. In skilful hands the old operation, in many instances, could be done as effectively as so-called tonsillectomy. It was certainly a matter of wonder why tonsillectomy had not always been the one operation, and the most probable explanation was that something must have happened to throw discredit upon the procedure. We now had a great variety of methods for removing the tonsils, and it seemed that we ought to fix upon some simple, uniform way of doing this. There were one or two operations which appeared to work satisfactorily. One of these at present claiming considerable attention was the Sluder operation, and now we had another in the procedure described by Dr. Sheedy. The complete removal of the tonsils, *i.e.* tonsillectomy, should be done exceedingly carefully and in a manner which should reduce the subsequent palatine deformities to a minimum.

Dr. J. Alexander McIsaac said that both in children and adults he never did a tonsillectomy except under gen-

eral anesthesia, so that he could have complete control of his patient. In his experience, where a tonsil caused trouble from inflammation and disease he found that it was very adherent to the surrounding tissues. Therefore, the best technique was the one which would cause the least possible trauma in removing it. He had found that the best method was to dissect both the anterior and posterior pillars carefully away from the adherent capsule, and then to dissect the capsule from the superior constrictor muscle; at the same time directing pressure against the capsule. Finally, the wire snare was employed to complete the operation. In the hands of another physician he had seen a secondary hemorrhage follow the use of the snare without the preliminary dissection. He had had no experience with the method described by Dr. Sheedy in his paper.

Dr. Sheedy, in closing, said that Dr. Simpson's remarks applied more particularly to children. The cases referred to in his paper were entirely in adults. With the exception of one or two instances, in a very large number of cases, he had not seen unsatisfactory results in children when the operation was carefully and properly performed. In the various cutting and dissecting operations we necessarily had cicatrical tissue, and from this there naturally followed the contractions resulting in the abnormal conditions, especially in the pillars, of which he had spoken. There could be no question that tonsillectomy, as heretofore performed, was a major operation, and one which should always be done in a hospital, where proper assistance and appliances were ready at hand, and where the patient could lie up for a day or two and have suitable after-care. The Sluder method was intended to do away with the difficulties associated with the work as now performed, but injury to the anterior pillar was almost inevitable under this procedure. The evertion operation, as he had described it this evening, was so simple a surgical procedure that any man with any surgical experience could do the work with safety, and if the snare were tightened slowly there would be no after-hemorrhage with which to deal. This statement applied to the operation in children as well as adults, and whether the operation were done under a local or a general anesthetic.

## State Medical Licensing Boards.

### STATE BOARD EXAMINATION QUESTIONS.

Tennessee State Board of Medical Examiners.

*May, 1912.*

(*Concluded from page 597.*)

#### PRACTICE.

1. Define chlorosis. In what sex does it most frequently occur? Define leukemia. Name the organs and glands involved in the pathology of leukemia.

2. Define acute peritonitis. Give the causes. Briefly give a treatment, preventive and curative.

3. Define acute enterocolitis. Name the age and predisposing causes which produce this disease. Give treatment, preventive and curative.

4. Define fever, pyrexia. What is an antipyretic? Name some antipyretics you would use in fevers.

5. Define tuberculosis. Name some of the common forms of it. Give briefly a general treatment for pulmonary tuberculosis.

6. Give a clinical picture of an acute attack of appendicitis (typical). Give treatment.

7. Define locomotor ataxia. Name the structures involved in the pathology. Give general symptoms.

8. What is meant by the term, "neurosis"? Is heart palpitation a neurosis or an organic disease? Define tachycardia, brachycardia. What is arteriosclerosis?

#### OBSTETRICS.

1. Give in detail your management and duties in a case of labor, from its inception until the patient is convalescent.

2. Give the physiology of fecundation.

3. What is the placenta? From what is it formed? What is its structure and what its functions?

4. What structures enter into the formation of the pelvic floor?

5. Name five of the most important signs of pregnancy and state the dates when they are most available.

6. Describe the various things you would suspect in a case of pregnancy with frequent or continuous hemorrhage.

7. What is your idea of the use of anesthetics in labor; what would you use? Why? What are some of the dangers from their use?

8. Under what conditions may shortening of the round ligament be justifiable? Describe the operation.

#### SURGERY.

1. State in detail how you would perform suprapubic cystotomy for the removal of a stone from the bladder.

2. Name five of the principal complications of gonorrheal urethritis in the male.

3. How would you prepare a patient for an anesthetic and what examination of patient would you make?

4. Give the signs of surgical anesthesia. Complications likely to occur during anesthesia. How would you combat them?

5. What is an aneurysm? Give symptoms and treatment.

6. What is acute osteomyelitis? Give causes, symptoms, and treatment.

7. Give in detail the surgical method for the removal of the fluid in a case of ascites.

8. What are the indications for castration? Give in detail the method of operation.

### ANSWERS.

#### PRACTICE.

1. *Chlorosis* is an anemic condition of unknown origin, and marked by a reduction of the hemoglobin. It occurs most frequently in females.

*Leukemia* is a condition in which the white blood corpuscles are increased and changes are found in one or more of the following: Bonemarrow, spleen, lymphatic glands.

2. *Acute peritonitis* is acute inflammation of the peritoneum. Causes: Bacterial infection, extension of inflammation from neighobring organs, penetrating wounds, or perforation of an ulcer in the stomach or intestines.

*Treatment* is operative; but pain may be lessened by morphine (used judiciously); ice or warm applications may be used; subcutaneous injection of saline solution is of value in combating shock or collapse. Rest is imperative; and the causative factors should be attended to.

3. *Acute enterocolitis* is an acute inflammation of the lower part of the ileum and of the colon. It often occurs in infants. *Causes*, are: Improper feeding, bacteria, debility; and warm weather and teething are said to predispose. *Treatment* consists in giving proper food *beforehand*. With the onset of the disease, a simple purge, lavage of stomach and colon, and proper food are indicated. Bismuth, and Dover's powder may check the diarrhea.

4. *Fever* or *pyrexia* is a condition or disease in which the bodily temperature is above normal.

An *antipyretic* is an agent used to combat fever. Such are: Cold water, quinine, phenacetin, aconite.

5. *Tuberculosis* is a disease characterized by the formation of tubercles and caused by the presence of the *Bacillus tuberculosis*. It may attack the lungs, joints, lymphatic glands, meninges, peritoneum, or any other tissue or organ of the body. *General treatment for pulmonary tuberculosis* consists in fresh air, rest or mild exercise, plenty of sunlight and good food (eggs, milk, fresh vegetables); medicines used are castor oil, creosote, tuberculin, hypophosphites, arsenic. Symptoms are treated as they arise.

6. *Acute appendicitis* is characterized by sudden onset with pain in the right iliac fossa, moderate or high fever, nausea, vomiting, constipation, tenderness over the abdomen (chiefly in right iliac fossa), pulse rapid in proportion to the fever, rigidity of the right rectus abdominis muscle, the patient lies on his back with the right leg semi-flexed. *Treatment* is surgical; a competent surgeon should be called in at once. Temporizing is often fatal.

7. *Locomotor ataxia* is "an affection characterized clinically by sensory disturbances, incoordination, trophic changes, and involvement of the special senses, particularly the eyes. Anatomically there are found degenerations of the root-fibers of the dorsal columns of the cord, of the dorsal roots, and at times of the spinal ganglia and peripheral nerves. Degenerations have been described in the brain, particularly the cortex cerebri, in the ganglion cells of the cord, and in the endogenous fibers of the dorsal columns." (Osler.)

*Symptoms:* Loss of coordination; characteristic and unsteady gait; tendency to stagger when standing up with feet together and eyes closed; sharp and paroxysmal pain, called *crises;* girdle sensation; loss of knee-jerk and other reflexes; Argyll-Robertson pupil. The *diagnostic features* are: A slow onset; the loss of the patellar reflexes; Argyll-Robertson pupil; lightning pains; incoordination.

8. A *neurosis* is a nervous disease which is functional and not dependent upon a lesion. Heart palpitation is a neurosis. *Tachycardia* is rapid heart-beat. *Bradycardia* is slow heart-beat. *Arteriosclerosis* is an overgrowth of the intima of an artery, with degenerative changes in the media, and general thickening and loss of elasticity of the arterial walls. And see above, PATHOLOGY, *Question* 1.

OBSTETRICS.

1. *The patient* should receive a full bath before labor begins and all bed-clothing and personal clothing should be clean. If there are any pathological discharges from the genitalia, the vagina should be thoroughly scrubbed with tincture of green soap and hot water, followed by a mercuric chloride douche (1:2000); this followed by a douche of sterile water. The physician's hands should be scrubbed for 10 minutes with tincture of green soap and hot water, followed by alcohol, and immersion in mercuric chloride (1:1000). All instruments should be boiled for 10 minutes or immersed in mercuric chloride (1:000) for half an hour. Examinations should be made frequently to determine the position, presentation, size of the fetus, etc.

*During the first stage* a rectal enema of soapsuds with turpentine (5i) should be given, and when the os is dilated to the size of a silver dollar, the patient should be placed in bed, lying upon the side toward which the fetal back looks. If the pain is severe, chloral hydrate (gr. 15) may be given every half-hour for 3 doses.

*During the second stage,* examinations should be made every 10 or 15 minutes. In multiparæ, the membranes may be ruptured with the finger or with some aseptic instrument. Care should be taken not to injure the child's scalp or the lower uterine segment. The pain may require the administration of chloroform or ether, but not to the extent of complete anesthesia. The expulsive force of the abdominal walls may be increased by directing the patient to pull upon a sheet firmly secured to the foot of the bed. Attempts may be made to prevent laceration of the perineum by making firm backward and upward pressure against the occiput during the pains; by restraining voluntary expulsive efforts during the pains; and by securing expulsion of the head between the pains. The head should be supported when born; the eyes should be cleansed with sterile water; and if the cord is coiled about the neck, it should be loosened or slipped over the head. Delay in delivery of the shoulders may be overcome by stimulating the uterus by friction through the abdominal wall or traction. The cord is ligated and cut when pulsation has ceased, and the child is placed by the mother's side with its face turned away from the maternal discharges.

*During the third stage,* 5i of the fluidextract of ergot is administered and irritation of the uterus by friction through the abdominal wall is practised for 10 to 15 minutes. If the placenta is not expelled by this time, the uterus is firmly grasped between the thumb and four fingers and compressed. Firm pressure is then made from above downward and backward in the direction of the pelvic canal. This usually causes delivery of the placenta. A vulvar pad of salicylated cotton and carbolized gauze and an abdominal pad and binder are then applied.—(Gould and Pyle's *Pocket Cyclopedia.*)

2. *Fecundation* is the result of the meeting of a live and healthy spermatozoon, with a live and healthy ovum, in a suitable medium (generally the Fallopian tube). During coitus the seminal fluid is ejected into the upper part of the vagina and against the cervix of the uterus; the spermatazoa enter the uterine cavity (either by the suction of the uterus or by their own vibratile motion) and so on to the Fallopian tube. Several spermatozoa may surround an ovum, or even pierce the perivitelline space; but only one spermatozoon enters the vitellus. This spermatozoon loses its tail; and its head becomes the male pronucleus. The male pronucleus and the female pronucleus now fuse together, and fecundation is completed.

3. At full term the *placenta* is a soft, spongy mass, roughly saucer-shaped, from six to nine inches in diameter, about three-quarters of an inch in thickness at the central point, and weighs about one pound. It is *formed,* partly from the mucous membrane of the uterus, and partly from the chorionic villi. Its *functions,* are: (1) To supply nourishment to the fetus; (2) to act as a respiratory organ for the fetus; (3) to act as an excretory organ for the fetus. Its *usual location* is on the anterior or posterior wall of the uterus, near the fundus.

4. *The pelvic floor* is composed chiefly of fascia, muscles, and connective tissue. Its superior surface is lined by peritoneum. Next below, and in close contact with the peritoneum, comes the "internal pelvic fascia." Immediately below the internal pelvic fascia are two thin muscles: The *levator ani* and the *coccygeus.* Below these muscles the pelvic floor is further strengthened by the *perineal fascia.* Its posterior portion consists of a single layer, while its anterior part is divisible into three layers. Within these latter layers are lodged the pubic vessels and nerves, and the superficial muscles of the perineum. These muscles are the *constrictor vaginæ,* the *sphincter ani,* and the *transversus perinei,* and to these structures must be added the integument and the very numerous interstitial layers of elastic connective tissue, which latter weld the parts together and add strength and elasticity to the whole fabric.—(From King's *Obstetrics.*)

5. *Five important signs of pregnancy:* (1) Hearing the fetal heart sounds, from the eighteenth week onwards. (2) Palpation of the fetal parts; during the last four months. (3) Detection of the movements of the fetus; during the last three or four months. (4) Hearing the funic souffle; during last two months. (5) Hegar's sign; from the second month onward.

6. Frequent or continuous hemorrhage during pregnancy might be due to: Placenta prævia, or premature separation of the placenta, or to apoplexy of the decidua or placenta. Hemorrhage during pregnancy may also indicate abortion or ectopic gestation.

7. ANESTHETICS are used in labor to lessen suffering produced by labor pains; to lessen the pain attending obstetric operations; to relax the uterus when its rigid contraction interferes with version; to promote dilatation of the os uteri; to reduce excessive nervous excitement which may interfere with progress of early stage of labor; to relieve eclamptic convulsions and mania; in cases of uterine inversion to relax the constricting cervix and so facilitate replacement; in bipolar version to lessen pain of introducing the hand into vagina; in precipitate labor to suspend action of voluntary muscles and retard delivery; in all cutting operations upon the abdomen; and sometimes in sewing up a lacerated perineum when many sutures are required.—(From King's *Obstetrics.*)

Chloroform is most frequently used; probably because chloroform is easier to administer, does not require cumbersome apparatus, allows of the patient being partially or completely anesthetized as may be necessary.

*Dangers:* It lessens the efficiency of the uterine contractions; it predisposes to postpartum hemorrhage; and, if given too freely, may be followed by headache, nausea, and vomiting.

8. *Shortening of the round ligaments is indicated in:* Retroversion of the uterus uncomplicated by adhesions, tumors, or inflammation of the adnexa.

*Alexander's operation:* "The pubic hair is shaved off and skin and vagina disinfected. The uterus is replaced and a glass stem with attached silk thread introduced into its cavity. A narrow Hodge pessary is placed in the vagina. Next, the patient's legs are extended. The operator stands on the side opposite to the ligament to be shortened; he locates the pubic spine, which is the leading landmark during the whole operation, and makes an incision from 1 to 3 inches in length through the skin over it, in the direction of the slit between the pillars of the external inguinal ring. Its length must be proportionate to the amount of adipose tissue present, but it should, if possible, not extend beyond the hairy portion of the mons Veneris, as then, after the hairs grow out again, the cicatrices will be entirely hidden. Next, the subcutaneous fat and the superficial fascia are divided in the same direction, exposing the glittering, satin-like pillars of the external ring, which is situated above and a little outward of the spine of the pubis and can be felt at the bottom of the wound. It is well to dissect the aponeurosis of the external oblique abdominis muscle, so as to see not only the pillars, but the intercolumnar fascia extending between them. During the incision several small arteries will be severed and must be clamped. In the external inguinal ring is seen a lump of fat which contains the ligament. This whole mass is grasped with an artery-forceps and drawn in the direction of the vulva. The genital branch of the lumborcrural nerve is seen as a fine white cord in front or to one side of the ligament. If it is in the way, it may be cut, but generally it suffices to push it aside. From the ligament extend a number of sinewy threads to the sides of the inguinal canal, which must be severed. Sometimes the peritoneum is invaginated and forms around the ligament a sheath, which must be stripped back with the nails of the fingers. When the isolated white tendinous ligament peels readily out from the canal, the wound is covered with iodoform gauze or sterile gauze; the operator takes his position on the other side and treats the second ligament in the same way. Before

fastening the ligaments he should pull both forward and ascertain, through the abdominal wall or the vagina, that the uterus is tilted forward. He should then slacken them from ¼ to ½ inch, in order to avoid undue strain on them and the formation of a hernia. They are fastened by passing three sutures of chromicized catgut through them and both pillars on each side, the last one comprising some of the tendinous tissue in front of the pubic bone. When the sutures have been tied, the superfluous piece of the ligament, which will measure from 2 to 4 inches, is cut off. The superficial fascia is closed with running suture of plain catgut, and finally the skin wound is closed with two or three sutures of silkworm gut. The two wounds are dressed with one piece of iodoform gauze, guttapercha tissue, and plain gauze, kept in place by a double spica or straps of rubber adhesive plaster. At the end of a week the superficial sutures are removed. The patient should remain in bed three weeks."—(Garrigues' *Gynecology.*)

SURGERY.

1. *Suprapubic cystotomy:* "The patient is prepared as for any abdominal operation, including shaving of the pubes. The capacity of the bladder should have been previously tested, and at the time of operation the bladder should be irrigated and filled with boric acid solution, or, as some surgeons prefer, filled with air. A catheter is tied about the penis, in order to prevent the escape of fluid, and the patient placed in the Trendelenburg position. These maneuvers displace the vesical fold of the peritoneum upwards, and thus permit extraperitoneal exposure of the bladder. A three-inch incision is made in the median line from the symphysis pubis upwards, the prevesical fat separated, and the bladder recognized by its longitudinal muscular fibers and its globular form. Two sutures are passed through the bladder wall to act as tractors and a longitudinal incision made between them. Stones may be removed with the fingers, forceps, or scoop. If the bladder is not infected, the wound may be closed by two layers of Lembert's sutures of catgut and the incision in the soft parts approximated, leaving space for a small gauze drain running down to the bladder. If this course is followed, a retention catheter should be passed into the bladder through the urethra. If the bladder is infected, the wound in its wall may be sewed to the fascia, or it may be closed with catgut sutures which invert it about a rubber tube, several of the sutures passing through the tube. The tube should be long enough to syphon the urine to a receptacle beneath the bed."—(Stewart's *Surgery.*)

2. *Five complications of gonorrheal urethritis:* Epididymitis, cystitis, prostatitis, vesiculitis, and gonorrheal rheumatism.

3. *"The preparation for anesthesia,* in cases requiring a major operation in which there is no emergency, should extend over two or three days, during which time, in addition to the special preparations for the operation itself, the patient should be carefully examined, particularly for the presence of disease of the heart, blood vessels, lungs, and kidneys. The condition of the nose, throat, and mouth should be known, and in many cases a careful examination of the blood will be required. The bowels should be moved by a laxative, and an enema administered in the morning of the operation. The diet should be light and easily digestible. No solid food should be given on the day of operation, although a cup of tea, coffee, or consomme may be given not less than six hours before the time of anesthesia. In the feeble and exhausted purgation should be avoided, and stimulating or nutritive enemas may be continued until within a few hours of the operation. Just before operation the patient should pass urine, or, if necessary, be catheterized. If the patient be a woman, the hair should be braided and done up in a cap or towel. Artificial teeth or other foreign bodies should be removed from the mouth, and the lips and nostrils greased, especially if chloroform is to be used. The patient should be suitably protected from cold. In cases of intestinal obstruction the stomach should be washed out previous to the administration of the anesthetic, in order to prevent sudden death from inundation of the lungs with vomited fecal matter."—(Stewart's *Surgery.*)

4. *The signs of surgical anesthesia,* are: Absence of conjunctival or corneal reflex, deep and rythmical breathing, muscular relaxation, and insensibility to pain.

*Complications that may arise:* (1) Vomiting; this sometimes requires more of the anesthetic, and sometimes a few breaths of air. The mouth be cleared of the vomitus, and the patient's head turned to one side to allow the vomited matter to escape. (2) *Syncope;* stop the anesthetic, lower the head of the bed, make traction on the tongue, start artificial respiration, and give a hypodermic of strychnine. Apply heat, give an enema of hot salt solution. (3) *Forgetting to breathe;* remove the inhaler, and make traction on the tongue. (4) *Swallowing the tongue;* pull the tongue forwards.

5. An *aneurysm* is a pulsating sac containing blood, and communicating with the lumen of an artery.

*Symptoms:* A soft, elastic, pulsatile tumor in the line of an artery; pulsation ceases if pressure is made on the artery above the tumor, and reappears on relaxing the pressure; similar pressure on the artery below the tumor, causes it to enlarge; a systolic bruit can often be heard over the tumor; the pulse below an aneurysm is weaker than the corresponding pulse in the opposite limb; there may be pain, and weakness of the part affected.

*Treatment:* Rest in bed; restricted diet (both solid and liquid); iodide of potassium in doses of gr. xv to xx; hypodermic injection of gelatin; pressure; ligature, various methods (Antyllus, Anel, Hunter, Wardrop, Brasdor); extirpation of the sac; and aneurysmorrhaphy.—(Matas' operation).

6. *Osteomyetitis* is inflammation of the bone and marrow; the term is often used now for inflammation of bone.

It is *caused* by infection, the bacteria gaining entrance either through a wound, or by extension from neighboring tissues, or they may be brought by the blood.

*Symptoms:* Sudden onset; pain, tenderness, fever, chills, swelling of soft parts; sometimes the joint can be moved gently without pain; septicemia or pyemia may be present.

*Treatment* consists in relieving the constitutional symptoms and preventing the bone from necrosing. An incision down to the bone is made; if pus is beneath the periosteum, the latter is also incised; a piece of bone is removed by chisel or trephine, pus is removed, the endosteum is hurt as little as possible, the wound is irrigated with hot bichloride solution and packed with gauze; the soft parts are closed and the wound well drained. In case this fails, amputation may be necessary.

7. *To remove the fluid in a case of ascites:* "A puncture should be made either in the median line midway between the umbilicus and the symphysis pubis, or midway between the umbilicus and the anterior superior spine of the ilium. The instrument used is a trocar and cannula or the needle of an aspirator. The depth to which it shall be allowed to penetrate is regulated by the finger placed upon its side, and it should be plunged in sharply, without a preliminary incision, at the selected point, which should be absolutely flat upon percussion. As there is a possibility of syncope occurring during the operation, in consequence of the withdrawal of pressure, it is prudent first to pass a broad, many-tailed flannel bandage about the abdomen, crossing its ends behind, so that an assistant standing at each side can draw upon them and tighten the bandage as the liquid escapes. It is usually sufficient, however, to have an assistant make steady pressure with one hand on each side of the abdomen. During the operation the patient should be seated or inclined toward one side."—(Stimson's *Operative Surgery.*)

8. The *indications for castration* are: Malposition of the testicle, tuberculous disease, old standing hematocele, cancer, or other tumors, and chronic enlargement of the prostate gland.

"The operation is conducted as follows: The pubes and perineum having been previously shaved and purified, the surgeon, standing on the same side of the patient as the organ to be removed, makes an incision down to the testis. If large and adherent to the scrotal tissues, the incision must necessarily involve the scrotum, but wherever practicable it is wise to avoid the scrotal integuments, making the incision over the cord. It should always extend upwards as far as the external abdominal ring, so as to enable the structures of the cord to be divided high up—a most important matter in tuberculous and malignant disease; the inguinal canal can then also be closed, if necessary. The testis or tumor is enucleated from its surroundings, and the cord isolated and divided as high as possible, after transfixing and securely ligaturing it with silk. The stump should not be allowed to slip back into the canal until all bleeding has completely stopped, and it has been suggested that the cut end of the vas should be touched with pure carbolic acid as a precautionary measure. All bleeding points in the scrotum are now secured by ligature, and these may be numerous; the wound is closed by sutures, a drainage-tube being inserted in the scrotum, and by choice coming to the surface at the upper end of the wound—that is, as far from the perineum as possible."—(Rose and Carless' *Surgery.*)

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## Original Articles.

### THE MONTESSORI METHOD FROM A PHYSICIAN'S VIEWPOINT.

By GEORGE W. JACOBY, M.D.,

NEW YORK.

Six years have passed since Dr. Maria Montessori founded her first house of childhood (Casa dei Bambini) in Rome, which because of her special educational method, at once achieved a decisive success. This method does not merely touch upon single points of the theory and practice of pedagogy but penetrates so deeply into the science of education and is of such revolutionary nature that all cultural peoples are to-day discussing whether the existing methods of instruction and education ought not to be developed further by amalgamation with the Montessori method, or whether our entire kindergarten and school system must not be reconstructed upon a different basis.

The possibilities that will confront us in this regard will be a matter for later consideration; for the moment let it suffice to recognize the fact that here in America pedagogic interest has become focused upon this question. To *McClure's Magazine* belongs the credit of having first directed the attention of the American public to the Montessori method. In May, 1911, Josephine Tozier wrote the first article on the subject, and that gave the impetus for the writing of several excellent dissertations since. Last year Anne E. George gave us a translation of Montessori's best known work, "Il Metoda della Pedagogica Scientifica," a book which, together with the "Antropologia Pedagogica" of the same author, must constitute the sole authentic source of all information regarding the method in question. Furthermore, Maria Montessori herself has directly addressed the American public in *McClure's Magazine*.

The works just cited have aroused the interest of the entire American pedagogic world to such an extent that a lively exchange of ideas, in the press and upon the lecture platform, is daily taking place. In fact the literature upon this subject has grown, in this brief space of two years, to the proportions of a small library, and the interest in the subject, even among those whose attitude is one of challenge or merely one of expectation, is steadily augmenting. An astonishing fact is that, so far as I have been able to follow the literature on the subject, this discussion has been carried on by pedagogues only, and with the exception of a short article by S. H. Brown, in the Medical Record, nothing has been published by any physician in regard to this method. Still I think it cannot be contradicted that a method of instruction and education, originated by a physician, built up entirely upon psychologic-physiological principles, originally elaborated for medical purposes, and which has efficaciously forced on us a recognition of the dependence of pedagogue success upon a knowledge of physiological and pathological processes of life, is one which demands more or less extended medical consideration.

For me personally, there exists yet another incentive for such consideration, because during a stay of a couple of months in Rome last Spring I had the opportunity of becoming personally acquainted with Mme. Montessori and of studying her method amid the surroundings for which it was elaborated. From what I have already said, it will be seen that my task here will necessarily be a restricted one, for I am relieved from the obligation of systematically and exhaustively unfolding the theory and practice of the Montessori method. Nearly everything that can be said about this has already been amply emphasized in *McClure's Magazine* and elsewhere

I am further restricted in the elucidation of the fundamental principles by the fact that their purely pedagogic aspect has already been enlarged on in lectures and published articles and, more especially, in the adverse conclusions formulated by the Teachers' College in August, 1912. Only in so far as the pedagogic aspects are inseparable from the medical points of view, will they be referred to by me.

In thus discussing the Montessori method from a purely medical standpoint, I would sum up the total impression which I have derived from it in the words, "The better is the enemy of the good."

A method of training and instruction which, premising equal average talent, enables children of from four to five years of age to occupy the same plane of mental development as children who have already gone to school for two or three years, a method which enables psychically deficient children to compete with normal children of equal age, a method which, without the employment of measures of restraint, is able to effect model discipline, a method, finally, which makes of the teacher essentially an observer and allows the child itself, controlled only by the teaching material, to gain correct notions of the outer world entirely through its instinct for occupation and investigation; such a method seems to me to fulfill all the demands which the steadily augmenting intensity of the struggle for existence of our times must make upon the training of the adolescent generation. Only he can successfully compete in the struggle for existence who has adapted himself to his environment, who is prepared for the changing requirements of life through which he is confronted now with one task, now with another. In order to render the child mentally and physically fit for the struggle for existence, it is not sufficient to equip it with a certain sum of knowledge and acquirements. Nor does a training suffice which merely will make of the child a good grown up. Our times demand people of strong will, people who are able to maintain themselves in the rank in which fate has placed them.

Education, therefore, must strive above all else to arouse that initiative, that mental spontaneity, which will enable the child to think and to act independently. It is just this which is achieved better through the Montessori method than through any other educational system. As a matter of fact, the Montessori children, upon their admission to the primary school, have something which the Froebel children do not possess. Among other things, the conclusions of the Teachers' College say, the principle of free self-development of the child is not new, Rousseau already having advocated this principle and it having been espoused in America particularly by Prof. Dewey. This is quite true. The same idea may even be found expressed in Herbert Spencer's book on "Education," in which he says: "In education the process of self-development should be encouraged to the fullest extent. Children should be led to make their own investigations and to draw their own inferences. They should be *told* as little as possible, and induced to *discover* as much as possible."

Whether Dr. Montessori had any knowledge of these words I do not know, and it is entirely immaterial whether she did or not, since it is only the heuristic method of finding for one's self which is common to the theories of Spencer and Montessori. What does matter much, however, is whether we say, with Spencer, that children should be "induced" to discover, or whether we agree with Montessori that children in themselves possess the innate proclivity to discover and that the educator should remain passive and allow this instinct to develop in an unhampered way. Dr. Montessori, in fact, goes so far as to allow the child to busy itself all day long with any one thing which may please it and hold its interest.

While the Froebelian method requires the children to occupy themselves in groups, now in one way, now in another, Montessori looks upon it as a mistake to interrupt the child's propensity for investigation so long as a certain object holds its interest and rivets its attention. In this Dr. Montessori starts from the correct idea that it is the endeavor of the child to recognize an object from all points of view, that its interest will pall of itself as soon as this endeavor has been satisfied, and therefore that so long as this interest is present, it should not be interrupted, for such an interruption, suppressing as it does the child's endeavor and effort, is equivalent to a restraint of development. Certainly these ideas are not new. Mme. Montessori again and again lays stress upon the potent influence which the writings of Séguin have exercised upon her. But no one can say that these ideas have been adopted by her unaltered. On the contrary, she has so modified them that, in their present form, they are in full accord with the demands of physiological psychology. To her is due the credit of first having obtained for these ideas no mean amount of recognition, and of having forced upon the pedagogic circles of all countries the consideration and discussion of a method of instruction and education which is built up entirely upon the basis of physiological psychology.

The feeling that reform of some kind in our present method of education is necessary seems to permeate the entire atmosphere. Before me as I write is Edmond Holmes' "What Is and What Might Be in Education." Without knowing Dr. Montessori and without having heard of her work, Holmes in London has arrived at conclusions very similar to those of the founder of the "Casa dei Bambini" in Rome. He also is an advocate of free self-development of the child and of the widest individualization. In "What Is" Holmes, by examples taken from actual life, shows the consequences which will ensue when the natural impulses or instincts of the child are repressed or abused. In "What Might Be" he introduces to us *Egeria,* a teacher in a school in *Utopia,* all whose efforts are directed toward allowing the natural impulses of the child to develop themselves in an unhampered way. For the children of Egeria's school, there exists neither punishment nor reward. Notwithstanding that they are subjected to no constraint of any kind, that no threat of punishment frightens or intimidates them, no promise of reward allures them or arouses their ardor, the children thrive and observe most model discipline.

Mental cripples who by rote have acquired a mass of undigested knowledge and who through the principle of punishment and reward have been trained to a "mechanical obedience"—these are the fruits of the school "as it is." Mentally alert children, full of live interest in the things which surround them, not crammed with mere memory knowledge, but equipped with that independence of thought and judgment which at the given moment is able quickly to find itself, and which through free obedience makes the calls of unlovely egotism subordinate to the interests of the many—these are the fruits of the school "as it might be." Mr. Holmes has told me his Egeria and his Utopia were not, as I assumed them to be, the products of his imagination. Both teacher and school were the actualities of an English village and in his book he informs us that the type of education which flourished in the soil and atmosphere of Utopia developed children of "activity, versatility, imaginative sympathy, a wide and free outlook, self-forgetfulness, charm of manner and joy of heart." Whoever has seen a class of Montessori infants would regard those words as a forecast of their future.

"The better is the enemy of the good"—therein lies the root of all cultural progress. Not to accord recognition to a better idea because we do not wish to relinquish a good one signifies arrest of progress. This is as true in pedagogy as it is anywhere else. So long as this science was under the bane of that psychology known as speculative, which, notwithstanding its most skillful construction, took hardly any cognizance of the true mental life of the child—so long could there be no progress. Pedagogy could become rational only when physiological psychology furnished to it an exact basis for observing the child's mind, and pathological psychology, taught the pedagogue how to differentiate the healthy mind from that which was diseased.

Without exact knowledge of normal and pathological vital processes, pedagogy necessarily fell into grave errors as soon as it was obliged to occupy itself with children who in any way deviated in their powers of conception, their emotional life, and their will power, from that imaginary type designated as "normal." Inasmuch as speculative psychology was entirely unfamiliar with the mental life of these children, it follows that they could not be trained by the pedagogy which was the outgrowth of that psychology; and because such children were unable to adjust themselves to that pedagogic standard adopted for the "normal type" they were treated as insubordinates, often with severity which bordered upon brutality. Of course under such treatment

matters could only grow worse, and as a result these unfortunate children often became the victims of complete neglect. Conditions remained thus until physiological and pathological psychology, after ceaseless endeavors, succeeded in finding the key to the mental life of these children and thereby furnished the proof that pedagogic success depends essentially upon a precise knowledge of these laws which, under physiological as well as under pathological conditions, governed the development of the child.

Every method of training and instruction which leaves these laws of development unconsidered, is wrong. Any method which accords them proper recognition is right. Which method is right and which wrong may easily be deduced from the fact that in the reign of a pedagogy built upon the basis of speculative psychology, there was a dwarfing of mental attributes, which, under the sway of the physiological method, were brought to a brilliant development.

We must not take the position that a healthy mind will think correctly without knowledge of the laws of logic, for, although we may unconsciously do that which is correct, science must not count upon such eventualities. This topic is of such interest and approaches so closely to the root of the Montessori method, that I cannot refrain from attempting to show, by a brief historical retrospect, the influence which the science of medicine has exerted upon that of pedagogy.

In so doing we encounter four names, each of which represents a milestone in the development of the physiological method. Above all there is the French physician Itard, who through his successful treatment of the "savage of the Aveyron" made for himself a name of world renown. This "savage" was simply a weakminded person who either had been abandoned in the forest by his relatives, a means of disposing of undesirable children not infrequent in those times—or had lost himself in the woods of the Aveyron in southern France, and there led a poverty-stricken existence. When he was found in the year 1801, he had sunk almost to the level of a beast which, considering that this unfortunate creature had for years not seen or come in contact with any human being, was not surprising. Itard most humanely interesting himself in this "savage," devoted six years of his life to arousing the man from his mental decadence and even though he did not finally succeed, he at any rate was able to give to him a certain amount of knowledge, through which he was helped to support himself by useful work. Such a thing was at that time an entirely unheard of occurrence, and the interest Itard aroused with his "savage," whom he had transformed into a well behaved being, surpassed all description.

In order to understand this, we need only consider the notion of those times that two things were unalterably proven. The first accepted fact was the educational incapability of idiots. Because of that belief no person seriously thought of improving weak-minded children through training and education. It was recognized as an accepted truth, secondly, that not only the adult insane but also idiotic children were possessed by the devil. How genuine that belief was is shown when it is recalled that so eminent a man as Luther, on seeing a very unclean, malicious and voracious idiotic child, proposed to take the little one into the water and chance its being drowned.

Encouraged by Itard's success, Ferrus, in 1828, opened a special school for cretins in the Bicêtre in Paris, which in 1839 was followed by another under Voisin's direction. Voisin's successor was Edouard Séguin, whose name is connected with the second important step towards the attainment of a method of treatment, founded upon physiological psychological principles, for mental weakness in children. As we know, Séguin emigrated in 1848 to America. Here he was superintendent for a long time of the Pennsylvania Training School, as well as of the Massachusetts Institution for the Feebleminded at Waverley. He died as a practising physician in New York City, in 1880. Séguin, as a pioneer, elaborated a system of medical pedagogy, and in a book entitled "Traitement Morale, Hygiène, et Éducation des Idiots et des Autres Enfant Arriérés," gave expression to his views. This book was followed twenty years later (1866) by another, entitled "Idiocy and Its Treatment by the Physiological Method." Both books have been translated by Dr. Montessori into Italian, and have formed, so to speak, the substructure of her method.

The name which represents the third forward step in the progress of the physiological method is that of Guggenbühl, who in 1836 began devoting his time to the cure of cretins, and for this purpose established an institution upon the Abendberg near Interlaken, which soon became renowned in all parts of the world. The visitors who poured in from all sides became convinced, as a result of what they saw there, of the possibility of educating *all* feebleminded persons and returned home imbued with enthusiasm for the foundation of similar institutions in their own countries. Unfortunately, the enthusiasm for Guggenbühl and his activities lasted barely twenty years. Naturally he had failures, some of which were due to the fact that he undertook frequent and long journeys during which his pupils were left in the hands of incapable and ignorant persons. He was then accused of promising more than he was able to do. Little by little his friends and patrons left him, and in 1860 the institution had to be closed. Three years later Guggenbühl died in solitude.

The disappointment experienced by the supporters of Guggenbühl must not be attributed to any shortcomings of the physiological method, but was essentially dependent upon the fact that Guggenbühl had no clear understanding of the various forms and causes of feeblemindedness, and was not able to discriminate between the various degrees and kinds of infirmity on which depends the incapacity of the feebleminded for educational equipment. The same may also be said of Séguin. Both physicians started from the correct premise that, as the mental abnormalities of childhood are connected with bodily defects, abnormal children require special pedagogic treatment. But to their way of thinking, there existed only one class of feeble-minded children, which by Séguin was termed "idiots" and by Guggenbühl "cretins." They could not know that idiocy and cretinism were dependent upon entirely different causes. The relation which the functions of the thyroid gland bears to mental development has been recognized only in recent times, and only through that recognition has the nature of cretinism become clear. Similarly, our knowledge of the changes in the brain which are characteristic of idiocy and our knoweldge of the methods which enable us to estimate the capacity for training possessed by defectives and deficient children, are of recent acquisi-

tion. Séguin neither knew how to differentiate between true feeblemindedness dependent upon congenital brain defects or upon defects acquired early in life, nor did he understand that mental backwardness may be simulated—for example by adenoid vegetation of the nasopharynx. Finally, also, neither Guggenbühl nor Séguin possessed that diagnostic discernment which would have enabled them to recognize the large and varied horde of mental deficiencies which modern investigations have shown to be dependent not upon organic defects but upon functional nervous disease and which, being in great part due to neuropathic taint affecting the intellectual development, the emotional life and manifestation of the will, occupy a position midway between health and disease.

This lack of knowledge, not due to any fault of their own but to the state of science at the time in which they lived, could not help but result in the mistakes which were made by Séguin and to a greater extent by Guggenbühl, mistakes which caused the merits of these two men to be so soon forgotten. To Madame Montessori belongs the credit of having, so to say, rediscovered Séguin and having disinterred his neglected work. When Guggenbühl removed his cretins and the children whom he believed to be threatened with cretinism, from the swampy lowlands of the valleys into the pine air of the Abendberg, he acted according to physiological principles. His aim was to take them from the noxious influences which were the cause of their trouble and which, in the opinion of the times, consisted in a saturation with moisture of the stagnating air of the valleys. Undoubtedly among these children there were many in whom the thyroid gland was still capable of functionating, at any rate, partially, and in whom the more favorable conditions of life to which they were removed produced an improvement in thyroid secretion thus causing at least an amelioration of their disease. It was such cases that led to exaggerated expectations which could end only in disappointment. In other children the thyroid gland was entirely absent or its function had been totally eliminated, while in still others it was a question not of cretinism but of weakmindedness with brain defects. In all such cases, of course, the removal to the Abendberg could be of no avail.

Séguin's failures are also to be ascribed to the fact that he was unable to individualize properly, that he did not consider with care the degree of cultural capability, which varied according to the nature and seriousness of the mental disorder. Nevertheless, even to-day, some of Séguin's principles may be looked upon as exemplary. This may be said of the method which he employed in the development of sensory activity, the basis of all mental activity, and also of perseverance, a quality which he considered one of the most important attributes of the educator, particularly in those cases in which certain work is demanded, for which the pupil would be perfectly competent were it not for a marked weakness of will power which prevents him from accomplishing the allotted task. In his "traitement" Séguin himself gives a very remarkable example of this perseverance. He tells of an intensely excited, restless, constantly moving idiot, whom he pacified by sitting opposite him, holding the legs of the child with his knees, with one hand holding the hands of the child, and remaining in this position for five weeks, excepting only the time devoted to eating and sleeping. True, this mechanical fixation is not actually a means of education but merely an adjunct of training. Still the example of Séguin teaches us that perseverance, aided by the power of personality, will bring about results which at first impression we would believe to be impossible.

It seems to me no better example of perseverance and endurance can be found than is furnished by Dr. Montessori herself. It is she who represents the fourth and at the same time the newest stage in the development of the physiological method.

Without considering what effect her ideas would produce, she gave up years in a spirit of complete self-sacrifice, to the theoretic and practical study of the feebleminded. In order to be able to weigh every word and gather Séguin's true spirit, she herself translated the two volumes of his writings into Italian; after graduation she again attended lectures upon psychology and pedagogy, determined to found her work upon a scientific basis. Then, unknown as she was, except perhaps for the fact that she was the first woman to have been graduated from the medical faculty at Rome, she appeared before the public with certain practical experiments and ideas—call them novel or not as you will—and at once achieved a far-reaching success.

Whether the principle for which Montessori battles, the free individual self-development of the child, has found a specially favorable soil in the despotic atmosphere which still rules the Italian schools to a great extent, I cannot say. Nor can I decide whether her most marked step, the application of Séguin's principles to normal children, stamps her a genius, if by this we are to understand a person who entirely intuitively recognizes a new truth. But I do know that her method is the product of intense and persistent work and that it is more in unison with the demands of physiological psychology than any other existing method. Free self-development of the child constitutes the device of the Montessori method. Nothing can be brought out from a child which is not within it, but qualities which it possesses may be allowed to wither or may be crushed; so also, without being forced, the same qualities may be developed, or, rather, may be allowed to develop themselves to their greatest possible activity. Whether the one or the other takes place, is entirely a question of method. In these times of steadily augmenting demands upon the activities of every person, that method is the best which will increase the individual's capabilities for action and adapt them to our ever-changing requirements, without in any way overstraining the child. Herein lies the differentiating test. This surcharging is often not so much dependent upon the fact that children are obliged to learn too much as it is upon the fact that the fulfillment of the task allotted has been made unnecessarily difficult through incorrect mehtods of training and instruction. The superiority of Dr. Montessori's method is due above all to the fact that she, in accordance with physiological psychological laws, adapts the principle of free self-development to the single stages of the child's progress and to its powers of comprehension, and in this way facilitates its acquisition of knowledge.

According to Wundt, the mental development of the child follows two principles—that of progression and that of evolution. Progression finds its expression in the fact that the development of the child advances in a certain well defined sequence, for which a preceding grade is always the necessary prelude to the following one, the acquisition of new capabilities therefore being possible only upon a basis of already existing ones. Evolution, on the

other hand, refers to the fact that certain capabilities are already present at the time of birth, and, one function creating the path for another, develop themselves from primitive to more and more complicated ones. The training and care of the child are, therefore, to be considered rational when they adapt themselves, in accordance with the single stages of development, to the traits and emotions with which nature has endowed the child and which serve for the maintenance of life. In such training and care two errors are to be avoided. Natural development should not be forestalled by demanding performances of the child which correspond to a higher plane, one which it has not yet attained. But neither must the demands remain behind or at that plane of natural development which the child has already outgrown in its natural advance to the next higher one. Over-activity is as harmful as under-activity. True pedagogic success is possible only when the cultural material with which we are dealing corresponds to natural progression and evolution.

The gratification of quiet meditative investigation certainly did not lead investigators to busy themselves with child psychology. All our knowledge in this field is due to the necessity for having an exact pedagogical basis. Those errors and failures which have hampered the old pedagogic system, found their explanation only when the strict correspondence to natural laws and rules, the development of the child's mental life, and the development of its bodily functions, had been recognized. Séguin and Guggenbühl had already recognized this truth in part. Froebel followed with his recognition of the great significance of the play impulse for mental development, and he in his system of education, made full use of this knowledge as a means for self-exercise, self-control, and self-instruction. Step by step the advance was kept up, until finally, through Wundt, physiological psychology attained its present development. But even this extraordinary progress remained incomplete, so long as the gauge was wanting with which to differentiate precisely between health and disease. Information of greatest value regarding the mental life of adults, as well as of children, could be gained only when physiological psychology through associating itself with pathological psychology had become true psycho-pathology. In the Montessori method the principles of both pedagogic as well as those of pathologic psychology of childhood are brought into use.

The premise for all mental development is furnished by the attention. Attention varies in degree. Under normal conditions the inability to concentrate the thoughts upon a certain object may be due to fatigue. But it is also possible that the lack of attention is caused by the inability to exclude other ideas which do not pertain to the matter in hand, or in an inability to connect associatively those concepts which are being acquired with those which are already present. Where the thoughts can be concentrated through learning, however, the acquisition of knowledge shows an interesting psychologic orderliness. We see how the attention is, automatically turned, so to speak, toward notions which impress us intensively, how those certain brain functions whose employment was at first possible only with great effort, little by little are transformed into automatic acts, and how the ideas upon which the automatic actions are based, step back from the threshold of consciousness which they originally occupied to a lower plane of consciousness, in order to make room for new impressions.

Wundt calls consciousness an inner seeing. But as we know, all sight impressions do not take place with the same clearness and distinctness, the variations depending upon whether they reach only the periphery of the visual field, or its center. The closer they approach the fixation point, the clearer are the perceptions, and the more they are removed from this point the more indistinct do they become.

It is precisely so in the various contents of our consciousness. Only a minimal number of the contents are brought to or reach a clear perception—figuratively speaking—in the fixation point of consciousness, while the majority remains obscured.

The entrance of a concept into the visual field of consciousness is designated by Wundt as perception, the entrance into the fixation point as apperception. This latter, by means of the attention, announces itself as an inner happening. The state of attention, inseparably connected with apperception, is called active when the process of apperception is associated with the feeling of self-performance. It is called passive, on the other hand, when a psychic happening, so to say, forces itself upon us and thus produces in us the feeling of submission.

Assuming the organ of special sense, the sensory nerves and the sensory centers to be intact, not only perception, but also apperception should, under normal conditions result. Nevertheless in many children the contents of consciousness do not rise to clearness and distinctness. Such children, for instance, do not fixate any object, even when it enters the visual field with the utmost distinctness. They are, so to say, lacking in apperceptional capacity. The contents of consciousness remain perceptionally isolated and therefore cannot be brought into those manifold relationships which form the basis of every activity of the mind. Under these circumstances no experience, not even of the most primitive kind, takes place, and even the constant recollection of an idea does not leave behind it a clear memory picture. It is for this reason that such children although their sensory apparatus may be normal, must be placed on a par psychically with those who, through defects of their sensory apparatus, are rendered incapable of receiving sensory impressions.

Whether the power of apperception is present may be determined best in accordance with Wundt's law of correspondence of apperception and fixation. This law shows that the visual lines of the normal organ of sight, by means of a surely acting central mechanism, become focused upon that object toward which our attention is directed. If no object, even when its rays fall upon the point of clearest vision, on the retina of the eye, is capable of exciting attention, then that determining impulse to fixation, which arises from the endeavor to obtain a clear and precise picture of the object is wanting, and no apperceptional power can exist. Consequently, also, all those mental processes which we designate as power of recollection, formation of concepts, and judgment become impossible. Upon the basis of this law of Wundt, it is possible to test the cultural capacity of feebleminded children, and we are able to differentiate three degrees of feeblemindedness:

First, the light grades, in which the capability is present of spontaneously directing the attention to various objects of the outer world, and still such active apperception fails to give the necessary clearness and distinctness to the resultant ideas.

Second, medium grades, in which the passive attention may be aroused, yet no spontaneous development of active apperception takes place.

Third, severe grades, in which even passive attention is wanting and, in which, therefore no culture is possible. Idiots whose powers of attention may be passively aroused, in whom intense sensory excitations produce distinct reactions, may be considered capable of being educated in so far as it may be possible to transform passive attention into active attention. The method of doing this consists in inducing the child to make a selection between various objects. Thus a new factor is aroused in the mind of the child, which may be designated as psychic spontaneity or self-activity. Not until this period of mental development has been reached is the feebleminded child capable of voluntary actions.

It seems to me the Montessori method is specially adapted to effect the transformation of passive attention into active attention, and it does this by means of the principle of self-development, as employed particularly in the development of sensory activity. Another method for the recognition of mental endowment is perimetry or the measurement of the visual field. This test depends upon the fact that every mental excitation produces a certain amount of brain fatigue which finds its expression in a restriction of the visual field. Inasmuch as the intenseness of mental application required to solve one and the same problem, varies in children of varied capabilities, fatigue of the brain with its resultant restriction of the visual field will occur more slowly in some cases, more rapidly in others.

By far the most reliable method for the evaluation of a child's intelligence is that series of tests evolved by Binet and Simon. By means of these, it has been said by a recent writer, the psychologist, after forty minutes' examination, can obtain a more enlightening estimate of a child's intelligence than can be reached by most teachers in a year of contact in the school room.

These intelligence tests consist in asking the child a series of carefully chosen questions, which can be answered by normal children of average intelligence. The questions are graded in accordance with the intelligence at different ages of normal children. If the answer of the child which is being examined corresponds to the intelligence of a child of its own age, then it is designated as normal. If, on the other hand, the child can answer only those questions which correspond to the powers of comprehension and to the conceptual sphere of younger children, then, according to the difference in age between it and the class which normally is able to answer those questions, it is classified as retarded, imbecile or idiotic. For instance, a child twelve years of age, having only the conceptual powers of a normal child of nine, would have to be classed as imbecile. Of course neither will this or any other method test the child's intelligence with mathematical precision. My chief concern has been to show that only that pedagogy can count upon success which accurately adapts its plan of training and instruction to the stage of development which the child has reached and to the contingent power of comprehension which it possesses. This applies in normal as well as in pathological conditions. Knowledge of physiologic-psychologic laws as well as of the methods for testing the intelligence and educational capability constitutes the essential premise for all promising pedagogic work.

Séguin and Guggenbühl instinctively strove for this exact pedagogic basis, but were unable to attain it. Madame Montessori has been more fortunate, for she had at her command the entire modern equipment furnished by physiology, pathology, and experimental psychology.

Recognizing that all mental development is dependent on the acquirement of ideas, and these in turn are dependent on sensory impressions, the Montessori method lays most stress upon the greatest possible perfectedness of sensory activities. The shutting out of single sensory organs in order to bring the action of others more intensively into play, as for instance the binding of the eyes and the "seeing with the fingers," in which objects, without being seen, are recognized through their consistency and conformation, is eminently adapted to training the organs of sense.

Since the child's own experiences constitute the most important and most potent educational material, the ways and means through which mental spontaneity is aroused in the child by Dr. Montessori's method of self-discovery must be of no little worth. For, inasmuch as this method allows the child to be guided entirely by its natural impulses and instincts, it adapts itself to the various stages of development and to the powers of comprehension which go with them. The play impulse little by little becomes converted into a desire for knowledge. First such simple ideas as those of form, number, etc., are derived by the child from the objects which surround it; then, through comparing the objects which it perceives in relation to their similarity or differences of form, color, etc., it learns to choose, and thereby develops judgment.

In the same way the highest faculty of the mind, the will, becomes developed step by step, by means of progression. Will-training is frequently confounded with will-breaking; but just as obstinacy is not an evidence of strength of will but, as shown by the inability to govern one's self, is an evidence of weakness of will, so the breaking of a child's will cannot be considered good discipline. True discipline is based upon freedom of action. Only that child is free which, through a strong will, has itself in its own power. Repression, the employment of coercive measures, may be convenient for the attainment of discipline, but it is pernicious, inasmuch as it inhibits the spontaneous activity and initiative so important in the struggle for existence. Measures of coercion must be confined to protecting the child against its own perilous acts. The exemplary discipline obtained in the Casa dei Bambini, founded by Dr. Montessori or conducted upon the principles she advocates, prove that we can get along very well without repression, and that the control which the children exercise among themselves fully suffices so to allow the will to develop in freedom that the rights of others are in no way transgressed.

To me it is clear, from what I know of Dr. Montessori's work, that the general introduction of her method would be the equivalent of a complete reorganization of our school system. That an amalgamation of Froebel's and Montessori's ideas in the kindergarten would give desirable results I doubt. It seems to me the future development of the matter will take place in the following way: Compromises between the current principles of training and instruction and the Montessori method, so different in its construction and ideas, will lead nowhere. Only something integral and decisive can be effective. Schools and houses of childhood must be established in which the Montessori principles will rule alone. Only thus will we be able to see which is the superior system. And, more especially we will then see

whether the greater efficiency undoubtedly attained in the Casa dei Bambini also gives advantages for later life. Whether the school boards will decide upon radical reforms in the sense of the Montessori method will depend upon the outcome of such pedagogic competition.

But, even without further delay, the Montessori method gives the greatest promise of success when applied to the training of those mental inadequates and those psychopathic inferiors who stand upon the border between mental health and disease and who are unable to keep pace with normal children. I again lay stress upon the fact that such apparent inadequacy and inferiority, with the consequent incompetency, are frequently due, not as is so often believed to stupidity or obstinacy, but to the fact that the pedagogy which to-day is sovereign in our schools has been unable to find the key to the mental life of these children. Careful individualization is of special importance in their cases, and, as Montessori has shown, the more the pedagogic method is adapted to the child's individual endowment the greater will be the progress obtained. Such individualization, however, is possible only if the degree of intellectual and cultural capacity possessed by the child be first accurately established. It is for this reason that I have thought it necessary to enter upon the question of psychological methods of examination, methods which alone enable us to form an opinion of value in regard to what is health and what is disease. Where mental defects are marked, the principle of free self-development will have to be modified in accordance with the individual degree of intellectual and educational capacity and, not by any means least, in accordance with the proclivities of character and will.

All spontaneous manifestations are naturally different under pathological conditions from what they are in normal children. Whether the Montessori method is new and whether it accords in every direction with the demands of present day pedagogy are questions of far less importance for me than the recognition that it is to-day the method which best fulfills the requirements of psychology and psychopathology. This is proved by the increased efficiency which the employment of this method has produced in very young normal and defective children. I therefore see no reason why this method should not be adaptable to the varied requirements of all cultivated peoples. But just as little do I doubt that it will share the fate of all good ideas; some day it will be replaced by a method of even greater worth.

44 West Seventy-second Street.

## PRIMARY SPLENOMEGALY OF THE GAUCHER TYPE;

### REPORT OF A SUCCESSFUL SPLENECTOMY.

By WILLIAM A. DOWNES, M.D.,

NEW YORK.

My object in reporting the following case of primary splenomegaly of the Gaucher type is twofold—first, to call attention briefly to the clinical manifestations of this rare but extremely interesting condition; second, to record the second successfully operated case in this country, which, with Erdmann's case, the first operative recovery in America (to be reported shortly), brings the total number of operated cases up to seven. Of this number, there have been five recoveries and two deaths. The history of my case is as follows:

F. M., female, twenty-eight years of age. Born in eastern Tennessee and lived most of her life in the South.

*Family History.*—Father and mother living and well. One brother died of "brain fever." One brother living and well. Two sisters living. They enjoy fair degree of health. Each quite nervous. No history of similar illness in any member of the family. No history of tuberculosis or cancer.

*Past History.*—At six years of age patient suffered from a continued fever. She does not remember any of the symptoms. She was confined to the bed for six weeks. Had measles, mumps, whooping-cough, and chickenpox in childhood. Thinks she had malaria fourteen years ago. Had fever and headache. Does not remember having had chills or sweats. Took quinine at that time. Has had several attacks of tonsillitis. Three and a half years ago had rheumatism. For years patient has been troubled during the winter and spring with cough. No history of night sweats or fever accompanying these attacks. No history of pleurisy or pneumonia. Patient has had attacks of urticaria about once a year. Last attack during the past summer. No symptoms of lues. Appetite has always been poor. "Relatives thought that patient starved herself." Bowels during recent years showed tendency toward diarrhea. She often had two stools per day. At times she had five or six stools in the twenty-four hours. Takes coffee moderately, tea occasionally; does not use alcoholic drinks. Has always noticed that small sores or scratches were very slow in healing.

*Present History.*—Dates from childhood. She was never strong like other children, but always weak and easily fatigued. At thirteen years of age she was so weak that she consulted several physicians. At that time a mass was observed in the left hypochondrium. "Physicians did not know whether this was the spleen or kidney." She was quite pale and was given iron and arsenic. External applications were applied over the (spleen) tumor. She got stronger for a while and felt better. This was only temporary, however. She again began to suffer from general weakness. The patient felt the mass in her abdomen and noticed from time to time that it was increasing in size. She consulted other physicians who told her that the mass was her spleen. For years patient suffered from dull headache. This has been in the occipital region and has extended to the back of her neck. It was always worse at night.

For the past ten years the patient has been troubled with insomnia. She has suffered much from dull aching pain in the small of the back. This has been almost constant, but has varied in severity. She always felt as if "her back had been in a strained position." She has had a sensation of weight or heaviness in the abdomen. At times she has had pain in the left hypochondrium. For years she has experienced shortness of breath on slight exertion. Her limbs have felt tired and have ached as though her "bones were sore."

*Examination.*—General appearance is that of a rather severe anemia. There is pigmentation of forehead, sides of nose and cheeks, also chin. The conjunctivæ present, in a measure, the wedge-shaped thickening referred to by Brill. Practically the entire left half of the abdomen is occupied by a smooth fairly movable tumor which is without doubt the spleen. It extends to within two inches of the umbilicus and well into the pelvis. The liver is pal-

pable below the margin of the ribs, but is not much enlarged. There is no free fluid in the abdomen. Superficial lymph-nodes not palpable. No pain or tenderness elicited by pressure over long bones. Pelvic examination negative, except for moderate retroversion. Weight 113½ pounds. Examination of blood for malaria negative. Widal negative. Wassermann negative. October 4 she had 3,840,000 red cells, 1,400 white cells; polymorphonuclears, 60 per cent.; mononuclears, 40 per cent.; hemoglobin, 49 per cent. Urine showed trace of albumin. An *x*-ray examination of the abdomen was negative. Was put on iron and arsenic; during next three weeks gained four pounds in weight and hemoglobin went up to 57 per cent. However, the leucopenia became more marked, the count showing as low as 900 white cells per c.mm. on October 28. Under forced feeding and increasing doses of iron and arsenic, the blood picture began to show improvement. While the count had not changed materially the hemoglobin went up to 65 per cent. Her general condition seemed better in every way.

*Operation* was offered at this time and gladly accepted by the patient, December 14, 1912. The spleen was removed through an eight-inch vertical incision through middle of rectus. It was free from adhesions except posteriorly and these were easily broken by the hand after the pedicle had been secured. There were a number of anomalous vessels of large size, four or five, each of which was secured separately. A small cigarette drain was introduced at the center of the wound, as there was some oozing from a small tear in the mesentery. Very little shock.

Postoperative recovery was uneventful, excepting that day after operation she had a hemorrhage in the right conjunctiva, also an ecchymotic area size of the palm over the right buttock. Was then given 20 c.c. horse serum hypodermatically. No other evidence of tendency to bleed. Drain was removed on seventh day. Temperature ranged from 100° to 101° for twenty-one days, gradually coming to normal, wound healing *per primam*. Four days after operation had 3,860,000 red cells; 16,000 white cells; 97 per cent. polymorphonuclears; hemoglobin, 76 per cent. Discharged January 24, forty-one days after operation.

At that time blood count was 4,800,000 red cells; 8,800 white cells; polymorphonuclears, 45 per cent.; large lymphocytes, 16 per cent.; small lymphocytes, 26 per cent.; transitional cells, 8 per cent.; eosinophiles, 3 per cent. Now weighs 116 pounds. General condition improving rapidly. Shortness of breath has disappeared. Barring some pain in back shortly after operation she has suffered no discomfort nor has she had pain in the long bones.

*Pathological Report.*—By Dr. Tytler, New York Hospital. Weight of spleen with extravasated blood 1,813 gms. Measures 35 x 13.5 x 6.5 cm. Organ is of oblong shape, square at the postero-superior end and coming to a point at the lower anterior end. The thickness is fairly uniform so that the organ forms a flat slab, slightly thicker at the upper end. On the posterior margin at the junction of the middle and upper thirds is one deep notch extending nearly across the diaphragmatic surface, and above this in the middle of this surface is another short notch.

The surface of the organ shows a uniformly smooth and transparent capsule, save for scattered, very fine, transparent, dewdrop-like points of less than one mm. diameter. The color is uniform reddish brown with a grayish tinge. The organ feels rather firmer and more leathery than normal, of about the consistence of a soft liver.

On section, the organ cuts readily. The cut surface is flat, firm, and leathery, and considerably less friable than a normal spleen. The color is a reddish gray which on closer examination is seen to be due to innumerable minute gray points separated by a small amount of dark red substance. Here and there are seen scattered circular, dark red spots of about one mm. diameter which are distinctly raised above the surface. Trabeculæ almost indistinguishable and there is no evident increase of connective tissue about the main vessels.

The most prominent feature of the histological picture is an extensive, uniform, diffuse endothelial hyperplasia. The endothelial cells resemble those seen in the so-called "large celled hyperplasia" of lymph sinus endothelium, and form a solid mass or sheet lying sometimes within the sinuses but mostly between them. The cells are large and roughly spherical having a relatively large amount of faintly acid staining, homogeneous cytoplasm and relatively small, oval, vesicular, or smooth staining nuclei. The cell borders are indefinite and in the more solid masses cannot be distinguished. Where the cells are within the sinuses they often lie loose with the blood cells between them.

The sinuses are compressed by these cell masses but are still patent. They contain red blood cells—occasionally nucleated, numerous cells of the type of large lymphocytes, and relatively numerous polymorphonuclear leucocytes, mostly neutrophile. The sinus endothelium is hypertrophic but is not seen to be actively proliferating.

The pulp cords are almost obliterated, being represented by narrow bands of lymphocytes which separate the groups of endothelial cells. The lymph follicles are few and small but otherwise appear natural. From their distribution and size they apparently represent the darker points seen in the gross examination. The trabeculæ are not appreciably thickened.

The histological picture corresponds with that of the condition described originally by Gaucher as "Epithéliome primitive" and later by Bovaird as "Primary Endothelioma."

From the history it will be seen that the patient's symptoms began in early childhood, and at the age of thirteen a tumor was discovered in the abdomen. Pigmentation of the forehead, cheeks, nose, and chin had been present for many years. The conjunctivæ presented the wedge shaped thickenings. The superficial lymph-nodes were not palpable. The liver could be felt about one inch below the ribs. She was not jaundiced. There was no free fluid in the abdomen. Barring a marked leucopenia and rather severe anemia, examination of the blood showed no changes. She had never suffered from epistaxis or hemorrhages from the mucous membranes, although she had noticed that her flesh bruised easily and that small scratches and sores were very slow in healing. Her general condition was very fair. She was able to go around in a limited way, and enjoy herself, but the fatigue and sense of weight in her abdomen caused distress and it was on account of these symptoms that she sought relief. This clinical picture, extending as it does over so many years, corresponds almost exactly to that associated with primary splenomegaly of the Gaucher type, and should have been sufficient to have suggested that diagnosis.

However, my attention had not been called to the

literature of this subject and I had failed to profit by the excellent work of Bovaird, Mandlebaum, and Brill. To the latter belongs the credit of establishing the clinical diagnosis of this type of splenic hypertrophy. Four cases occurred in one family in Brill's practice, two of which were proven by autopsy. The disease is distinctly of the family type, but also occurs in isolated cases. The case here reported belongs to the latter class, for examination of the brother and sisters fails to show enlargement of the spleen. Although Mandlebaum has shown that the lesions occur in the bone-marrow, lymph-nodes, and liver as well as the spleen, the tendency to malignancy is so slight it would seem that removal of the spleen, the original seat of the disease, is indicated in every case, barring, of course, those afflicted with complicating diseases of a severe nature. The cases from which the spleen has not been removed usually die of some intercurrent disease. In the case herewith reported, splenectomy has worked wonders even in this short time. The hemoglobin has gone steadily up, the shortness of breath has disappeared, fatigue has given way to a sense of well being, and in every way the patient has changed for the better. She considers herself cured.

I would refer those interested in the detailed pathology of this disease to F. S. Mandlebaum's recent article in *The Journal of Experimental Medicine*. Dr. Mandlebaum has very kindly furnished me with the statistics of all the cases of splenomegaly of the Gaucher type, proven by examination of the spleen or by autopsy, recorded in the literature up to the present time. My case brings the total to twelve. The list of cases is appended in the order of their appearance.

Case I.—Gaucher, 1882. Female, aged 32 years; spleen was enlarged for 25 years; pulmonary tuberculosis developed before death.

Case II.—Follier, 1895. Female, aged 6 years; abdomen became large when two years of age. At autopsy, bronchopneumonia and pleurisy; no tuberculosis.

Case III.—Picou and Ramond, 1896. Female, aged 32 years; abdominal affection noted at age of 28 years; following a trauma; operated for fibroid of uterus; large spleen found and removed. The patient recovered.

Case IV.—Bovaird, 1900. Female, aged 16 years; abdomen began to enlarge at age of 3 years. Splenectomy; patient died three hours later.

Case V.—Brill, Mandlebaum, and Libman, 1904. Male, aged 34 years; spleen began to enlarge at age of 19; died of hemorrhagic pericarditis. First male case reported; lesion in bone marrow described for first time.

Case VI.—Schlagenhaufer, 1907. Female, aged 41 years; abdomen began to enlarge at age of 5 years; at autopsy, generalized miliary tuberculosis found.

Case VII.—Von Herczel, 1907. Female, aged 37 years; abdominal enlargement noticed at age of 33; spleen removed; patient recovered.

Case VIII.—Marchand, 1907. Female, aged 44 years; splenic enlargement noted at age of 35; death due to asthenia.

Case IX.—Brill, Mandlebaum, and Libman, 1909. Female, aged 37 years; enlarged spleen noted at age of 21; death due to fracture of the skull.

Case X.—De Jong and Van Heukelom, 1910. Female, aged 12½ years; splenic enlargement noted for five years; spleen removed; patient recovered.

Case XI.—Mandlebaum, 1912. Male, aged 4½ years; enlarged spleen noted for one year; splenectomy; patient died the following day. Youngest recorded case, and second male case reported.

Case XII.—Downes, 1913. Female, aged 28; enlarged spleen for fifteen years; spleen removed; recovery.

Note.—Since the manuscript of this article was submitted for publication Wilson has reported three cases of primary splenomegaly (Gaucher), from the Mayo Clinic. Two of these cases (Nos. G-8869 and A-9315) have previously been recorded by W. J. Mayo (*Journal A. M. A.*, January 1, 1910). The pathological report in both was given as chronic hyperplasia. For this reason the cases could not be included with those previously recorded in the literature as primary splenomegaly of the Gaucher type.

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## A METHOD OF CLASSIFICATION, DIAGNOSIS AND THERAPY OF KIDNEY DISORDERS, BASED ON FUNCTIONAL TESTING.

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It was not so very long ago that nephritis was considered a disease entity which, according to duration and severity, showed varying symptoms and varying pathological lesions. That was the view held by Richard Bright who first in 1836 pointed out the connection between anatomical changes in the kidneys and the occurrence of albuminuria and dropsy. The same view was held during the period of brilliant pathological research which followed: the period that included the names of Henle, Virchow, Ludwig, Traube, Cohnheim, and Klebs and that gave rise to the anatomical classification of kidney lesions now in use. In 1879, however, Weigert demonstrated that these lesions represent, not the successive changes of a single disease process, but different processes or disease entities; that is, different types of nephritis.

Parallel with the pathological development of the subject, proceeded the study of the functions of the kidney. At first it was considered that there was but one function; that in the glomerulus a simple filtrate was pressed out which represented in all essential features a very diluted urine, the constituents of which had the same degree of concentration as that which they had in the blood serum. In the course of its passage through the tubule, this filtrate, this diluted urine, was condensed by reabsorption of a portion of its water. According to this theory, the composition and degree of concentration of the urine depended chiefly on blood-pressure and the varying composition of the blood, without implying any secretory or glandular activity on the part of the kidney structure. This was the view held by Ludwig and his school. In opposition to this theory, Bowman and Heidenhain taught that the function of the normal kidney depends upon a specific secretory capacity of the renal cell.

It was finally realized that neither theory alone would explain all the facts. As so often occurs in medicine, here also it was shown that in many respects both schools were right. At the present time, therefore, we can speak of a combination of the two theories which at first seemed so contradictory.

The modern view of the normal functioning of the kidney may be expressed somewhat as follows: First, chiefly in the glomerulus, by a simple process

of filtration, dependent, therefore, upon blood-pressure and upon the chemical composition of the blood, the urinary water and crystalloids are separated from the blood serum. Second, in its further course, chiefly in the tubule, this primary urine is concentrated by water reabsorption and at the same time enriched by the addition of certain organic and inorganic constituents. Some of these constituents are separated from the blood by osmotic action, while in other cases there is a true synthetic—therefore glandular—action. Functionally, then, we must distinguish at least three kidney processes; simple filtration, osmosis and synthesis or secretion. It has been said that chiefly in the glomerulus one function is performed, and chiefly in the tubule, the others. In the studied and necessary reserve of that statement lies, perhaps, a clue to the tangle in which we find ourselves involved when we attempt to match clinical and functional with pathological findings. They will not match; at least not with the precision and the certainty which is the aim of scientific medicine.

Because of this lack of correspondence between clinical and pathological findings, there has been for many years a tendency to substitute for the pathological a clinical classification or nomenclature of kidney disorders. It was Friedrich Müller who first, I believe, proposed that we diagnose at the bedside dropsical or nondropsical nephritis, instead of chronic parenchymatous, or chronic interstitial nephritis, or large white kidney, etc. But this was found to be an inexact basis of distinction for the reason that other symptoms were found—uremia for instance—sometimes in one form; sometimes in the other. Widal, later, proposed a third group which he called the "azotemic," or uremic type. But still there was overlapping and inconsistency, and this classification never made much headway toward general adoption.

So long as observation was limited to the human being, it was impossible to find exact analogues, either functional or anatomical, for the conditions dealt with at the bedside. New light came with the method of experimental pathology when it was found that different drugs, administered to healthy animals, cause injury to different parts of the kidney structure. By the administration of cantharides, for instance, a certain type of disorder could be produced and then studied and tested with laboratory precision. By the administration of corrosive sublimate and certain other drugs, other types of disorder could be produced. But these types were constant. The same drug produced always a disorder that had the same functional and pathological characteristics.

The next problem was the correlation of these experimentally produced types of nephritis with known clinical types. This correlation has finally, but not as yet completely, been accomplished by the method of functional testing. The method is, briefly, as follows: Certain comparatively harmless substances are administered to normal animals and the time required for complete elimination is noted. These same substances are then administered to nephritic animals of various types and the elimination time is again noted. The same substances are then administered to human subjects, both normal and nephritic—or suspected nephritic—and the elimination time determined. It has been found by Schlayer and his pupils in Europe and by Pearce and others in this country, that lactose elimination, for example, is delayed in the human being in those conditions which correspond, both symptomatically and pathologically, with experimental nephritis of the cantharides type, but not in other types. Similarly, potassium iodide and sodium chloride are delayed in clinical conditions which correspond with experimental nephritis of the sublimate type, but not in other types. These data are given in more detail in the accompanying schema.* Urea, employed as a test substance, is delayed only in conditions where there is a tendency to uremia—a tendency which is often found associated with the sublimate type, but which is also found, on rare occasions, as a pure type. The uremic type lacks, as yet, its experimental analogue and we do not know its histopathology. We know it only in its clinical manifestations. Clinically the type is fairly well defined. With the accompanying schema before us, let us now consider, from the standpoint of functional testing, the clinical characteristics of the several types of kidney disorders:

A SCHEMA FOR CLASSIFICATION, DIAGNOSIS AND THERAPY OF KIDNEY DISORDERS, BASED ON FUNCTIONAL TESTING

| Experimental Types | Cantharides | Corrosive Sublimate | | |
|---|---|---|---|---|
| Clinical Types | Vascular | Tubular | Uremic | Mixed |
| Percentage of All Cases | 40 to 50 | 5 | 5 | 50 to 40 |
| **Functional Tests:** | | | | Variable combinations |
| Excretion Time, Normal, Hrs. | Hrs. | Hrs. | Hrs. | |
| 2g. Lactose..... 4 | 8 to 12 | 4 | 4 | |
| 0.5g. Potassium iodide.....40 | 40 | 80 to 100 | 40 | |
| 10g. Sod. chloride.24 | 24 | 72 | 24 | |
| 10g. Urea.....24 | 24 | 24 | Retained | |
| **Clinical Signs:** | | | | Variable combinations |
| Heart..... | Hypertrophied | No change for years | Nor., or slight hypert. | |
| Blood vessels..... | Tendency to hemorrhage Tendency to spasm | Pallor of skin | | |
| Blood pressure..... | 180 to 250 mm.Hg. | Nor., or slight inc. | Normal | |
| Water excretion..... | Increased or normal | Retained | Normal, or inc. | |
| Specific gravity..... | Diminished or normal | Diminished | Normal, or diminished | |
| Salt excretion..... | Normal | Diminished | Normal | |
| Anasarca..... | 0 | + + + | 0 | |
| Uremia..... | 0 | 0 | + + + | |
| Albuminuric retinitis. | 0 | 0 | Constant | |
| Non-protein N. in blood serum..... | Normal | Normal | Increased | |
| Ambard's ratio..... | Normal | Normal | Increased | |
| Repugnance for meat | 0 | 0 | + + + | |
| Albuminuria..... | Variable; possibly 0 | + + + | + | |
| Formed elements in sediment..... | Variable; possibly 0 | + + + | + | |
| **Treatment:** | Reduce fluids and salt. Liberal diet, except with hemorrhage. No full baths | Reduce fluids No salt. Mixed diet. Hot baths useful | Fluids freely. In acute, no protein; in chronic, reduce protein to physiological requirements. No sweating | The dominant type |

1. *Nephritis with Delayed Lactose Excretion.*—This type is found pure—that is with normal iodide and normal urea excretion—according to Eppinger in 40 to 50 per cent. of all cases of nephritis. It is characterized, pathologically, by an endarteritis, not only of the glomerular vessels of the kidney, but also of the entire vascular system of the body. Because of this universal involvement and because, also, these lesions lead in time to sclerotic changes in the intima, with the inevitable accompaniment of high blood-pressure and hypertrophied left ventricle, this type of nephritis has been called vascular nephritis. The term serves the important purpose

*Adapted and enlarged from a schema given in lectures by Eppinger at the von Noorden Clinic, Vienna, 1912.

of reminding us that always, in this type of disorder, we are dealing, not with a local, but with a general condition. After febrile diseases, after tonsilitis, and in toxemic conditions, without the occurrence of other clinical signs and without the presence of demonstrable pathological lesion, incipient injury of the vascular mechanism can frequently be detected by the lactose test. Similarly, in conditions characterized by vascular crises, as in lead intoxication, angina pectoris, angina abdominis, intermittent claudication, transient aphasia and hemicrania, pareses, etc., where no other sign of renal involvement exists, positive results of this test will be obtained. The lactose test is a method in the interest of early detection, exact diagnosis and—as those clinicians who are employing it believe—a more rational therapy of this prevalent type of renal disorder. Schlazer first called attention to the fact that in the passive congestion of cardiac decompensation, lactose excretion is delayed. With restoration of cardiac integrity, the normal functioning of the kidney is resumed. Under the same conditions, functional deficiency of the liver is manifested by the occurrence of urobilinuria. But neither in the kidney nor in the liver—in transient passive congestion—can structural change be demonstrated.

Aside from lactose retention these patients have usually a sense of well-being and come to the physician, not for renal, but for cardiac troubles. They are often people whose physical work comes hard; who suffer from sudden attacks of angina pectoris, hemicrania, dizziness, great thirst and, with that, increased or normal output of urine. In more severe cases there may occur hemiplegia, due to vascular spasm and not to be confused with apoplexy: sometimes hemianopsia, edema of the lungs, sleeplessness, orthopnea, intermittent claudication and numbness of the hands and feet. These patients are subject also to hemorrhages in the kidney, hemorrhages in the retina, the brain, the stomach, in fact, in almost all organs, due to overdistended, sclerotic vessels. They never have true albuminuric retinitis, which is of toxic origin, but vision may be impaired by retinal hemorrhages and resulting scars caused by high blood-pressure and sclerosis. It must be borne in mind that as a rule high blood-pressure and the resulting cardiac hypertrophy are the dominating symptoms in this type of nephritis.

According to the anatomical nomenclature now in use the symptom picture we have drawn is that of the small white kidney. The brain symptoms—hemicrania, hemianopsia, transient pareses, etc.—have been considered uremic and have usually, I believe, been treated by withdrawal of meat and the administration of large amounts of milk. The disadvantages of this therapy are two: First, insufficient proteid supply, causing deterioration of the heart muscle and other working tissues; second, overdistension of the blood-vessels with fluid and unnecessary strain on the heart. With this mistaken therapy, heart troubles are apt to increase: edema, which may have been absent, developes from heart failure, or apoplexy prematurely closes the chapter. The mistake in therapy referred to has arisen from a misconception of the nature of the symptoms. They are not uremic but vascular. In pure vascular nephritis and in those cases which are of the mixed vascular and tubular type, probably 60 or 70 per cent. altogether, the nitrogenous elements are perfectly excreted—as may be determined by the urea test—and there is no reason for entire withdrawal of meat from the dietary. The symptoms mentioned, hemicrania, hemianopsia, transient pareses, etc., are due to vascular spasm. They are temporarily relieved by vasodilators, which would not be the case if they were uremic in origin. They are to be treated by limiting fluids and at the same time, in order to diminish thirst, by limiting salt.

In the medicinal treatment of chronic vascular nephritis, diuretin is the most important agent we have, not because it is a diuretic, but because it relieves the multiform subjective symptoms due to hypertension and arteriosclerosis. Diuretin dilates spasmodically contracted vessels everywhere. Albert Müller believes that this power extends to the *Vasa vasorum* and that for this reason its use in small doses over a long period by improving the nutrition of the vascular walls retards or checks the progress of arteriosclerosis.

Among the complications of vascular nephritis, hyperglycemia should be always in mind. The normal sugar value of the blood is 0.07 per cent. In vascular nephritis it may increase to 0.20 or even to 0.40 per cent. It is a malignant condition with a tendency to carbuncle, cataract, persistent, nagging neuritis and all the troubles of diabetes. No sugar appears in the urine, but it is to be treated along the general lines of diabetes.

2. *Nephritis with Delayed Iodide and Chloride Excretion.*—By far the most common and serious complication of vascular nephritis is that form of nephritis which is experimentally produced by corrosive sublimate and which appears clinically as a result of exposure or as a sequel of infectious fevers, like diphtheria, scarlet fever, pneumonia, etc. It is characterized pathologically by inflammatory changes in the tubular epithelium and has, therefore, been called tubular nephritis. When it is recalled that the efferent vessel of the glomerulus constitutes in its course the only source of blood supply to the convoluted tubule, and when it is recalled that in vascular nephritis this efferent vessel is diseased and narrowed by fibroid overgrowth and contraction of the intima, it will be readily understood that in vascular nephritis of long standing an imperfectly nourished and diseased tubulus is to be expected. The clinical characteristics of tubular nephritis so developed differ in no respect from those of the pure type which will now be described.

Tubular nephritis is seen in pure type in only 5 to 7 per cent. of all cases. Lactose and urea excretion are normal, while KI and NaCl excretion are delayed. In the clinical picture, edema and oliguria are in the foreground; the urine shows the presence of albumin and the sediment is rich in formed elements. In the chronic form lipoids and scanty blood corpuscles may appear, but may be entirely absent. The sodium chloride output is reduced and the specific gravity is low. The fluids of the edema contain large quantities of sodium chloride. Dropsy of the cavities is rare or very late and is more typical of the uremic form. Even in cases of long duration, increase of blood-pressure and cardiac hypertrophy never become very prominent—this in contradistinction to the vascular type.

In the purely tubular form the outcome into uremia is not observed. Death is rather the result of the dropsies or possibly of pulmonary edema. Since the therapy of tubular nephritis hinges largely upon the interpretation that is put upon the edema, this symptom must now be more closely analyzed. The average normal amount of blood in the human body is 5,000 c.c. If we represent this as a 0.7 per cent., that is, as a physiological salt solution, it corre-

sponds to a total of 35 grams NaCl. Thirty-five grams is the normal NaCl content of the blood. If now, to a patient with tubular nephritis who is already at the limit of his salt excreting capacity, 21 grams of NaCl in addition to the usual daily consumption be given in the food, this 21 grams of salt will be retained and will bring about a NaCl concentration of the blood above the physiological limit, which is 0.7 per cent. To restore the normal concentration, sufficient water must be retained in order to make of this 21 grams a 0.7 per cent. solution; that is, 3,000 c.c. If now we assume that in order to prevent undue salt concentration in the blood, this 3,000 c.c. of fluid is retained, we face a new difficulty. We have now to deal with an hydremia, a condition in which osmotic relations with the surrounding tissues are so changed that the excess of fluid, with its salt in solution, passes through the vessel walls and into the interspaces of the surrounding connective tissues, causing edema—a condition which is, therefore, primarily induced by the salt retention. If now we assume that salt be entirely withheld from the food and if we assume that the kidneys are able to excrete and do excrete, for example, 7 grams of salt per day, a reversal of the above process takes place. With removal of 7 grams of salt from the blood each day, none being added in the food, 7 grams of salt with a corresponding amount of fluid will pass from the tissues into the blood, and in three days, in the example we have chosen, the entire edematous accumulation will have been removed. In practice it is, of course, only in the gravest conditions that salt need be entirely withheld from the diet. By exclusion of milk, by using only meat that has been chopped and washed, butter and bread made without salt, and by adding no salt to the food, either in the cooking or at the table, the amount ingested can, in ordinary conditions, be kept within bounds; that is, within the excretory capacity of the kidneys. The best guide is the weight of the body which should be taken daily. In the beginning as much as 10 to 15 pounds of fluid may accumulate before any change in the appearance of the patient is noticeable by the eye. This so-called pre-edematous stage should be watched for with the scales.

Medicinally, diuretics, including diuretin, are contraindicated, because all of these drugs are irritants; they cause hyperemia and still further injure the tubular structure. Fischer's alkaline therapy—a therapy based on the presence of acids in the tissues of frog's legs which he had rendered edematous by constricting the circulation—has not been widely accepted:

First, because these alkalies are salts and all salts tend to increase rather than decrease the edema; second, because the edema which Fischer induced in frog's legs, with its attendant acidity, is believed to bear no direct relationship to the edema of tubular nephritis. As has been stated, the edema of nephritis is an edema of the loose connective tissues; it is an anasarca, and it never *directly* involves the protoplasmic tissues. Fischer's edema, if I correctly read his reports, involved not the connective but the protoplasmic tissues. Indirectly, however, in the most severe grades of renal edema the circulation of the limb may be so interfered with by the increased tension that a true edema of the protoplasmic tissues may be induced. In this condition salt-free diet gives no relief until the circulation is restored by relieving the tension. This is best accomplished by scarification or with Curschmann's needles. The edema of cardiac decompensation—a not infrequent complication of vascular nephritis—is to be distinguished from the edema of tubular nephritis. The former appears in the dependent parts and is accompanied by cyanosis, dyspnea, cold extremities, ascites, hydropericardium, etc. The edema of tubular nephritis, on the contrary, is a true anasarca; it does not appear in the dependent parts, but in the loose connective tissues, especially in the eyelids, in the fundament, in the scrotum and in the penis, in the dorsum pedis and under the tendo Achilles; breathing is quiet; there is no cyanosis; the hands are warm and pale. Only in the end stages are the serous membranes affected.

An actual case will, perhaps, best illustrate these points: Patient, a man of 55, with tortuous sclerotic vessels and blood-pressure of 208. Heart and aorta enlarged; apex outside the nipple line; second aortic tone loud and sharp; louder also at the apex than the first tone. No visible edema. On admission, however, three weeks ago, there was marked edema and a falling blood-pressure of 160; complexion dusky, and breathing difficult; urine 600 c.c. per day. That is, there was beginning secondary heart failure. To test whether the edema was in any degree due to tubular involvement, 10 grams of sodium chloride were administered in addition to the amount taken in the food. The patient was at that time excreting 6 grams per day. During the next twenty-four hours there was excreted 16 grams, showing unimpaired NaCl excretion; showing also therefore that the edema was due solely to circulatory trouble. The indicated therapy in such condition is, first, to restore the integrity of the heart action and thus reduce the edema. This was accomplished by the administration of digitalis and diuretin and by sharp reduction of fluids. In the course of treatment the water output reached 3,900 c.c. per day and blood-pressure gradually rose to its normal for this condition, which was, as stated, 208. He is now receiving and excreting daily 1,500 c.c. of fluid with body weight constant at its normal figure.

In the edema of tubular nephritis, digitalis, and diuretin are contraindicated. It should also be added, parenthetically, with reference to the sodium chloride test employed in the above case, that in the presence of actual tubular involvement this test is apt to provoke an acute edema. In doubtful cases therefore the iodide test is to be preferred.

3. *Nephritis with Urea Retention.*—Clinically this type of nephritis is rarely seen in pure form. It is a toxemia, due to the presence of nonprotein or "residual" nitrogenous products in the blood which should be excreted in the urine. Normally and in uremic-free forms of nephritis not more than 50 mg. of this kind of nitrogen is found in 100 c.c. of the blood serum. In uremics, on the other hand, the nonprotein content increases to 100, 200, or even 300 mg. The writer has seen no report of the working of Ambard's ratio[1] in pure uremic nephritis, but believes it would show increase. In these estimations then we have objective and positive tests for the presence of the uremic tendency. In the uremic form of nephritis it is very difficult to establish nitrogenous equilibrium in the individual. If one adds more albumin to the food the plus in contrast to the normal individual is not eliminated within the next twenty-four hours but requires several days—provided the kidneys succeed at all in eliminating it. Not infrequently such an increase in albumin is followed by the development of uremic symptoms,

which are: headache, feeling of fatigue, repugnance for meat, nausea, and vomiting. The vomitus frequently smells of ammonia. Further, diarrhea may develop; possibly spasmodic conditions which may go over into apathy and coma. Because of the repugnance for meat and all nitrogen-containing foods, these patients early suffer from deterioration of the muscles. This fact explains the misrelation between the deficient musculature and the well-developed panniculus adiposus usually observed. Along with these symptoms we find albuminuric retinitis. Let it be repeated that true albuminuric retinitis—due to toxemia— is not to be confused with the retinal hemorrhages of vascular nephritis, which are due to high blood-pressure and sclerosis. In the last stages hemorrhagic pericarditis or pleuritis may set in; the stool may show an alkaline reaction; the post-mortem shows intestinal ulcers. Many of the symptoms mentioned are protective measures on the part of the organism. With the retention of waste products, the attempt is made to eliminate by other channels; hence the urinous breath, the vomiting, and the diarrhea. Uremic ulcers are found in the intestines and lungs in no other form.

In the acute forms of uremic nephritis it is better to give no food at all, not even milk or soups, for these patients vomit everything, and the vomiting does harm which is not offset by the small amount of nourishment absorbed. The best plan is to give only water containing grape sugar and fruit juices. This "hunger cure" must not be continued longer than five days; but this period is usually sufficient to relieve the most acute uremia. If large amounts of urine are passed water should be given intravenously or subcutaneously, not with NaCl but with 4 per cent. levulose, ½ to 1 litre at a time. In very severe cases venesection is advisable. Complete withdrawal of albumin from the diet is to be risked only in the most acute cases. In chronic forms the minimum albumin requirement—1 gram daily per kilo of body weight—should be maintained, otherwise degeneration of the heart and other working tissues results from consumption of their own nitrogen. Milk may be administered in small quantities at frequent intervals, also fats and all kinds of carbohydrates and acid drinks.

Sweating baths have been so indiscriminately employed in all forms of nephritis, that it may be well to group here the indications and contraindications for this form of treatment. With sclerotic arteries and high blood-pressure, the dilatation or contraction of all blood-vessels of the body is attended with danger to the brain; hence, in vascular nephritis, full baths, both hot and cold, are to be avoided. The best plan in this condition is to employ only the sponge bath, and for only half of the body at a time; first, the upper half; then the lower half, avoiding extremes of heat and cold. In tubular nephritis, the sweating bath, properly controlled, is useful, for with a single treatment, 800 c.c. of fluid and 4-5 grams of salt may be removed from the body. In uremic nephritis, this form of treatment has not the same value; for, contrary to general opinion, very little urea is eliminated with the perspiration. In acute forms, sweating is distinctly contraindicated, for with the removal of so much water a concentration of waste in the blood occurs, and by this sudden concentration a true uremic attack may be precipitated.

4. *Mixed Types.*—Thus far we have referred only to pure types. As a matter of fact, with the exception of vascular nephritis, pure types are rarely seen. The percentages in the schema are those given by Eppinger.[2] Acute, beginning nephritis, is usually a mixture of the three types, with milk-sugar retention, strong KI and urea retention, some increase in blood pressure and perhaps hematuria, characteristic of acute glomerular irritation; oliguria and edema, due to tubular injury, and uremic troubles due to accumulation of nitrogenous wastes in the blood—not necessarily urea. This mixed, acute nephritis may entirely heal; or it may resolve into a chronic vascular, chronic tubular or chronic uremic type. The acute nephritis caused by exposure usually becomes predominantly tubular or uremic; the infectious forms more often resolve into the chronic vascular type. In treating mixed types, while taking into consideration the precautions imposed by each element, the general principles of treatment should be determined by the dominant type.

*Technique of Functional Testing.* (1) Lactose Test: First, exclude glucosuria by testing with Fehling's, Nylander's or Benedict's reagent. With strict antiseptic precautions, inject intravenously, 2 grams lactose in 20 c.c. of water. The solution employed should previously have been sterilized by heating at 75 to 80 C. for one hour on each of four successive days. At the expiration of four hours, empty patient's bladder and discard urine. Then collect urine every hour or every half hour and test for the presence of sugar. If sugar be found after four hours, there is suspicion of vascular impairment; if found after six hours, the indication is positive. (2) Iodide Test: This test is not to be employed in cases showing signs of hyperthyroidism. At 5 P.M. administer *per os* ½ gram KI. In health this entire amount should be passed within 40 hours; that is by 9 A.M. of the third day. Delay beyond 40 hours is suggestive of tubular impairment; beyond 60 hours, positive. Any iodine test may be employed. The following is suggested: Prepare starch solution by heating, but not boiling, for 2 to 4 minutes, 10 grains ordinary laundry starch in 10 c.c. of water. Add a few drops of this solution to 10 c.c. of urine. Add also a few drops of 10 per cent. sulphuric acid. Then underlay with concentrated nitric acid. A purple or blue ring at the level of contact indicates the presence of iodine. (3) Sodium Chloride Test: If tubular involvement be suspected, this test should be employed only with caution. First, the water and salt intake must be made uniform preceding and during the test and the urinary output of both determined. Administer *per os*, 10 grams NaCl with 1 liter of water in excess of the amount usually taken. Collect all urine passed as long as excess of salt appears. In normal conditions, 1 liter of water and 10 grams of salt in excess of the usual amount should be entirely eliminated in 24 hours. For quantitative estimation of NaCl, the following reagents are required: (a) Standard Silver Nitrate Solution: 29.06 grams are dissolved in distilled water and made up to one liter. Each c.c. is equivalent to 0.01 gram of sodium chloride. (b) Indicator: 100 grams crystalline ferric ammonium sulphate dissolved in 100 c.c. of 25 per cent. nitric acid. (c) Standard ammonium sulphocyanate solution. Dissolve about 13 grams in 800 c.c. of water. Titrate this solution against the standard silver nitrate solution and estimate how much water should be added to the remainder of the sulphocyanate solution to make it exactly equiv-

alent to the standard silver solution. The procedure is as follows:[3] Five c.c. of urine are pipetted into a small porcelain evaporating dish and diluted with about 20 c.c. of distilled water. The chlorides are now precipitated with exactly 10 c.c. of the standard silver nitrate solution and about 2 c.c. of the indicator added. Standard ammonium sulphocyanate solution is then run in from a burette until the first trace of yellow shows throughout the mixture. By subtracting the number of cubic centimeters of sulphocyanate thus employed from ten and multiplying by 0.01, the number of grams of sodium chloride in five c.c. of urine is obtained. From this the total chloride output for the twenty-four hours may be computed. (4) Urea Test: First, with a uniform nitrogenous intake, determine the urea, or better, the total nitrogen output. Administer 10 grams urea *per os*. This amount should normally be excreted in 24 hours. For clinical purposes, the hypobromite method of estimating urea will serve; but for more exact results, the Kjeldahl method of estimating total nitrogen should be employed. For the technique of these procedures, the reader is referred to Wood's "Chemical and Microscopical Diagnosis," third edition, 1911, page 476.

*Conclusion.*—By reference to the accompanying "Schema," it will be observed that as diagnostic signs, albumin and casts lose the preeminence which they have hitherto enjoyed. Both signs may be present in every type of renal disorder; hence, in an effort to distinguish between types, they possess no diagnostic value. In place of these, a series of signs is presented which possess true diagnostic meaning and value. Circulatory troubles are peculiar to, and therefore diagnostic of, vascular nephritis; anasarca and diminished capacity for salt excretion are peculiar to the tubular type; repugnance for meat, albuminuric retinitis and increase of non-protein nitrogen in the blood are peculiar to the uremic type. Aside from these purely clinical signs, we have the functional tests, each of which has its definite and unequivocal diagnostic significance.

The phenolsulphonephthalein test has not been here discussed for the reason that its value seems to pertain to prognosis rather than to diagnosis. It is useful for determining the extent or severity of a renal lesion, but not its type.

As is implied in the title of this paper, only a *method* has been here presented; not a completed nor perfected system for classifying, diagnosing, or treating kidney disorders. Further experimentation and observation will doubtless make many changes in our "Schema;" matters that are now obscure will be cleared up; new tests and new clinical signs will be discovered; some of these will doubtless be thrown out; new interpretations will be placed upon those that remain; a better therapy will be developed. The data here given and the deductions therefrom may all be swept away, and yet, if the method—like the scaffolding of some as yet unseen structure—but serve the scaffolding's purpose—enough. The method is neither easy nor quick. The functional tests, especially, are not well adapted for use in private practice. They must be simplified. Meanwhile, the method is, as has been said, a method in the interest of *earlier detection, more exact diagnosis,* and a *more rational, efficient therapy*. That fact must justify its presentation at such length.

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## BARLOW'S DISEASE IN AN INFANT FED ON PASTEURIZED COW'S MILK.*

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The first account of infantile scurvy appeared about 53 years ago in an article by Moeller, who vaguely described this disease in 1859 under the name of acute rickets. The report aroused very little interest among medical men, and no further progress was made in the study of this pathological entity until 1883, when Barlow gave a comprehensive account of the pathological and clinical characteristics of this disease and directed the attention of observers to the importance of proper dietetic therapy.

Infantile scurvy has been spoken of under the various designations of acute rickets (Moeller), hemorrhagic rachitis (Fuerst), Barlow's disease, Moeller-Barlow disease, hemorrhagic periostitis (Smith), and infantile scurvy. The penchant for attaching the name of the discoverer to all worthy results of individual effort has led us to immortalize the name of Barlow in this connection.

Barlow's disease is a constitutional disease occurring in infants, and results from a more or less prolonged error in diet, and it is my purpose to confine my discussion chiefly to the part played by human breast milk and pasteurized, boiled, or raw cow's milk in the production of this disease.

No doubt we are all agreed that mother's milk is the ideal food for babies, but, unfortunately, it is not always available. The reasons for this are numerous and some of them only too obvious. It is an accepted fact that 10,000 individuals control the entire wealth of our nation and in a large measure shape the destiny of the remaining 90,000,000 or more. It stands to reason that only a small proportion of our population, therefore, is so situated financially as to be removed from the worry and care incidental to the struggle for a livelihood. The vast majority is constantly engaged in a fierce battle for existence, and notwithstanding the announcements in the press that an era of unprecedented prosperity surrounds us on every hand, we, as physicians, daily and hourly come in contact with the most squalid conditions of habitation, reeking of poverty if not of filth, and in those cases where degradation and vice have not triumphed as the result of desperate straits we still find the deep furrows of worry and trouble upon the countenances of those who are endowed with inherent principles of decency and self-respect. It is written in the Scriptures that in the sweat of our brow shall we earn our daily bread, but we might add incidentally that they do not specify that we should sweat blood, as so many do. The 10,000 just mentioned rarely ever sweat, unless it be when threatened by legal processes for some rascality committed at the ex-

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pense of the more or less helpless 90,000,000. On the other hand, the Good Book tells us also that the poor will be with us always, and therefore we need to be prepared in a measure to deal with those phases of human life that constantly confront us.

Some of you may ask what has that to do with the subject in hand? I'll tell you. Nature has ordained that mammal females should suckle their young and has made ample provision therefor. The human species is no exception. From the earliest records of human existence we have evidence of the mother nursing her child until it had attained an age when it could forage on its own behalf. The women of uncivilized nations of to-day without exception feed their babies from their own breasts. A large proportion—a proportion, however, which is constantly lessening—of the women of civilized life suckle their offspring. There are others, however, who do not suckle their young, and that is due to several causes, by no means the least of which is the havoc brought about in the human economy by the struggle for an honorable existence. Unfavorable and unsanitary surroundings, poverty in any form, worry, strife, unhappiness, no matter from what cause, all exert an inhibitory effect on the galactogenous action of the female breast, with the result that some mothers lack the galactiferous stimulus entirely, never having any milk in their breasts, others perhaps manifesting only a transitory activity in the milk glands, while others again, although presenting actively functionating glands, may formulate a product that is far from wholesome and which is detrimental to the infant. Under such conditions —and the number is greater than you think—other means of feeding must be devised if the infant is to survive.

Now, as regards infantile scurvy, I admit that I have never observed this particular disease in breast-fed infants, nevertheless it is an established fact that this disease may occur in children fed exclusively on breast milk. We note from the literature that in 379 American cases of infantile scurvy 12 cases occurred in breast-fed babies. The literature records cases by Ashby, Ausset, Cima, Crandall, Freund, Fruitnight, Hochsinger, Koeppen, Love, Mather, Northrup, Petrone, Scott, Soltmann, Southgate, and Weiss. The majority of these cases are said to be open to criticism. The case reported by G. Freund in *Deutsches Archiv für klin. Medizin*, v. 86, p. 129, and the case described by Hochsinger before the Vienna Medical Society and published in *Semaine médicale*, Paris, 1909, p. 312, will, however, bear the most critical analysis, and there is not the slightest doubt that these cases were true infantile scurvy occurring in babies that had always been fed on mother's milk only. We are forced to concede the possibility of Barlow's disease occurring in breast-fed infants just as rickets has been known to develop in these children, but after all it is of rare occurrence. When scurvy appears in breast-fed infants it is no doubt due to the absence of the so-called antiscorbutic principle in the mother's milk.

Clean and pure raw cow's milk, modified to the requirements of the infant, is the best artificial food product we have at our command. I know of no case where scurvy developed while properly modified raw cow's milk was fed to babies. Unfortunately it is not always to be obtained. One can probably procure raw cow's milk wherever he may be within the confines of our nation, but no difficulty has been encountered in demonstrating the absence of the two first mentioned properties. Here again the mode of living, civilization so to speak, is largely accountable for the contamination we so justly dread, and it is due to the possibility of transmitting diseases to children by the pathogenic microorganisms contained in cow's milk that scientists were induced to recommend the heating of milk before feeding it to infants. It has developed, however, that scurvy is such a common occurrence in children fed on boiled or sterilized cow's milk that boiled milk is now almost universally condemned as a food for babies. . Laboratory experiments and practical observations have fully demonstrated that if we subject cow's milk to an intense heat we deprive it of some essential properties of wholesomeness, and it is assumed that this process forms a product which exerts a toxic effect on the bony and vascular system, or certain combinations essential for the normal process of metabolism are destroyed, with the result that specific nutritional disturbances arise in the bones and vessels of the infant. Whenever boiled or sterilized milk is used for any length of time scurvy is almost certain to manifest itself sooner or later.

Pasteurization, *i. e.* heating cow's milk to a temperature of 155° F. (68° C.) for 20 to 30 minutes, has been found more satisfactory in actual practice. Pasteurization apparently does not produce any chemical or physical changes in the milk, and yet it effectively destroys all pathogenic microbes contained therein. As it is, unfortunately, a rather difficult task to obtain clean germ-free milk at times, especially during the summer months, and more so in the temperate and tropical regions, pasteurization is recommended. It has been observed, however, that it is not advisable to continue with pasteurized milk indefinitely, and Kerley earnestly advocates that pasteurized milk be used only during the four hottest summer months and that raw milk be given during the remaining eight months of the year, so that the child may escape any harmful results that frequently follow the long continued administration of heated cow's milk.

Thus far it has not been my good fortune to observe a case of scurvy in an infant nursed by the mother's breast or fed on properly modified raw cow's milk, and I observed this summer the first case of infantile scurvy, due to pasteurized milk, that occurred in my practice. The disease has been so rarely reported in infants fed on pasteurized milk that I failed to consider carefully such a possibility when I was called to see the child; and the absence of some of the cardinal signs of scurvy when I examined my patient in the beginning of the trouble led me to pursue my investigations in other directions. In fact my perceptions were lulled by the belief that scurvy would not be likely to develop in a child fed on pasteurized milk. In a review of the literature on the subject some time later I found it almost universally accepted that scurvy practically never occurs in children fed on cow's milk that has been pasteurized.

Holt states that in his entire career he has observed only three cases of Barlow's disease which were due to pasteurized milk, while Neumann, in his wide experience, observed only one case in which pasteurized milk caused scurvy, and in this case the child had been on pasteurized milk for some time and had recently been given milk which had been heated for 10 minutes at a temperature of 98° C. It is not impossible that other cases have been observed, but I failed to find any reports thereof

in the literature. The purpose of this paper is to report the case which I referred to, but before doing so I would solicit your indulgent attention in a brief discussion of recent animal experiments in which raw, boiled or sterilized, and pasteurized milk was employed. There has been very little experimental work done in this line and the data is exceedingly interesting and instructive.

Peiper and Eichloff fed one series of dogs for 5 and 6 months with sterilized (boiled) milk and another series with raw cow's milk. In the dogs fed with the sterilized milk pathological changes were found in the bones and bone-marrow and in the periosteum. Those fed on raw cow's milk, on the other hand, remained healthy. Esser fed young goats with sterilized (boiled) milk and later demonstrated in these animals similar bone changes as occur in infants with scurvy.

Froelich, of Christiania, carried out a series of experiments with guinea-pigs which are quite interesting. He found that when guinea-pigs were fed with raw cow's milk only they soon died, and autopsy revealed a markedly brittle condition of the bones, but none of the other changes common to scurvy. He then fed barley and sterilized (boiled) milk to one series and barley and raw milk to another. The guinea-pigs which were fed on barley and raw milk grew fat and were killed after 118 to 138 days. Autopsy showed no pathological changes, and microscopic examination of 67 ribs and all femora and tibiæ failed to disclose any sign of scurvy, nor did the bones appear brittle. In the series in which the milk was heated for 10 minutes at 100° C. and 60 minutes at 112° C. respectively the animals lived from 34 to 97 days, but they did not thrive. At autopsy all animals showed loosened teeth, typical scorbutic hemorrhages, marked brittleness of the bones and fractures were noted in the majority of the animals. Microscopic examination revealed typical scorbutic bone-marrow changes.

Holst of Christiania has shown that when guinea-pigs are fed on barley alone scurvy invariably occurs, associated with a brittle condition of the bones. Froelich showed that raw milk alone caused brittleness of bones in every case, but no scorbutic symptoms. When both barley and raw milk are fed, however, the animals remain perfectly well and autopsy fails to reveal any pathological changes, while boiled milk and barley produced typical scurvy associated with brittle bone conditions. Heating cow's milk for 10 minutes at 100° C. robs it of its antiscorbutic property against guinea-pig scurvy. Again, when the milk was pasteurized (heated for 30 minutes at 70° C.) the antiscorbutic properties proved effective in all those animals which had ingested large quantities of milk, while in those which had consumed small quantities of milk various pathological changes and scurvy could be demonstrated.

Although these results of experiments on herbivora cannot be indiscriminately applied to the human species they nevertheless point the way to further observations along similar lines. Admitting for the sake of argument that this so-called "antiscorbutic" substance is diminished in pasteurized milk, and assuming that the animal conditions are analogous to those in man, we would expect to observe like results in babies fed on pasteurized milk, and this is probably what happened in my case. Just why scurvy does not occur in more cases fed on pasteurized cow's milk still remains to be solved.

Case.—Walter T., white, born September 19, 1911; fourth child of intelligent parents in moderate circumstances. I saw this child for the first time on October 12, 1911; he was then 3 weeks old. The mother stated that labor had been very tedious and difficult, that she had nursed the baby for 10 days and then had to resort to cow's milk and a patent food, as the milk in her breasts had quickly disappeared. The boy weighed 10 pounds at birth; when 3 weeks old he weighed only 9 pounds. Physical examination revealed nothing unusual or abnormal with the exception of an inguinal hernia which was reduced. It did not recur. As the stools were watery and green two drams of oleum ricini was ordered and the child placed on 6 per cent. lactose solution for 24 hours, followed by a milk and cream formula of 1 per cent. fat, 0.5 per cent. protein, 7 per cent. sugar; seven feedings, 4 ounces every 3 hours. This child did well and the formula was gradually increased to 2 per cent. fat, 1 per cent. protein, 6.5 per cent. sugar; seven feedings, 5 ounces every 3 hours. Weight, November 24, 10 pounds. The formula was increased at this time and directions left for adding more fat if progress justified it. I did not see the child again until February 13, 1912. Improvement had not been so rapid as was desirable, and, since the milk employed was of a low fat percentage, I advised a change to pasteurized milk containing 4.5 per cent. of fat. The baby was then 5 months old. Top milk mixtures were prepared and the child improved rapidly in nutrition and gained in weight. When the boy was 6 months old barley gruel was substituted for the boiled water in the feeding formula (2.3 per cent. fat, 2 per cent. protein, 6 per cent. sugar). On April 30 and again on May 16 acute double otitis media necessitated paracentesis of both tympana, which was followed by discharge of serosanguinolent fluid and immediate cessation of symptoms. The child ceased to cry, dropped asleep within an hour—after having cried constantly for 12 hours—and the temperature fell from 104° F. to 100° F. within the next three hours. Hexamethylentetramine, 3 grains every four hours, was ordered. Soon afterwards the food was increased to 3 per cent. fat, 2 per cent. protein, 6 per cent. sugar. This was followed by progressive improvement and increase in weight until July 17. Then the child appeared to be in great pain, cried shrilly, appeared tender to the touch about the hips and insisted on assuming a relaxed attitude with the thighs as mentioned. There was no fever, no disdromal symptoms, and the attack occurred during the middle of the day. Manipulation of the lower extremities caused much pain. Physical examination failed to disclose anything further than the tenderness and relaxed, flaccid condition of the things as mentioned. There was no fever, no discoloration of the gums; reflexes were present and active; there was no local redness, edema, swelling, or paralysis. The peculiar relaxed pseudoparalytic position of the lower extremities was suggestive of poliomyelitis, which I excluded, however, by ascertaining the absence of impairment or change in the reflexes and the absence of the reaction of degeneration when tested with the faradic and galvanic currents. Rheumatism was excluded by absence of fever and local signs, although the mother stated that she had sustained repeated attacks during her period of gestation with the child in question. Syphilis was also excluded on account of negative family history, absence of skin lesions, and lack of any other manifestations of this disease. The child got better in a day or two, ceased to be fretful, was

content to lie on his back or sit in the cart, but made no effort to use the lower limbs. When I visited the little fellow again during the course of a fortnight the mother stated that just prior to the eruption of the incisors the gums had appeared bruised, probably caused by falling against a roll of the go-cart. Examination at this time showed the child to be well and contented and the gums were not swollen and were normal in color. In August the food was changed to full milk two parts and barley gruel one part with sufficient sugar added to make 5.5 per cent. Orange juice was ordered on general principles, but the mother failed to give it because the child did not like it. On September 17 the pain and tenderness about the hips became acute again. Suspecting possible hip-joint involvement, I made two radiographs of the pelvis, but these showed no signs of osteitis of spine or joints. The first upper molars were about to erupt and at that point the gums appeared darker and more swollen than is usually the case. Although still unsuspecting the true nature of the illness I again ordered orange juice for its laxative effect and beef broth and meat juice in addition to the milk and barley mixture, and the child improved again. The tenderness and pain gradually subsided again. On September 30 I was called to see another child in this same family and took advantage of the opportunity of inspecting the baby again. He appeared somewhat improved, only the molars were causing some trouble. The gums over the molars were very red and congested, but the remaining portion of the gums was normal in appearance. I suggested a consultation in the hope of arriving at a diagnosis, and found that this would be acceptable. On October 2 Dr. H. H. Donnally saw the child with me. Examination showed the gums about the upper incisors swollen and inflamed, while the gums over the erupting molars were bluish-black in color and much swollen. Apparently no physical defect anywhere. Exquisite tenderness of legs and thighs, but no swelling or enlargements. The child cried on manipulation of limbs, but less than at previous times, a fact noted and commented upon by the mother at the time. In view of the swollen and discolored gums, the tenderness of the thighs and hips and absence of any definite lesions, Dr. Donnally established the diagnosis of infantile scurvy, and in this I heartily concurred after noting the condition of the gums. I procured a specimen of urine which showed a specific gravity of 1,015, was pale amber in color, and contained no albumin or sugar. Centrifugation gave a red deposit which on microscopic examination was found to be composed of erythrocytes, which findings further confirmed the diagnosis. I incised the gums over the erupting molars on the following day and the child appeared considerably relieved thereby.

The pasteurized milk was stopped and raw cow's milk ordered from the same dairy. Oatmeal gruel was substituted for the barley on account of the tendency to constipation. The importance of the administration of orange juice was impressed upon the mother and the drinking of from one to two ounces daily was ordered. Meat juice and scraped meat was also added to the diet. October 6, child is improving; gums normal. October 9, general condition progressing well and molars have erupted. Child is beginning to play with his feet and kicks his legs energetically; he has no pain or tenderness on palpation or excessive manipulation. Makes no attempt to stand, crawl, or walk. October 28, child is much better and is beginning to have a rosy color of the face for the first time. He appears lively and happy and makes frequent efforts to stand. He sleeps well at night and acts in every way like a perfectly healthy child.

In summing up the symptoms we find that there was very slight anemia manifested by a moderate pallor of the skin of the face and conjunctivæ. Pain and a form of pseudoparalysis were present, but no enlargement of the bones. There was slight hemorrhagic swelling and softening of the gums. No hemorrhagic swelling of the eyelids and no exophthalmus. No extravasation of blood into the skin or mucous membranes. There was no hematuria, but erythrocytes were present in the urine. Fever was absent throughout. It is evident that a certain proportion of antiscorbutic properties still persisted and prevented the development of a severe typical case of scurvy.

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## SOME OF THE COMMON FORMS OF INSANITY.*

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During the past five years 1,290 patients have been admitted to the Binghamton State Hospital, exclusive of transfers. Classifying these according to the official classification of the New York State Hospital Commission, 230 were diagnosed as senile psychoses, 163 were diagnosed as manic depressive, 136 were diagnosed as dementia præcox, 87 were diagnosed as alcoholic psychoses, 84 were diagnosed as general paretics, and 69 were diagnosed as involution psychoses; so that a total of 769 patients, or practically 60 per cent. of these admissions, fall under one of six psychoses. I will, therefore, give a brief definition of each of these six psychoses together with a word as to their etiology, symptomatology, and prognosis.

*Senile psychoses* are those occurring usually after 60 years of age, the characteristic symptoms being progressive mental deterioration. As to the etiology, the usual signs of senility are present; defective heredity is found in a large proportion of cases, and with these predisposing factors mental and physical overexertion with excesses of any kind are active causes of the psychosis. The symptoms commonly found are defective memory, especially for recent events. These people may be fairly clear as to events which occurred years ago, but new impressions are not retained. Their minds are no longer receptive to facts which take place from hour to hour or day to day. Their attention is also defective and they fail to understand the connection of things. They become childish, petulant, irritable, restless and discontented. They not infrequently mistake the identity of persons, mistaking strangers for persons whom they formerly knew well. They develop delusions, usually of a persecutory nature, are apt to be restless at night, wander away without proper clothing, play with fire, place lighted lamps on lighted stoves and in other dangerous places and thus become a menace to those with whom they live. The prognosis is bad, since the disease is due to advancing years.

*Manic depressive psychoses* comprise those forms of mental disorders which recur in definite forms

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at intervals during the individual's life, and in which there is little tendency to deterioration. The first attack usually occurs before the age of 25. In this group are many of the cases which were formerly diagnosed as recurrent mania, recurrent melancholia, circular insanity, and alternating insanity. As to the etiology, defective heredity is found in a vast majority of cases. With this as a predisposing factor, gestation, alcoholic excesses, mental shocks, and acute diseases act as exciting causes. Three forms of this psychosis are generally recognized:

First, the manic form characterized by psychomotor excitement, flight of ideas, distractibility, pressure of activity, happy but unstable emotional condition, and unstable delusions. Second, the depressive form characterized by psychomotor retardation, dearth of ideas, absence of spontaneous activity, emotional depression, and stable depressive delusions and hallucinations. One readily perceives that the symptoms of the depressive form are exactly the opposite of those found in the maniacal form. The third is the mixed form which consists of a mixture of the symptoms found in the two preceding forms.

By "flight of ideas" is meant a rapid change of ideas expressed by the patient. He starts to express an idea but before he has completed the expression he begins a new one and before this is finished, still another, etc., etc. The goal idea is wanting; he is continually going off on a tangent—he never gets anywhere. For example: A patient had written some letters and when asked why he had written them, said: "To pass away the time; I have been doing a lot of things that are decidedly foolish, writing these letters; you see I have known Dr. H. here. I thought the work was divided up, surgical, medical, and, of course, the brain is a study by itself. Well, I don't know just how to say; well, I tried to get a college education without going to college; now speaking medically, what I mean that I—well a—well—a—I want to purchase some stuff and I don't know how much has been used and how much has not been used."

By "distractibility" is meant the more or less constant change of thoughts, actions, etc., due to passing external influences. For example, when the patient is talking the jingle of keys is heard and immediately he will begin to talk of locks, doors, jails, or something having reference to keys. If a bell is rung he will talk of church, school, dinner, or something with which a bell is intimately connected, etc. By "pressure of activity" is meant that the patient is more or less constantly "busy" doing this "this, that or the other thing" and accomplishing little or nothing. By "dearth of ideas" is meant an actual lack of ideas; they have few ideas, and those they have form slowly. Not that they lack the necessary mental ability, but that they have difficulty in elaborating external impressions. By "psychomotor retardation" is meant difficulty in putting into action various groups of muscles. For example, when the patient is told to "stand up" he has great difficulty in making up his mind to bring the necessary muscles into play and he rises slowly, inch by inch, not from weakness but because of the slowness of his mental processes and the great effort it requires to get the muscles in action.

The prognosis is good for an individual attack, but recurrences are frequent. The duration between the attacks is extremely variable; from a few hours to months and even years. Only a very small percentage (4 or 5 per cent.) of the cases do not recover from an individual attack, unless the case is one in which there have been many previous attacks. Of course, repeated and severe attacks must sooner or later leave the patient with some degree of dementia.

*Dementia præcox* is a psychosis that appears early in life, usually before the age of 25, and is characterized by a progressively chronic course with certain fundamental symptoms, of which progressive mental deterioration is the most prominent. From 14 to 20 per cent. of all admissions to all state hospitals have this psychosis. Etiology: Defective heredity is extremely common, being found in about 70 per cent. of the cases. Many individuals who develop this psychosis have shown mental peculiarities from youth; such as precociousness, seclusiveness, impulsive actions, and great susceptibility to alcohol. Many also present asymmetries, malformations, strabismus, etc. Acute diseases sometimes act as exciting causes. Many have been reared under improper mental hygiene and it is generally believed that much may be done with individuals who have a tendency toward this psychosis by improving the mental and moral as well as the physical conditions under which they develop. Symptoms: The individuals are usually self-absorbed, shy, silly, sullen, obstinate, careless; they are inactive, accomplish little or nothing, smile and laugh without apparent cause. The emotional attitude is changeable. They are usually dull and indifferent. They develop many delusions and hallucinations, especially of a sexual or absurd nature. In some cases the delusions are of a persecutory character and have a tendency toward systematization. Other common symptoms are stupor, catalepsy, impulsive outbursts of violence and even suicide; negativism, in which the patient does exactly the opposite to what one wishes him to do and what a normal person would do; mannerisms (certain peculiar actions which are frequently repeated, sometimes for hours at a time) and the frequent repetition of words, phrases or sentences. Memory and judgment become progressively impaired. The prognosis is bad. The vast majority, over 85 per cent., go on to deterioration.

*Alcoholic psychoses.* Those most commonly seen are the acute alcoholic hallucinatory type and delirium tremens. The acute hallucinatory type is characterized by the sudden appearance of coherent delusions of persecution and jealousy based upon hallucinations of hearing with retention of clear consciousness. The delirium tremens type is characterized by the sudden development of fantastic hallucinations of sight and hearing; indefinite and changeable delusions, mostly of fear, often of a religious nature, with clouding of consciousness. Etiology, a defective state of nutrition which usually exists for days; gastritis, with the imbibing of alcohol; shocks, injuries, and acute diseases, especially pneumonia. Symptoms: They are much the same in the two diseases. The onset is rapid, with insomnia, uneasiness, and hallucinations of all senses, especially of sight and of hearing. In the hallucinatory type, the hallucinations are not fantastic, but form the basis for coherent delusions, while consciousness is clear. In the delirium tremens type there is marked psychomotor excitement with marked clouding of consciousness. The prognosis is good for the individual attack.

*General paralysis* is characterized by progressive mental deterioration with symptoms of excitation

of the central nervous system, leading to absolute dementia and paralysis; and, pathologically, by a definite series of organic changes in the brain. Etiology: Probably due to a syphilitic infection, either inherited or, as happens in practically all cases, acquired. It is more commonly found in men than in women and usually begins in middle life. With the existence of the above predisposing cause, mental stresses, alcoholic excesses, and sexual excesses are the principal exciting causes. Symptoms: The disease occasionally begins with a rapid onset; a marked maniacal attack, convulsions, or apoplectiform seizures. Usually, however, the onset is slow and insidious, with a feeling of incapacity, neurasthenic symptoms (inability to perform mental labor, lack of power of sustained application), defects of memory in little things and failure to recollect recent events; there comes a change in disposition, the person who was formerly even-tempered but now becomes easily irritated; he becomes lacking in moral sense and careless in his personal appearance; he who was formerly particular about his necktie and the way his hair was combed and moustache curled now becomes more and more indifferent to these. His pupils are sluggish in the reaction to light or fail to react at all; the extended fingers show a fine tremor, as do the muscles of the face, especially about the mouth, and there is a tendency to slurring in speech, particularly for labials and dentals. Especial difficulty is experienced in saying certain test phrases: "Truly rural" (tooly looly). "Methodist Episcopal" (metodist epistobal), "electricity" (elescity), etc. The face gradually loses its expression, the tremors become more marked, the knee jerks are irregular, sometimes exaggerated, sometimes diminished or lost entirely; pupils become unequal and lose the reflex action to light, and the intellect shows marked weakening, which becomes very apparent in the lack of judgment the person displays when compared with his judgment when in his normal condition. This lack of judgment is seen not only in his moral conduct but also in business matters, in his entertaining poor business propositions, making rash investments, etc. Delusions of grandeur develop and seizures are common until finally the patient becomes soiled and wet, his muscles become so weak that he can no longer walk about with safety, he becomes bedridden, and trophic sores develop. As the muscular system becomes weakened, so does the osseous system, the bones become more brittle and fractures from insignificant causes are common. The prognosis is bad, no true case of general paralysis have ever been known to recover, although intermissions are sometimes seen. The ultimate outcome is death and the average duration is about three and one-half years after the beginning of the disorder.

*Involution melancholia.* A psychosis appearing during the involution period, characterized by depression, with fear; delusions of self-accusation and persecution, with moderate clouding of consciousness and disturbance of the train of thought. Etiology: It usually occurs between the ages of 40 and 60, is more common in women, and is preceded by worry and anxiety, lasting for prolonged periods, for months or a year or more. Heredity, mental shocks, acute and chronic illnesses, etc., are among the causes. Symptoms: The onset is gradual, extending over months. The person becomes sad, dejected, apprehensive. She searches her conscience for some explanation of her worry and fear, recalls some little sin committed in her youth, remembers stealing candy from a store or a penny from her mother's purse, etc. She develops delusions of self-accusation and unworthiness, and the delusion that she has committed the "unpardonable sin." She becomes restless and agitated, makes frequent threats, and attempts to commit suicide. Her train of thought is usually coherent and relevant. She is well oriented and has a good memory. The prognosis is fair. About half of the cases recover and a fair proportion of the other half show greater or less improvement.

The descriptions, etiology, and symptoms given above are about as brief as they could be and at the same time are sufficient to give a little insight into the psychoses mentioned. But I am aware that the physician in general practice has little time for "specializing," particularly when it comes to insanity, for his reading must of necessity be largely "general." Therefore I have given only the salient facts in the hope that, when so little is said, most of it will be interesting and easily digested.

## A NEW TREATMENT FOR ACUTE GONORRHEA.

By O. L. MULOT, M.D.,

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At the present day, when among physicians, especially in the larger cities, there is an almost universal tendency to specialize, it seems indeed a bold thing for a general practitioner to dare to treat a condition or a disease that belongs to a special field; and it is still more bold to imagine that he has discovered something new in such a field. Yet that is what I, who have steadfastly refused to allow myself to be drawn from the broad and interesting field of general medicine, am about to do by reporting the results which I have obtained in the treatment of acute gnoorrhea, and for which I sincerely believe I can claim priority.

The progress that has been made in medicine and surgery during the last 25 years is wonderful; and while this progress has been made in many fields and is a just subject for our modest pride, we certainly cannot claim that any really great strides have been made in the treatment of acute gonorrhea. The treatment of this disease by vaccines or bacterines is reserved by the most experienced men for the chronic cases. There is another feature to this form of treatment that restricts its use, namely, the point of cost. The consensus of opinion seems to be in favor of the autogenous vaccines, and these are sufficiently costly to make the patient pause and try other means of cure before he agrees to this more costly treatment. In many cases this proves short-sighted economy; nevertheless, it is a condition which frequently confronts the physician. Otherwise than by use of vaccines in chronic gonorrhea, the treatment of this disease has undergone little change.

Not alone has the treatment of gonorrhea been unsatisfactory to the patient from the standpoint of time necessary for a cure, but the physician also has realized that this old treatment is far from entirely harmless, for the effect of the balsams upon the kidneys is the very reverse of good. We know that they produce an active congestion of these organs, and while we have been taught to view this as ephemeral, it must be a question whether, when this treatment is continued over a long period, this

is still true and that no permanent damage has been done to these vital organs. Furthermore, we must consider this effect of the balsams when administered to a patient whose kidneys already are the seat of some lesion. Under such conditions the result certainly would be bad, since the balsams surely aggravate the existing process, and such an aggravation could not logically be of an only ephemeral character. But even if there be no previously existing nephritic lesion is it reasonable to conclude that an active congestion of the kidneys, resulting from the therapeutic use of balsams in gonorrhea and which apparently disappears after the discontinuance of the drug, that this does not leave the kidneys in a state of weaker resistance for the future? I cannot pretend to authoritatively answer these questions, but to me they seem worth serious pondering; surely all will agree that personally each of us would prefer to go through life without having our kidneys subjected to a congestive condition induced by balsams.

Locally, too, there has been nothing distinctly new. It is true that new silver compounds have been devised, but still these have not yielded strikingly superior results.

The foregoing, then, may fairly be considered a résumé of the treatment of gonorrhea as generally practised to-day, and it is the one which until very recently I too, have followed.

During the past summer a patient suffering from gonorrhea presented himself to me for treatment. A mixture of balsams was ordered for him, and it did him the usual amount of good; at his next visit to me an injection of the sulphocarbolate of zinc was added to his treatment. On his third visit, which was about the tenth day of the disease, the idea of treating this disease locally with iodine suggested itself. I recalled the tolerance of the oral and the vaginal mucosa to tincture of iodine and the frequent good results which are obtained with it in gynecology. There was something fascinating in the idea, and I concluded then and there to find out how the urethral mucosa would act toward iodine, and I tried a dilution of Lugol's' solution. This first experiment certainly was painful to the patient, but the next morning there was a decided improvement in the discharge, enough so to warrant further search for some means by which this drug could be used in this condition. The next day I tried iodine in a blend of oils, and this was injected into the urethra with very little smarting and held there fully five minutes. The patient remarked that the smarting perceptibly lessened even during the time that the oil solution was in the urethra. This solution was given to him with instructions to use it three times a day. The next day he reported that the first injection had been without discomfort, but when he repeated it, it smarted violently. Nor is this strange when we recall the effect of iodine when applied at too short intervals; but he reported further that the discharge had almost disappeared. He was now ordered to make the iodine injection only once a day. Two days later he reported that the discharge had entirely disappeared and he stopped the injections, but in a few days the discharge reappeared. He was now directed to use the iodine once a day and the sulphocarbolate of zinc injection twice a day, and under this plan of treatment, within a week his discharge disappeared permanently.

My next case of gonorrhea came to me while I was still treating the foregoing. It was in a man without any previous venereal history. He received no internal medication of any kind, but was at once put on the oleaginous iodine injection. At first he did not prove apt at the art of urethral injection, and therefore there was not the prompt response to treatment that I had expected; but two days after he had mastered the art he very joyously informed me over the telephone that there was no longer anything the matter with him. From my experience with the other case I told him not to crow too soon and that I would see him at his office in a day or two. When I did see him he told me that the discharge had reappeared. I then ordered him to follow the same treatment that I had instituted in the latter part of the treatment of the previous case, and within a week's time had the satisfaction that he, too, reported himself definitely cured.

In the above two cases the iodine was used in 5 per cent. strength; one of the patients complained that it smarted rather severely. In the subsequent cases the iodine was combined with another oil-soluble antiseptic, which enabled me to use a weaker strength of iodine with practically the same effect, but with less discomfort to the patient. The result of this treatment in the other six cases was just a little better, owing to the knowledge that something more than just the iodine was necessary, such as the sulphocarbolate of zinc, to bring about a definite cure. I do not intend to claim that maybe something else than the sulphocarbolate of zinc might not act just as well, but that just happens to be the thing that I had used very much in the past in treating gonorrhea before I devised this iodine treatment. Nor is the strength of the sulphocarbolate of zinc solution a matter of indifference; it should not be stronger than to have a just fairly perceptible sting; if stronger than this it can do more harm than good, and I think this is true of the strength of the solution of another substance which we may fancy to substitute for the sulphocarbolate of zinc. In every one of the eight cases to which this treatment was applied the diagnosis was verified by the microscope.

I believe that this treatment is applicable also to streptococcus and staphylococcus infections of the urethra.

The best results of this treatment can be obtained if the doctor will himself make the iodine injections, leaving the other, such as the carbolate of zinc or some other substance for the patient to make for himself, because relatively few patients succeed well with these, particularly at first, and the sooner this treatment is instituted the better the result will be. I tried a solution of iodine in glycerin, but this even in the normal uninflamed urethra, smarted, and this smarting increased the longer the solution was left in place; the smarting was still evident during micturition hours later, and it was evidently very unsuitable.

Of course we cannot and must not expect the same results from this in chronic cases; usually during the third week the posterior urethra becomes involved. Then the disease is in a territory that is particularly favorable to its spread and to spread into regions in which it becomes strongly buttressed against attack by ordinary means of treatment. The seminal ducts, the prostate, seminal vesicles, etc., all these about the end of the third week become more or less involved and no injection into the urethra can reach them; but from these remarks it must not be concluded that this treatment would prove entirely valueless in chronic cases. In such cases

after an intelligent massage of the parts and these washed out by micturition, then an injection of iodine may reasonably be expected to do *some* good, but it would be indeed optimistic ignorance to expect such prompt results as I have reported for this treatment in acute cases. It is just in the chronic cases in which the microbe has become established in inaccessible places that the vaccines afford us a means of treatment and have yielded the most brilliant cures.

We must not allow ourselves to be misled into the belief that the treatment of chronic gonorrhea is the more important; while proportionately we see more chronic cases than we do acute ones, every chronic case of this disease had its acute period. Many chronic cases have been treated by reputable physicians; comparatively few cases become chronic from neglect or lack of treatment. Every physician has acute cases of this disease drag along three and four months in spite of his best efforts, simply because there has been no really effective treatment for the acute stage. With an effective treatment for the acute stages, there certainly should follow a diminution of chronic cases.

In submitting this report of my experience with iodine in the treatment of gonorrhea I fully realize that it covers only a very small number of cases, but the uniformity of the results and the fact that all the cases had the common factor of acuteness certainly offers some definite data for our consideration. If by the use of this drug we can at once attack the disease locally, save the kidneys from an acute congestion, ephemeral or not, as that may be, save the patient from the digestive disturbances which these balsamic mixtures so often cause, then it is important. Furthermore, if by this treatment we can obtain a cure of an acute gonorrhea in a week or ten days, thus avoiding the complications so common to the latter stages—gonorrheal arthritis, then the sequelae—prostatic disease in later life, then this treatment is indeed important and my early report justified.

424 Halsey Street.

## A CASE OF ACUTE SEPTICOPYEMIA.

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The following case is reported from Dr. George M. Swift's service at St. Mary's Free Hospital for Children.

F. W., male, aged two years and ten months, was admitted to the hospital October 25, 1912. Family history negative except for the death of a ten-months-old baby brother three weeks ago with "convulsions." Cause of convulsions not known. The patient's general health has always been good. He has never had any of the acute diseases of childhood or other prolonged illness. For the past four weeks has had an infected finger on the right hand. The onset of the present illness was five days before admission. The first symptoms noted were fever, loss of appetite, and fretfulness. During the first night after onset the patient was extremely restless and slept very little. The following morning he had a convulsion. This was soon followed by a chill and a severe pain in the abdomen located in left upper quadrant. For the next four days before admission his condition gradually became worse. He had a slight cough, continued high fever, at times delirium and a persistent pain in the left upper abdomen.

Physical examination: The patient is well nourished and developed. Lies quietly in bed in a semi-stupor when undisturbed but is quite irritable when aroused. Face pale and drawn. General appearance not unlike the typhoid state. Tongue has heavy gray coating, mouth and lips dry, teeth covered with sordes. Temperature 102.8°, pulse 128, respirations 48. On the face and forehead are large irregular areas of erythema, the edges of which are in some places palpable. Like patches are distributed irregularly over the body and extremities. Ears, throat, and eyegrounds negative. No rigidity of neck. The lungs are clear throughout except a few fine crackling râles low in the left axilla just to the left of the heart apex. Point of maximum impulse of the heart is in left fifth interspace 5.5 cm. to left of midsternal line. Cardiac dullness extends from 6.5 cm. to left of midsternal line in fifth interspace to 2 cm. to right in fourth interspace. A short, soft systolic murmur is heard at the apex, not heard at base of heart or in left axilla. Heart regular. Pulse rapid but good volume and tension. The abdomen is distended and tympanitic. Liver palpable 1 cm. below costal margin, and not tender. Very marked tenderness and some muscular rigidity along left costal margin. Mass felt in left hypochondrium extending 4 cm. below the costal margin. Palpation of this mass causes acute pain. Dullness over mass continuous with splenic dullness. No notch felt. No movable dullness in abdomen. Tip of second finger of right hand infected. Infection extends beneath the nail, a portion of which is loose. A drop of pus expressed from beneath nail. Deep reflexes normal.

On October 26, the day after admission, there was slight rigidity of the neck muscles. Kernig's sign negative. A lumbar puncture was done and 25 c.c. of clear liquid were withdrawn under normal pressure. Examination and cultures from this liquid were negative. General condition unchanged. October 27. The erythema is still present but has varied much in past two days, sometimes being absent entirely. Today there appeared many small petechiæ on the flexor surfaces of the arms near the elbows, a few on the chest, neck, and legs, and many in the inguinal regions. Slight edema of feet and ankles. Dullness at apex of left lung posteriorly with voice and breath sounds bronchial. Heart regular. No change in heart sounds except that these are somewhat weaker. Tenderness in splenic region persists. Von Pirquet test negative. Temperature ranges between 103° and 105°. Patient has taken very little food since admission. Death occurred early in the morning of October 28 the fourth day after admission and the ninth day of the illness.

Laboratory findings: Urine negative. Leucocyte count on admission was 24,000 with 75 per cent. polymorphonuclears. These rose the day before death to 55,000 with 75 per cent. polymorphonuclears. Examination and cultures from spinal liquid negative. Blood culture grew the *Staphylococcus aureus* and a culture from the infected finger grew the same organism in pure culture.

In view of the above findings the following clinical diagnosis was made: Acute endocarditis with emboli to spleen and left lung forming infarcts. Source of infection probably infected finger.

Positive autopsy findings reported by Dr. W. C.

Clarke. Body of male child aged two years and ten months. Well nourished. Dressing on second finger of right hand. Thorax and abdomen opened. Lungs red and congested. At apex of left lung is a dark and solid area which on section shows an infarct about 2 cm. in length surrounded by marked consolidation. Heart muscle pale. Portions of mitral valve covered by exudate which is adherent. Spleen markedly enlarged, measuring 6 x 4 x 11 cm. One large and several small gray areas beneath capsule. Capsule in one place adherent to parietal peritoneum. On sections there are three very definite infarcts. An infarct at the lower pole measures 3 cm. in diameter. Also several small irregular areas of similar appearance. Both kidneys pale and mottled by small pale areas which on sections have the appearance of small infarcts. Brain and cord not examined.

Microscopical examination: Heart: Muscle markedly infiltrated with lymphocytes particularly in the perivascular areas. Scattered throughout the tissue are multiple abscesses. The blood vessels in many places are plugged by thrombi containing micrococci in pure culture. These colonies are usually limited to the vessels but in a number of areas they have broken through the vessel wall and infiltrated the surrounding tissue. This tissue shows a number of infarcts. The cells of the heart valves are edematous and the lymph sinuses contain many lymphocytes. Lung: Sections through consolidated area show pneumonia in stage of red hepatization surrounding a large infarct. Spleen: Very markedly infiltrated with lymphocytes with multiple abscesses. The sections practically show no evidence of normal tissue. The blood-vessels over extensive areas are thrombosed by colonies of micrococci which have in many places invaded the adjacent tissue. Some of the blood vessels are thrombosed by large blood clots with extensive extravasation of blood in the immediate vicinity. At one point in the section is a large infarct. Other smaller infarcts are scattered throughout the section. Kidney: The blood-vessels show many thrombi due chiefly to the growth of micrococci. The destruction of tissue is quite as marked as in the other organs. The epithelial lining of the tubules has been destroyed in many places.

The above case is reported because of its comparative infrequency, and because of its interest from a diagnostic standpoint.

## Medicolegal Notes.

**Consent to Operation—Modification of Rule by Use of Anesthesia.**—A surgeon undertook to operate free of charge upon a rupture in the plaintiff's left groin. When the patient was put under the anesthetic the three surgeons present discovered another more serious rupture in the patient's right groin. The surgeon operated upon this, intending to operate also upon the other, but was prevented from doing so by the patient's condition under the anesthetic. The patient apparently acquiesced in a completion of the operation on the following day, but later declined to go on with it and brought action against the surgeon for assault and battery. A verdict was given for substantial damages, which was set aside on appeal.

The surgical employment of anesthesia, it was said by the court, has modified the common-law rule that the consent of the patient must be given before the surgeon has a right to operate. This employment has not only eliminated the possibility of obtaining the patient's consent during the operation, but has also had other medical effects. It has rendered possible and of every day occurrence surgical operations of a character and magnitude not dreamed of at the time the common-law rule was in the making, and has also advanced the period that marks the commencement of a surgical operation from the time when the patient's body is actually invaded by the knife to the time when the anesthetic is administered, or at least when the patient has succumbed to its influence. It has also postponed to this same period of relaxation and unconsciousness the making of that complete and final diagnosis of the patient's condition that at common law was made at a time when he could be both informed and consulted. By these considerations the scope of modern surgical operations has been greatly enlarged, and the legal rule applicable thereto extended beyond the emergencies of actual surgery to other matters more or less vitally affecting the patient's welfare. To meet these changed conditions, the rule of law must, in the interest alike of the patient and the surgeon, be adapted to the changes that have been so wrought, chief among which is the unconscious state of the patient at a time when by the common-law rule his consent must be obtained. To meet this fundamental change in the condition of the patient, it is imperative that the law shall in his interest raise up someone to act for him—in a word, to represent him in those matters affecting his welfare concerning which he cannot act himself because of a condition that has become an essential part of the operation. If such a representative has been chosen by the patient himself, the rule has no application But if no one has been so appointed, the law will raise up such a representative. When a person has selected a surgeon to operate upon him, and has appointed no other person to represent him during the period of unconsciousness that constitutes a part of such operation, the law will by implication constitute such surgeon the representative of his patient, and will, within the scope to which such implication applies, cast upon him the responsibility of so acting in the interest of his patient that the latter shall receive the full benefit of that professional judgment to which he is legally entitled. Such implication affords no license to the surgeon to operate upon a patient against his will or by subterfuge, or to perform upon him any operation of a sort different from that to which he had consented. In the present case a ruling that the operation was of a different sort from that to which the patient had consented would be based upon too narrow a view. Whether the rupture occurs on the right side or on the left the intestine is the same, the muscular wall is the same, the operation is the same, and its dangers and the risks are the same.—Bennan v. Parsonnet, New Jersey Supreme Court, 84 Atl. 948.

**X-Ray Photograph—Liability of Master for Injuries Thereby.**—An action proceeding on somewhat unusual facts was brought by a telephone lineman against his employers. He received an injury while in the performance of his duties. A physician was called, who diagnosed the case as a displacement of the sacro-iliac joint, and used heroic treatment that was claimed to have resulted in forcing the joint into place. The plaintiff was making good progress toward recovery, when the defendant's general manager requested him to submit to an *x*-ray picture being taken. The plaintiff opposed this, expressing his fear of injurious consequences, assuring the defendant's manager he was all right, and offering to release the defendant from all claims for damages on account of the injury. His physician also opposed the taking of the *x*-ray picture, but the manager guaranteed that the taking of the picture would not injure the plaintiff, and threatened to discharge him if he refused to submit. After a good deal of hesitation and resistance, the plaintiff finally consented to have the picture taken, and the *x*-ray was applied over his abdomen by a doctor employed by the defendant. The plaintiff testified that the current was left turned on for more than seven minutes. He claimed to have received a severe burning of the tissues by the application of the *x*-ray, and, as a result, to be suffering from paralysis of the bowels.

The relation of physician and patient did not exist between the doctor who applied the *x*-rays and the plaintiff The rule of *respondent superior* therefore applied rather than the law relative to the liability of a physician or surgeon to his patient, or to the liability of a master who employs a physician to treat his servant. The instrumentality was under the defendant's exclusive control, and there was sufficient evidence that injury to the subject is not a necessary result of the taking of the *x*-ray picture, if proper instrumentalities and proper care are used. The court could not say that the plaintiff's injuries were not the result of the exposure. The facts were enough to make the case one of *res ipsa loquitur*, and to make the burden on the defendant show that there was no negligence. That the defendant did not do conclusively. Judgment for the plaintiff was there- The rule of *respondent superior* therefore applied rather fore affirmed.—Jones v. Tri-State Telephone & Telegraph Co., Minnesota Supreme Court, 136 N. W. 741.

# Medical Record.

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## A VERY BAD MEDICAL BILL.

A BILL recently introduced into the New York State Legislature, entitled "An Act to Amend the Public Health Law Relative to Medical Licenses," gives power to the Regents to revoke the license of a practitioner of medicine, annul his registration, or suspend him from the practice of his profession for any length of time, if he is guilty of unprofessional conduct. In principle there can be no objection to a law providing for the revocation of the license to practise for good and sufficient reason. There is already a statute to this effect which is not perfect, but is much to be preferred to the proposed amendment. One great defect of the latter lies in its definition of unprofessional conduct, which is both obscure and absurd.

This definition reads as follows: " 'Unprofessional conduct' means and shall include the following acts or conduct by or on the part of a practitioner of medicine: (a) Advertising either in his own name or in the name of another person, firm, association, or corporation, in any newspaper, pamphlet, or other printed paper or document, or writing letters or causing them to be written, or employing capper, solicitor, or drummer to secure patients, wherein or whereby the medical practitioner holds himself or herself out to cure diseases or defects of the sexual organs, or to cure chronic or incurable diseases, or for being employed by any person, firm, association, or corporation so advertising or announcing." Out of this jumble of words we gather that it is entirely professional to advertise or employ drummers to announce that one can cure all diseases save chronic diseases, incurable diseases, and diseases of the sexual organs. One may advertise that he can cure a chancre of the lip, but must keep silent as to his ability to replace a retroverted uterus.

Obscure as is the meaning of this clause, it is clarity itself compared with the next section: "(b) Announcing professional service without compensation or the acceptance of fees in consideration of the assurance that an incurable disease may be permanently cured." This sentence is absolutely meaningless as it stands. If it is intended to forbid a practitioner from telling a poor patient that he will not charge him anything, it is absurd and outrageous; it would also make every dispensary and hospital physician guilty of unprofessional conduct. Perhaps it means something else.

The next three parts of this wonderful definition read: "(c) Wilfully betraying a professional secret. (d) Habitual drunkenness or addiction to drugs. (e) Dividing or promising to divide a fee with another physician, or accepting a divided fee, without the knowledge of the patient or the person paying such fee."

Finally, if the Regents want to deprive a practitioner of his means of livelihood and cannot find that he has been guilty of any of the acts specified above, they can fall back on the last part of this definition: "(f) Any other action not consonant with good morals, or anything done or said detrimental to the health or morals of others."

It is incredible that such a bill should pass the Legislature, yet it is reported to have passed one branch and to be in a fair way to pass the other, so that the only hope of escaping its dangers lies in the Governor's veto. If he does not do so it will not be because he is ignorant of the will of the profession, for a number of medical societies have already passed resolutions criticising and condemning the bill and have petitioned the Governor to veto it.

## HERESIES IN POPULAR MEDICAL EDUCATION.

THE grammar-school teacher who told her pupils that all evil thoughts originate in the cerebellum had no doubt misconstrued what she had read regarding the lower functions of the brain. "A little knowledge is a dangerous thing" finds its fit application in many of the popular views on the human body and its diseases. The avidity with which persons of more than average intelligence frequently patronize the newer cults in therapeutics, and distrust the sounder teachings of the medical profession, illustrates the prevailing ignorance of the fundamental facts of physiology—an ignorance for which the common schools must be held largely responsible. The effort that has been made within recent years to educate the people by means of lectures, health exhibits, and articles in the press, when properly carried out, has accomplished good results. But in many instances this effort has degenerated into a mere exposure of the naked facts of disease without conveying the important truths underlying these facts. The "tuberculosis exhibit," housed in a dingy store, sometimes suggests the chamber of horrors provided in the dime museum of anatomy of a generation ago. The public press has assiduously cultivated the sensational aspects of the prevention and cure of disease. The monthly magazines have practically exhausted this theme, and a flood of books on health topics bears witness at once to the demand of the public and the business acumen of their authors.

The danger of disseminating error by means of the well-turned phrase or glittering epigram is one of the most important evils of the latter-day popularization of medical knowledge. There is a growing tendency to preach hygienic heresies and to cast aside established beliefs in favor of bizarre theories. There is a host of false prophets who delight in casting ridicule upon some of the cherished cus-

toms and wholesome habits of the people. The influence of these so-called teachers is directly proportionate to their prominence in the public eye, to their ability to gain a hearing at the national medical congresses, to their enterprise in getting a liberal "write-up" in the daily newspapers, and to their command of an attractive and forceful literary style.

In the recently published volume on "Common Diseases," Woods Hutchinson* discourses in his usual vein upon such subjects as pills and powders, dyspepsia, heart disease, seasickness, deafness, insomnia, etc. The well-informed reader, with the gift of humor, will find this book a most entertaining one. But the average reader cannot always distinguish between scientific truth and rhetorical exaggeration, between serious exposition and humorous allusion. There are many facts in medical science which cannot be "popularized" without serious distortion and without creating false conceptions that may ultimately result in serious harm. One who is regarded by a large number of people as an authority, may thus be instrumental in wielding a dangerous influence.

There are statements in this book that should not go unchallenged. The utmost in therapeutic nihilism is perceived in the following, "No drug—save quinine, mercury, and No. 606 in special cases—will cure a disease; only rest, food, sunshine, and fresh air can work that miracle." The medical reader can take this announcement with the necessary reservation, but the layman who is accustomed to read or decipher the prescriptions of his medical attendant, will be apt to conclude on the basis of the above statement that he is usually humbugged by his doctor. Hutchinson knows only three specifics in the materia medica: quinine, mercury, and salvarsan. What of ipecac in amebic dysentery, of thymol in hookworm disease, of iron in chlorosis, of arsenic in chorea, and of thyroid extract in myxedema? These are ignored nor is any attention paid to the host of remedial agents which though not specifics, may nevertheless restore the disturbed equilibrium that in many instances marks the real difference between health and disease.

Another instance of the modern method of enlightening the public is seen in the following statement: "The most effective direct treatment now given in Bright's disease is in the form of prevention, by recognizing it in early stages and giving antitoxins, serums, or antiseptics which will either kill the germ which has caused and perhaps is still keeping up the inflammation, or neutralize its toxins and help the system to get rid of them."

## DISPENSARY AND HOME TREATMENT OF TUBERCULOSIS.

A SOMEWHAT remarkable change has come over the attitude of the medical profession with respect to the treatment of tuberculosis. But a few years ago, in fact, not longer than two years ago, members of the profession who had made a study of the disease seemed to be practically unanimous in favor of sanatorium treatment. Sanatoriums sprung up everywhere, and if it were suggested that the principle was being carried too far and that there might be other effectual modes of treatment than the sanatorium, the suggestion was received with scoffing and the originator was regarded as one whose views were not worthy of consideration. So strong a hold had the belief in sanatorium treatment gained on the medical profession and the public that when the provisions of the Insurance Act in Great Britain were first drafted, that part of the act dealing with tuberculosis was designated "Sanatorium benefits," just as if no other treatment were necessary. Comment was made on this editorially in the MEDICAL RECORD at the time, and it was pointed out that Mr. Lloyd George had been badly advised if he had been led to believe that in the sanatorium lay the sole hope of eradicating tuberculosis. However, as remarked before, a most astonishing change has been manifested during the past year or so in the views of the medical profession regarding the treatment of tuberculosis and, of course, these views have been reflected in the revised drafting of the Insurance Act. The fact has been borne irresistibly upon the medical profession that it is not in sanatoria alone that salvation for the consumptive lies nor by sanatoria alone that the scourge will be stamped out. Indeed, it is now recognized the sanatorium is not even the main factor in the campaign against tuberculosis, but of more or less subsidiary moment. Chief reliance for both the eradication and the successful treatment of the disease must be placed upon dispensary and home treatment, and when the matter is considered it will be easily understood why this is so. In the first instance the ultimate eradication of tuberculosis can never be accomplished by treating those already infected and permitting the malady to spread unchecked. Moreover, it is wholly impracticable to prevent this spread by isolating every case. The reasons are obvious. There are too many patients and the duration of the disease is too long. In consequence the dispensary with its staff of doctors, nurses, and voluntary visitors must take all possible steps to prevent such spread. Furthermore, its rôle is to search out unsuspected cases and to provide them at once with proper treatment.

Therefore, the dispensary now takes its place in the front of the fighting line, it is the attacking force of the greatest strength and in addition is the first line of defence. The importance of the other parts of the army, the sanatorium, the open-air school, the hospital for advanced cases, and the hospital for surgical tuberculosis, is in no wise diminished. Rather their importance is increased and their work is rendered more efficient by having their proper functions marked out and by being linked together by the dispensary which will supply them with the suitable class of patient.

In Great Britain the honor of initiating and developing the dispensary system of treating tuberculosis is due mainly to Sir Robert Philip of Edinburgh, who has worked long in educating the medi-

*"Common Diseases," by Woods Hutchinson, A.M., M.D., author of "Strides in Human and Comparative Pathology," "Instinct and Health," "Preventable Diseases," "Handbook of Health," "We and Our Children," etc. Price, $1.50 net. Boston and New York. Houghton Mifflin Company, The Riverside Press, Cambridge, 1913.

cal profession as to the value of home and dispensary treatment. The Victoria Dispensary for the treatment of tuberculosis was opened in Edinburgh in 1887 and it was not until 1909 that the next one was opened in the British Isles. In New York most effective dispensary and home treatment of tuberculosis has been going on for some considerable time, but in Great Britain, undoubtedly, Philip of Edinburgh may be rightly termed the pioneer of this system of treating tuberculosis. Since the British Insurance Act was first mooted, the medical advisers of the Chancellor of the Exchequer appear to have undergone a change of front. The interim report of the Departmental Committee which was published recently is distinguished by a thorough recognition and appreciation of the value of the dispensary system of treating tuberculosis. The British Government has officially adopted an organized scheme similar to that in existence in Edinburgh as the fundamental basis of a national campaign against tuberculosis. By so doing the government has set the seal of its approval on the dispensary and home treatment of tuberculosis. As the matter stands now dispensary and home treatment, sanatorium treatment, hospital treatment for advanced cases, and hospital treatment for surgical tuberculosis, and tuberculin treatment all work hand in hand. Physicians now possess a proper sense of proportion with regard to the efficacy of different means of treatment, and as a body seem to be convinced that it is only by carrying out home and dispensary treatment to its utmost extent that tuberculosis can be stamped out.

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### Symptomatic Scarlatina.

That a scarlatiniform syndrome can occur under various conditions from the pathogenicity of ordinary streptococci and staphylococci is well recognized. Supposed second attacks may no doubt be explained in part by this knowledge. In certain parts of the world a non-contagious, sporadic scarlet fever is known to exist. Surgical and puerperal scarlatina are doubtless chiefly symptomatic. The type under consideration differs in certain important respects from true scarlatina, aside from the communicable feature. The typical desquamation may be wanting, for example. But it must not be overlooked that irregularities in type may be in part attributable to the condition to which the scarlatinal syndrome has been superadded. At a recent medical meeting at Jena, Bennecke described several examples of a scarlatiniform syndrome accompanying typhoid (*Münchener medizinische Wochenschrift,* March 18). Complication of the latter with true scarlatina has never been seen at the author's clinic. Seemingly typhoid had so altered the resistance of the tissues that purulent foci present in the organism had become activated. In one case furunculosis coexisted, no doubt metastatic. The port of entry was probably the tonsil. Slight lacunar tonsillitis was present and staphylococci were found in the deposit and also in the pus of the furuncles. In another case otitis media was held responsible for the secondary affection. True scarlatina was excluded by absence of the Rumpel-Leede phenomenon. The presence of a mere aberrant typhoid exanthem was also out of the question.

## News of the Week.

**Vital Statistics.**—For the week ending April 5, the death rate in New York City was 14.68 per thousand, the total number of deaths being 1,512. For the same week of 1912, the rate was 17.05 and the total deaths numbered 1,691. The decrease occurred in practically all of the chief causes of death. For the first fourteen weeks of the year the death rate was 15.77, or slightly below that of the corresponding period of last year.

During the month of February there occurred in New York State 12,586 deaths, of which 703 were due to violence. An unusually large number also was due to diphtheria.

**Fall in the Birth Rate.**—The decrease in the French birth rate is again attracting attention, and a report from Paris states that the rate in 1912 was the lowest recorded since 1861. There was only one birth to every thirty families during the year. The infantile death rate, on the other hand, was increased to 143 per thousand. In the former year, with a population of 2,870,000, only 48,230 births were registered, this number being almost 5,000 less than in 1861, when the total population was little more than half as large.

**Centenarian Dead.**—Ocean Grove, N. J., reports the death on April 10 of its oldest inhabitant, John M. Butler, at the age of 103. Mr. Butler had been accustomed to drink eight cups of coffee a day.

**The Baby Show.**—The first hygienic baby contest held in New York on April 12 was a great success, and brought out a number of infants almost physically perfect. The first prize went to a German-Irish boy, who scored 99 points out of a hundred, and the second and third to a Russian and a Swiss girl respectively, with scores of 98.5 and 98. Eight babies received honorable mention with 97 points. All of which speaks well for the neighborhood in which the contest was held.

**The Friedmann Cure.**—Responding to an invitation from the Governor of Rhode Island, Dr. Friedmann left New York last week for Providence, where he has treated many patients and has been given the privilege of practising privately. Availing himself of this privilege, he made $2,000 in the first few days, according to *The Sun.* His sudden dropping of hospital experiments in New York and the alacrity with which the opportunity to make experiments for pay was seized upon tends to confirm the impression that it was not scientific ardor alone that impelled Dr. Friedmann to come to America. A death from tuberculous meningitis of one of the patients whom Dr. Friedmann had treated in New York, is being investigated by the surgeons of the Public Health Service.

**Bonds for Doctor's Fee.**—The Board of Estimate of the City of New York on April 10 approved the issue of $3,300 worth of special revenue bonds, which together with an unexpected balance of $2,500 in the city treasury, will suffice to pay the bill of the physician who attended Mayor Gaynor in St. Mary's Hospital, Hoboken, after the attempt on his life in 1910.

**Italian Hospital Open.**—The Italian Benevolent Institution and Hospital which has been erected in New York, facing the East River between 83d and 84th Streets, was opened recently for the reception of patients. The hospital contains 100 beds and also controls a dispensary in the immediate neighborhood. It is open to all patients, without regard to nationality.

**Plague in Colombia.**—The occurrence of several cases of bubonic plague at Santa Marta, Colombia, is reported in dispatches from Bogota.

**Lectures on Tropical Medicine.**—The Maryland University School of Medicine is offering a course of twenty lectures on tropical medicine under the supervision of Surgeon J. A. Nydegger of the U. S. Public Health Service. With the assistance of Dr. C. W. Stiles, Dr. H. R. Carter, and other members of the Public Health Service, Dr. Nydegger is giving a very comprehensive course.

**Meningitis on Warship.**—Reports of an epidemic of meningitis on the battleship *California* at Guaymas, Mexico, were received by wireless at San Diego, Cal., on April 12. The message requested that a supply of anti-meningitis serum be sent to Guaymas immediately, and the destroyer *Paul Jones* was at once started southward carrying a sufficient quantity of the drug.

**School Hygiene.**—The Fourth International Congress on School Hygiene will be held in Buffalo, N. Y., on August 25 to 30, under the patronage of the President of the United States. At this congress—the first of its kind ever held in this country—it is desired to bring together men and women interested in improving the health and efficiency of school children, and to that end a comprehensive programme of papers and discussions covering the entire field of school hygiene is now being arranged. There will be in attendance delegates from all the leading nations and from every college and university of note in this country, as well as from many educational, medical, and hygienic organizations. Membership in the Congress may be secured on the payment of a five dollar fee, and applications may be made to Dr. Thomas A. Storey at the College of the City of New York, N. Y.

**A Missionary Nurse Wanted.**—The American Hospital for Women and Children at Madura, South India, is in need of a graduate nurse to serve as hospital superintendent. The hospital contains fifty beds, and during 1911, in both the wards and the out-patient department, 12,364 patients were treated. The staff consists of two American physicians with Indian assistants, and the aid of an American trained nurse is greatly desired. The salary of the superintendent is $500 a year, together with a room in the mission bungalow. Further information may be obtained from Mr. W. B. Smith, 600 Lexington Avenue, New York.

**Radium Treatment.**—A department for treatment with radium emanation has been established at the New York Post-Graduate Medical School and Hospital, for public use and scientific investigation.

**X-Ray Suits.**—The Supreme Court of the United States on April 8 handed down the first decision it has ever rendered covering suits for damages for injuries resulting from the use of the *x*-ray. The justices hold that in such cases the burden is on the plaintiff to show that the defendant, a physician in the case under consideration, was negligent, and that the physician need not prove that he was not negligent. The decision was made in a case brought by a patient against a physician in Washington, the patient claiming damages for burns caused by treatment with the *x*-ray.

**Gifts to Charities.**—The German Hospital of Brooklyn and Mount Sinai Hospital of New York receive $2,000 each, and the Montefiore Home $1,000, by the will of the late Joseph Liebmann of this city.

By the will of the late Ellen Connor of New York bequests of $500 each are made to the Home for Consumptives and the New York Foundling Hospital.

By the will of the late Anna S. Reed of Philadelphia the sum of $1,000 is bequeathed to the Women's Homeopathic Hospital.

**Personals.**—Dr. Michael J. O'Meara of Worcester, Mass., has been elected chairman of the Massachusetts State Board of Health.

Dr. John G. Towne of Waterville, Me., has been made commissioner major and surgeon in the Medical Corps of the National Guard of the State.

President Wilson has followed precedent in accepting the presidency of the American Red Cross.

**The Henry Phipps Psychiatric Clinic** of Johns Hopkins Hospital for the treatment of mental disorders was formally opened on Wednesday afternoon of this week. The opening address on "Specialism in General Hospitals," was delivered by Sir William Osler.

**Medical Society Elections.**—Bienville Parish (La.) Medical Society.—At the annual meeting held in Arcadia on April 1, the following officers were elected: *President*, Dr. Oliver O. Hanner, Bienville; *Vice-President*, Dr. J. M. Mosely, Arcadia; *Secretary-Treasurer*, Dr. Edwin O. Edgerton, Arcadia.

Somerset County (Md.) Medical Society.—The annual meeting of this society was held in Crisfield on April 2, and the following officers were elected for the ensuing year: *President*, Dr. Gordon T. Simonson, Crisfield; *Vice-President*, Dr. Martin W. Goldsborough, Princess Anne; *Secretary-Treasurer*, Dr. Henry M. Lankford.

Golden Belt (Kan.) Medical Society.—The following officers were elected at the annual meeting of this society held at Junction City on April 3: *President*, Dr. Richard C. Lowmare, Kansas City; *Vice-Presidents*, Dr. William E. Mowrey, Salina; and Dr. Peter W. Beckman, Lindsborg; *Secretary*, Dr. Walter A. Carr, Junction City; *Treasurer*, Dr. James C. Wilhoit, Manhattan.

**The Late Dr. Francis.**—At a special meeting of the Executive Committee of The Associated Physicians of Montclair, N. J., and vicinity, held March 30, 1913, on account of the death of Dr. Richard P. Francis, the following resolutions were adopted: Whereas it has pleased Almighty God to remove from our midst the friend and associate whom we all deeply mourn, be it resolved: That in the sudden death of Dr. Francis this Society and the community in which he lived have sustained the loss not only of a skillful practitioner of medicine, but also of a most genial and cultured gentleman. That the heartfelt sympathy of the members of this Society are hereby extended to his family, whom we pray may be given strength to bear up under this sad affliction. That a copy of these resolutions be engrossed and presented to his family, and that they be also published in the local press, the Medical Record, and the *Journal of the Medical Society of New Jersey*.

**Obituary Notes.**—Dr. Jared Grover Baldwin of New York, a graduate of the New York University Medical College in 1853, a member of the American Institute of Homeopathy and the New York County Homeopathic Medical Society, and consulting physician to the Hahnemann Hospital, New York, died at his home, after a lingering illness on April 11, aged 85 years.

Dr. Edward Pepper, formerly of Philadelphia,

died at his villa in Algiers during the last week of March. He was a graduate of the École de Médecine of Paris, and he practised his profession in Paris and in Algiers.

Dr. Edwin Folsom of Fargo, N. D., died at his home on March 22, aged 71 years.

Dr. John Edwards of Gloversville, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1869, a member of the New York State and Fulton County Medical Societies, visiting physician to the Nathan Littauer Hospital, Gloversville, and for many years health officer of the town, died at his home on April 4, aged 66 years.

Dr. Frank Little of Brooklyn, N. Y., a graduate of the University of Worcester, Medical Department, in 1881, a member of the American Medical Association, the New York State and Kings County Medical Societies, the American Electro-Therapeutic Association and the Brooklyn Pathological Society, and formerly on the staff of the Kings County Hospital, died at his home on April 4, aged 57 years.

Dr. George Allen Staples of Dubuque, Iowa, a graduate of the College of Physicians and Surgeons, New York, in 1885, and a member of the American Medical Association, the Iowa State and Dubuque County Medical Societies, the Chicago Orthopedic Society, and the American Pediatric Society, died suddenly of apoplexy, on April 2, aged 54 years.

Dr. Karl G. Morse of Boston, Mass., a recent graduate of the Tufts College Medical School, Boston, died in a Boston hospital on April 3, aged 26 years.

Dr. Algernon S. Barnes of St. Louis, Mo., a graduate of the Medical Department of the University of Missouri, Columbia, in 1855, a veteran of the Civil War, during which he served as surgeon in charge of the Military Hospital at St. Louis, and a member of the American Medical Association and the Missouri State and St. Louis City Medical Societies, died at his home on March 30, from arteriosclerosis, aged 82 years.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

APPENDICITIS; DIAGNOSIS, BASTEDO'S AND ROVSING'S —ANESTHETICS, DEBATE ON—A TRAVELING EXHIBITION—GUILD OR UNION—OBITUARY.

London, March 28, 1913.

Dr. A. F. Hertz, assistant physician to Guy's Hospital, brought before the Royal Society of Medicine on the 14th inst. the symptom of chronic appendicitis first described as a test by Dr. Bastedo of New York. This symptom, the production of pain and tenderness in the right iliac fossa on inflation of the colon with air, Dr. Hertz has employed in a number of cases and found it of such value that he is anxious it should be more widely recognized. It is simple to carry out, he says, causes little inconvenience to the patient and is in his experience more reliable than any other sign. He uses an ordinary rubber rectal tube which he only introduces about 1½ inch from the anus, contrary in this to Bastedo's proposal to pass it 11 or 12 inches; for there is no advantage in passing it further than just beyond the ampulla, as experiments he has made with Dr. Goodhart and others show that a tube can very rarely be passed beyond the pelvi-rectal flexure which is never more than 6 inches from the anus.

When air is slowly pumped through the inflation tube the colon is seen to become distended and soon a diffuse discomfort is felt by the patient in the lower part of the abdomen but no pain, unless a great quantity has been forced in, and even then it is not more marked on one side. Further, no tenderness is produced in the absence of appendicitis. But pain and tenderness are produced in the right iliac fossa when chronic appendicitis is present. When tenderness has previously been observed it will be aggravated and when it has not been detected in spite of frequent examinations inflation will produce it. Dr. Hertz has noticed an additional symptom, viz.: pain referred to the epigastrium on pressure in the right iliac fossa after inflation. He has only employed this sign in suspected chronic cases. Mr. Sheaf tried it in two acute cases but was prepared to operate instantly if the test were positive, as it proved, and excision was performed in both cases within a few minutes. This precaution is most necessary in acute cases and to it may be added care to introduce the smallest quantity of air, just enough to increase slightly the pain. Otherwise there would be danger of tearing adhesions or causing perforation of a diseased appendix.

Another sign, commonly called Rovsing's, although it was employed before he wrote of it by Dr. Lauriston Shaw, may be mentioned as probably dependant on a similar condition. It consists in pain in the right iliac fossa on making pressure over the descending colon, probably due to gas being forced from the distal into the proximal portion. Its use is very limited as it is rare for gas enough to produce it to be present in the descending colon.

At the meeting of the Section of Anesthetics an address on Clover as a pioneer and surgical inventor was delivered by Mr. Buxton Browne who began by expressing his pleasure that the Section accepted his presentation of Clover's portrait. It was only natural for a general surgeon to dwell on Clover's contributions to the surgical art more than on his pioneer work. One of the nineteenth century's greatest boons to humanity was lithotrity, but that was not perfect until Clover's evacuating bottles and tubes completed it. Many modifications have been suggested but all have been abandoned and Mr. Browne said he would be content to use it just as it left Clover's hands if he had to perform lithotrity to-day. The last century was the most marvelous the world has seen in reference to the progress of surgery and Mr. Browne thought British surgeons led the van of that army of progress, but only about a dozen were originators who left an abiding mark on practice, as Clover did, and who was therefore rightly called a genius. Dr. Dudley Buxton and Mr. B. Gardner also eulogized Clover who was the first in England to apply a face piece in administering nitrous oxide, which he demonstrated at the Dental Hospital in 1866.

A paper on technique in general anesthesia for intranasal operations was then read by Mr. Bellamy Gardner who laid down principles for agreement between surgeon and anesthetist and held a patient might be anesthetized in the sitting posture by the skilled specialist. This was discussed by Messrs. Barton, McCardie and Boyle who found surgeons differed a good deal as to the position they preferred for the patient during these operations.

Two papers followed on the use of scopolamine, morphine, and atropine combined. The first by Mr.

Morcom who recommended an injection of this mixture three-quarters of an hour before an operation, the usual effect being that the patient falls into a quiet sleep and the general anesthetic can be given without waking him and in less quantity. The dose he gave was hyoscine hydrobromide, 1/120 grain; morph. tartrate, 1/6 gr.; atropine sulph., 1/100 gr. Subsequent vomiting was practically non-existent, say 6 per cent. The second paper was by Mr. Lionel Norbury who gave the injection two hours before the operation, containing 1/75 gr. hyoscine hydrobromide, morph. tart. 1/6 gr., and atrop. sulph. 1/150 gr. This was usually sufficient, but if not he gave, fifteen minutes before the operation, an injection of ¼ gr. morphia only—a safer plan than repeating the compound. He had only tried the plan in six cases and in three of them he added local infiltration of the skin with a 1 per cent. solution of novocane; in one he gave a little gas for the preliminary incision, the subsequent proceedings being carried in comfort—no shock, no pain, the patient sleeping on for hours. The respirations fell to 8 and were Cheyne-Stokes in character, but responded to an injection of strychnine. The injection seemed of most value in amputation, in cases of diabetes, phthisis, sepsis, or cardiac or arterial disease, as it caused no shock and no danger of acidosis or coma.

The President, Dr. Blumfeld, said surgeons were not agreed as to the value of scopolamine, some objecting that it caused rigidity. He had observed it sometimes delayed relaxation. Patients were grateful for it, but it did not detract from the difficulties of the surgeon or anesthetist. He was using it in combination with omnopon and atropine. Dr. Tate did not think it impeded the surgeon but a quieter time was secured after the operation. Dr. Powel said nurses thought it more difficult to tell if the patient were in danger after scopolomine. Dr. McCardie saw no need for the atropine; of course the morphine made matters easier for the surgeon by damping down the respiration. After these alkaloids there seemed more oozing than without them; he gave a fairly full dose before ether inhalation. Dr. Wilson remarked that young patients who had had morphine before general anesthesia often experienced excessive thirst afterwards.

The Traveling Tuberculosis Exhibition which for many months has been going through the towns of the country to disseminate knowledge concerning the prevention of the disease has been staying all this week at Poplar. Arrangements were made for admitting the school children to the extent of some 300 a day, and a sum of £75 was presented to the Poplar Dispensary to provide 100 prizes for the children writing the best essays on what they saw and learned at the exhibition. The dispensary was opened last April and 964 persons have since applied for treatment, of whom 509 had pulmonary phthisis, 194 were grouped as suspects, and 264 were non-tubercular.

The National Medical Guild, recently formed, has applied to be registered under the Trades Union Acts and is issuing a circular inviting all practitioners to join and so secure a powerful body to defend their interests. The Guild will resist the arbitrary powers which are being assumed by the Insurance Commissioners and will not be above employing trade union methods if the necessity of doing so is forced upon it. Mr. Charles Buttar, an earnest worker, is the president.

The Guild must be distinguished from the union formed some eighteen months ago and composed of men who decline to go on the panel or having done so have found it impossible to work the system with benefit to the patients and will retire at the end of the first term, next month. The Union will work for an amended act but will not adopt trade union methods.

Dr. Galabin, Conulting Obstetric Physican to Guy's Hospital, died on the 25th inst. at his country residence, after five days illness, from pneumonia. He graduated as a Wrangler and first-class Classic at Cambridge, in 1866, and proceeded to M.D., 1873, as gold medallist of his college (Trinity). He had meantime taken the curriculum at Guy's and the membership of the two Royal Colleges. He was elected F.R.C.P. in 1878. He has been President of the Obstetrical Society, also of the Hunterian Society, and Examiner to the Universities of Oxford, Cambridge, and London. For a time he edited the *Obstetrical Journal* and contributed freely to the *Transactions* of the societies and *Guy's Hospital Reports*. His *Manual of Midwifery* and his *Diseases of Women* both passed through several editions. Among other subjects he wrote about the cardiograph, the cause of water-hammer pulse, and secondary waves of the pulse.

Another gynecologist, Dr. A. J. Wallace of Liverpool, has died at the early age of 46, but not before he had made his mark in the profession and in his specialty. He graduated at Edinburgh in 1889. He became lecturer on his subject at the Liverpool University College, where he held a scholarship, and surgeon to the Hospital for Women and the Maternity Hospital, and consultant to the Royal Southern Hospital. He contributed valuable papers to the societies and journals.

Brigade-Surgeon C. F. Oldham, I.M.S., has died in his 82d year. He qualified at the two colleges in 1858-9. He wrote "What is Malaria?" and also "The Sun and the Serpent."

Dr. Peter Anderson, for over thirty years medical missionary in Formosa, died on the 12th inst. in his Scottish home, to which he retired some three years ago. He took the two diplomas of the Edinburgh Colleges in 1878 and sailed for Japan soon after, as he had qualified with the express intention of becoming a missionary.

## OUR PARIS LETTER.

(From Our Regular Correspondent.)

COMPULSORY NOTIFICATION OF TUBERCULOSIS—DANGER OF CONTAGION FROM TUBERCULOSIS IN THE HOSPITALS—OFFICERS OF THE ACADEMY OF MEDICINE—AIR EMBOLISM FOLLOWING PROSTATECTOMY.

PARIS, March 1, 1913.

THE question of the compulsory notification of cases of tuberculosis came up before the Academy of Medicine as the result of the initiative taken by certain members of Parliament who have the courage to propose the defense of the country against tuberculosis. This question has already come up for discussion on many occasions. At the present time the reporting of cases of pulmonary tuberculosis is optional. According to Professor Letulle, who opened the discussion, tuberculosis is the most deadly of the transmissible diseases although the modes of contagion are perfectly known. Moreover, the distress which it causes and its profound economic influence make it the most important of the social diseases. The obligation of reporting a case of tuberculosis should devolve upon the head

of the family who should be provided with a certificate by the physician treating the case. In order that the spread of tuberculosis may be effectively combated, it is necessary to take arms against alcoholism, unhygienic dwellings, and the adulteration of foods. The people should be guaranteed a healthful and inexpensive diet and should be given the opportunity of working among the best hygienic surroundings.

Professor Robin does not believe in making the notification of tuberculosis compulsory, on account of the difficulties that would attend the enforcement of such a measure. He believes that it would suffice to compel the disinfection of the premises following the death of a case of tuberculosis, and possibly after the removal of a tuberculous patient to another dwelling. Reynier also believes that compulsory notification would be of questionable value from the viewpoint of prophylaxis. All the measures necessary for disinfection and curative treatment can be carried out without subjecting the patient and his family to the vexation of being reported to the public authorities. He proposed that the Academy should recommend that all vacant dwellings be disinfected before being rented to new tenants. Regarding alcoholism as one of the most important factors in the production of tuberculosis, he advocated a strict enforcement of the law relative to the limitation of the number of saloons and the regulation of the sale of alcohol. Lereboullet believes that a successful campaign against tuberculosis would demand the better sanitation of dwellings, the repression of alcoholism, and the extending of the necessary social aid to indigent consumptives.

Professor Gaucher thinks that the compulsory notification of tuberculosis is impracticable, vexatious, and useless. Moreover, it could not be enforced, for the physicianu who fails to report a case may allege in self-defense that he has made an error in diagnosis. Mosny declares that the proposed law has been opposed by nearly the entire profession. The ideal methods of prophylaxis would be the isolation of the tuberculous in rooms sufficiently spacious to minimize the risk of contagion, the sending of all susceptible children to the country, the aiding of the families of the afflicted, and the periodical disinfection of the linen, the clothing, and the dwelling of the patient.

Professor Widal alluded to the fact that most of the tuberculous cases came sooner or later to the hospital or dispensary, and that the reporting of these cases took place automatically. Contagion was most to be feared in the hospitals in which patients with tuberculosis were treated promiscuously with other patients. The latter who were enfeebled as the result of acute or chronic disease were most susceptible to tuberculosis. The speaker advocated the provision of special wards for tuberculous patients. Heurot of Rheims called attention to the fact that of all European nations France leads in the percentage of tuberculous cases among its population.

Mesureur, Director of Public Charities, hoped that the debate would put an end to the uncertainty that has prevailed regarding the means of preventing contagion in the hospitals. The isolation of the tuberculous patients would necessitate the use of a distinct hospital equipment for these cases and the organization of a separate medical staff.

The officers of the Academy of Medicine have been installed for the present year. The president is Professor Chauveau, an eminent savant, honored in France and in other countries, and regarded as an authority in many fields of medical science. The vice-president is Dr. Perier. The permanent secretary is Professor Jaccoud, and the annual secretary is Professor Blanchard.

At the Surgical Society, Marion reported a case of prostatectomy in which the patient died from air embolism. Following anesthetization an assistant filled the bladder with air, according to the usual method, but to the surprise of those present 450 c.c. of air were injected without distending the bladder. The operation was carried out in the ordinary way: the prostate was enucleated after the bladder was opened and the patient was returned to his bed. A few minutes later he died, his skin having taken on a marked violaceous coloration. Marion believes that the fatal outcome in this case is to be attributed to air embolism, the injection of air having caused a laceration of the vesical mucosa, with the production of an opening in a vein through which air entered. The speaker believes that the danger of embolism may be avoided by the use of a fluid in distending the bladder.

## OUR BERLIN LETTER.

(From Our Regular Correspondent.)

STATISTICS RELATING TO THE MEDICAL PROFESSION OF GERMANY—THE PROPORTIONS OF SPECIALISTS—GLOOMY OUTLOOK—NATURE OF ARTHRITIS DEFORMANS—STATISTICS OF FERTILITY.

BERLIN, February 15, 1913.

THE statistics of Prinzing relating to the medical profession of Germany have, as usual, appeared punctually. In 1912 there were in Germany 33,527 physicians, or 5.06 to every 10,000 inhabitants. There was a decided increase over the previous year. There is a relatively small number of physicians in the industrial kingdom of Saxony, in the Rhenish provinces, and in Westphalia. This is naturally due to the fact that there are in these regions a particularly large number of state invalidity insurance offices, which afford to only a few physicians the prospects of a good livelihood. There are 151 female physicians, of whom 124 live in large cities. There has been a marked increase in the number of female medical students, which amounted to 582, as against 371 of the previous year. There has been a slight decrease in the number of specialists. In 1911 there were 35.9, while in 1912 there were 35.5 to every 100 physicians. The gynecologists predominate; next in order come the surgeons, the ophthalmologists, the laryngologists, the dermatologists, and the pediatrists. If one take into account the marked increase in the number of students, the outlook for the German practitioner is getting worse and worse.

The "Nature of Arthritis Deformans" was the subject of a discourse by Axhausen at the first meeting this year of the Berlin Medical Society. None of the theories that have been proposed concerning this disease have been satisfactory. The real cause, according to the speaker, is a bony necrosis which causes a reactive inflammation in the surrounding tissues. The form of the resulting bony changes is determined by the static conditions. Changes similar to those present in this disease can be produced experimentally. By means of electrolysis there can be produced a necrosis in the healthy articular cartilage. There then result arthritic manifestations that closely simulate those present

in arthritis deformans. How can one explain the greater incidence of this disease in advancing life? Cartilage receives its nourishment by diffusion. If nutritional disturbances occur in an individual passed middle life, then the conditions for necrosis are present, and the clinical picture of arthritis deformans readily unfolds itself.

At the close of the last year F. A. Theilhaber read a paper before the Society of Social Medicine, Hygiene, and Medical Statistics. The title was "New Statistical Methods in the Determination of Fertility." The speaker emphasized the fact that former methods of calculating fertility on the basis of an excess of births were false. The excess of births is no definite indication of the degree of fertility. The error in the former methods consisted in the fact that the degree of fertility depends not only upon the excess of births but also upon the death rate. Now, it might happen in certain localities, that the mortality would become nil, provided that all aged individuals moved away from these localities. Besides, a recent youthful immigrant population has a very low death rate. Theilhaber reaches the conclusion that the excess of births obtained by the subtraction of the general death rate from the birth rate is so dependent upon the national peculiarities, the health of the older classes, the infantile mortality, migrations, and other factors, that the figures obtained are not indicative of the degree of fertility. Adopting the suggestion of Hindelang, the speaker employed the following method of solving the problem: If 1,000 fertile women are mated with 1,000 fertile men there will be 66.7 births per year. Since the reproductive period extends from the fifteenth to the forty-fifth year, there should be a total of 2,000 births during this period. The figure 66.7 per thousand represents the ideal increment of births. This ideal, however, does not give the exact figures, for up to the time that the females reach the reproductive age, say the fifteenth year, a certain proportion die. This proportion is subject to but slight variation, and may be easily calculated. The mortality up to five years is 20 per cent. of all births; the mortality from five to fifteen years is 5 per cent. of the births. The total mortality is 25 per cent., on account of which the ideal increment of births must be increased in order to assure the maintenance of the normal increment of birth. The increased figure for the ideal increment should be 89 births per 1,000 child-bearing women. According to this method, it is found that in 1906 the French nation gave evidence of a substantial degree of fertility. In 1909, however, the latter was represented by the figure 87.5 per 1,000, which, on comparison with the normal figure of 89 per 1,000, shows that the fertility was 1 per cent. too small. After presenting a number of other examples the speaker concluded that his method provided a scientific means of measuring the fertility of a people.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*April 3, 1913.*

1. Some Factors Which Influence the Excretion of Formalin in the Urine of Children and Infants Taking Hexamethylenamin (Urotropin). F. B. Talbot and W. R. Sisson.
8. Coxa Vara: Some Observations on this Condition with Especial Reference to the Question of Spontaneous Recovery from this Deformity. J. Warren Sever.
3. Results of the Wassermann in Two Hundred Consecutive Admissions to the Danvers State Hospital. H. L. Paine.
4. The Etiology of Hay Fever. A. Coolidge.
5. The Etiology of Hay Fever. T. Smith.
6. A Case of Gastromesenteric Ileus. C. A. Porter and G. W. Morse.
7. Syphilis and the Surgical Out-Patient. W. P. Coues.

1. **Urinary Excretion of Formalin in Children.**—F. B. Talbot and W. R. Sisson conclude from their observations that all children are capable of breaking down hexamethylenamin and that they all consequently excrete formaldehyde. Relatively large doses are often necessary before the excretion of formaldehyde takes place. As pointed out by Jordan, "the more acid the urine the greater is the decomposition of urotropin and excretion of formaldehyde." Since it has been shown by other observers that the antiseptic power of urotropin is dependent, not upon the hexamethylenamin, but upon the presence of free formaldehyde, one can further conclude that urotropin should not be given with drugs that cause the urine to turn alkaline. Finally, the authors believe that to insure the efficacy of the drug, specimens of urine after the administration of hexamethylenamin should always be examined for the presence of free formaldehyde.

2. **Spontaneous Recovery from Coxa Vara.**—J. W. Sever notes that rachitic coxa vera is frequently associated with bow legs and knock knees, but may exist independently. In the author's series of cases it was observed to a greater degree in knock knees than in bow legs. The condition apparently requires no treatment. The correction of a co-existing condition of knock knees or bow legs may hasten the process of recovery from coxa vara. In all cases there is a tendency to spontaneous recovery and a restoration towards the normal angle of the neck of the femur without treatment. There is probably very little or no permanent disability in the average case.

3. **The Wassermann Reaction in the Insane.**—H. L. Paine states that of 200 consecutive insane patients admitted to the Danvers State Hospital 49 showed a positive Wassermann reaction, *i.e.* 24½ per cent. One hundred and forty-six cases were from cities; of these, 36 gave a positive reaction, a percentage of 24+. Fifty-four cases were from towns; of these, 13 were positive, a percentage of 24+. Of these 200 cases, 118 were males, and of these 30 were positive, a percentage of 25+. Eighty-two cases were females, and of these 19 were positive, a percentage of 23+. The seacoast cities gave a percentage of .32; the inland towns gave a percentage of .17; the mill cities gave a percentage of .28; and other cities a percentage of .19.

5. **Etiology of Hay Fever.**—T. Smith finds that it is not quite possible to explain definitely hay fever as an effect of pure toxins on the one hand, or of hypersensitiveness on the other. The latter explanation is the simpler and is currently accepted. Not enough, however, is known of anaphylaxis itself. There are many phenomena at present thrown together as anaphylaxis, which need further analysis. It is also probable that in this disease the two phenomena are so associated that now one, now the other predominates. Pollen protein may contain both hypersensitizing and toxic substances not yet separated from one another.

7. **Syphilis and the Surgical Out-Patient.**—W. P. Coues believes that there is an enormous amount of unrecognized syphilis in the surgical out-patient department of hospitals and dispensaries in every large city. The prompt recognition of these cases for their own benefit and that of their community is of great importance. They should at once be referred to and treated by those in charge of the department for syphilis in the various institutions. Every such out-patient department should have facilities for treating all the manifestations of syphilis, surgical, or otherwise, within its own walls. In the surgical department three minutes extra time spent with each patient will show the presence or absence of keratitis, gum-

matous scars, gross periostitis of the long bones, abnormal teeth, old perforations of the palate, or lesions of more active syphilis, and will repay the surgeon for his trouble.

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## New York Medical Journal.

*April* 5, 1913.

1. Adventure in Practice. J. G. Mumford.
2. "Vienna Caustic." A. Maverick.
3. Developmental Alexia. B. Chance.
4. The Treatment of Epilepsy with Hypodermic Injections of Crotalin. H. H. Spangler.
5. Infection with *Entameba tetragena*. W. M. James.
6. Tabes Dorsalis without Lymphocytosis. T. A. Williams.
7. Hypertrichosis. A. Brand.
8. The Diagnosis of Pulmonary Tuberculosis. H. S. Goodall.
9. A Comparison of Types of Continued Fever. W. Allan.
10. Multiple Neuritis in a Child. J. M. Wallfield.
11. A Case of Psoriasis. J. Epstein.
12. Tetanus Successfully Treated with Antitetanic Serum. L. J. Friedman.

**2. Vienna as a Center for Postgraduate Medical Study.**—A. Maverick calls attention to those American students who "waste their time and money and sometimes fool their friends at home by 'studying abroad.' 'That doctor studied in Vienna, he must be pretty bright.' Yes, but what did he study? Here is one disciple of Esculapius who studied diseases of the eyeball three hours a week and the peculiarities of the billiard ball six hours a day—he will soon return as an eye specialist. Here is another who is taking up genitourinary diseases, but who hunts for gonococci, not in the hospital, but in cafés and music halls. Here is a third who will soon open an office in a large American city as an expert on stomach troubles, but whose study has consisted chiefly in the effects of Hungarian goulash and Munich beer upon his own stomach. Here are some more who do not maintain that they are studying anything—they are 'just looking around, getting used to the language and customs before beginning.' Many of these do not know exactly what they want. Then there is the busy practitioner who rushes through Vienna with exactly six weeks to spare. He expects to gulp down a dose of foreign medicine as he would a cup of coffee and a fried egg. Mental indigestion is the result. He would do better at home, Maverick says, keeping up with his medical journals.

**3. Congenital Word Blindness.**—B. Chance notes that an analysis of the published cases of this condition shows that a great variety exists; some of the patients were "blind" for letters or for only certain letters; others were "blind" for certain words only, or, for the order of the letters in the words; while others were not able to read words at all. The author has not seen a case of complete inability to recognize letters—"literal alexia" must be rare indeed. Very few, with the advance of their intelligence, failed to learn to read arithmetical signs and figures; evidently that was because figures have complete mental values, whereas letters and even words are not entities and require therefore a context to impress their meaning. That all the cases should have been found, with two or three exceptions, in boys, and not in girls, and always in youths of British or American birth or descent, is one of the unexplained mysteries, Chance says, of this curious affection.

**9. Types of Continued Fever.**—W. Allan states that in the Piedmont region of North Carolina more than half of the typhoid fever cases exhibit a low remittent temperature and that the duration of fever after admission to the hospital was less than fifteen days in 53 per cent. of the cases. These cases were practically all seen during the first week of illnesss, so that the short duration of fever and the remittent curves are not due to late admission during the third and fourth weeks. However, the mortality of the low remittent typhoid in this series (10 per cent.) is not less than the general mortality. The preponderance of these short and often mild cases is probably due to a liberal admixture of paratyphoids.

## Journal of the American Medical Association.

*April* 5, 1913.

1. Ligneous Phlegmon of the Abdominal Wall. W. W. Grant.
2. A New Method of Shortening the Round Ligaments. S. Figueroa.
3. An Experimental Study of Bone Growth and the Spinal Bone Transplant. F. H. Albee.
4. The Problem of Teaching General Medicine. E. P. Lyon.
5. The Teaching of Psychiatry. C. W. Burr.
6. The Teaching of Insanity. F. X. Dercum.
7. Saving the Backward School Child. G. M. Gould.
8. The Treatment of Gonorrheal and Other Infections with Digestive Bacterial Extracts. J. O. Hirschfelder.
9. A Case of Congenital Familial Dextrocardia with Electrocardiographic Curves. S. Neuhof.
10. One Hundred Cases of Acute Arthritis among the Negro Laborers on the Panama Canal. W. Baetz.
11. Rabies. A Pathognomonic Sign Generally Overlooked. M. B. Wesson.
12. The Preparation and Employment, in a Series of Cases, of a Potent Polyvalent Antistaphylococcic Serum. B. A. Thomas.
13. Intermittent Pyuria Due to Infection of the Prostatic Utricle. A. J. Underhill.

**1. Ligneous Phlegmon of the Abdominal Wall.**—W. W. Grant reports two cases of this condition in which staphylococcic infection was determined. The cancerous theory will probably soon be abandoned, and, according to present knowledge one is justified in concluding that the disease generally occurs after middle life in persons whose resistance has been impaired by previous ill health. The immediate cause is a slow infective process with or without trauma. The dictum of Reclus that it is not due to specific bacteria, but to a variety of germs of mild virulence seems confirmed. The staphylococci seem to be the chief offenders. The usually slow and protracted course and final resolution are characteristic. Hyperleucocytosis always exists. The disease is cured more quickly and completely by free incision and serum treatment than by any other means known at the present time, and early diagnosis makes the relief more frequent and rapid.

**9. Familial Dextrocardia.**—S. Neuhof reports two cases of this condition observed in a brother and sister. No such condition existed in the parents, as far as is known, or in the one living brother. In the girl, who died from tuberculosis some years ago, the hospital report reads, "Heart situated on the right side, liver on the left." In the male the same conditions exist, the apex of the heart being located in the fifth intercostal space on the right side. The liver is situated on the left, the spleen on the right. The man is a hard worker and suffers from no circulatory disturbances.

**10. Arthritis in the Canal Zone.**—W. Baetz believes that cases of acute arthritis are often diagnosed as acute articular rheumatism. The existence of the latter in the tropics has been denied, and to gain information as to the types of joint affections occurring among the colored employees of the Canal Zone, a study of 100 consecutive acute cases was made by him. Traumatic cases and those occurring in pyogenic and disseminated tuberculosis were excluded. The patients were adult male negroes in the Ancon Hospital, and it is not probable that any of them except one have ever lived anywhere outside of the tropics. The final diagnoses were as follows: Syphilitic arthritis, 63; gonorrheal arthritis, 28; undetermined arthritis, 6; dysenteric arthritis, 2, and tuberculous arthritis, 1. The large proportion of syphilitic cases was determined, not by clinical observation alone, but also by the Wassermann and therapeutic tests, the former of which was positive in 93.6 per cent. of the sixty-three cases.

**11. An Early Symptom in Rabies.**—M. B. Wesson calls attention to an early symptom of rabies observed by him in animals and man which has received very little notice in literature. This is a left hemiplegia, starting in a hind leg in the lower animals and simulating Landry's paralysis. He has observed this symptom in over two hundred rabbits inoculated with rabies, as well as in a number of animals infected otherwise. He also had the opportunity of observing a fatal case in man in which this symptom occurred. It has been noticed in man, the hog, the dog, the guinea-pig, and the rabbit; in all of the quad-

rupeds the initial paralysis was in the left hind leg and in the man it was in the left leg and gradually developed into a left hemiplegia which later became general. The author concludes that in an animal that has suddenly become extremely nervous and irritable the development of a weakness in the left hind leg without apparent cause warrants a tentative diagnosis of rabies.

13. **Intermittent Pyuria.**—A. J. Underhill reports two cases of intermittent pyuria diagnosed as due to infection of the prostatic utricle. In each case the posterior examination of the urethra through the endoscope showed the verumontanum swollen and edematous and pus could be washed out from the utricle. The condition was relieved by injections of 1 per cent. silver nitrate and in the second case by the same, later replaced by quickly withdrawn injections of a 1:1000 solution of liquor formaldehyde. The point of interest in the cases was the intermittent pyuria lasting a day or so and followed by a disappearance of all symptoms during the intervals until sufficient pus accumulated for the pressure to overcome the resistance offered by the adherent opening to the utricle. Another point of interest in the second case is the fact that the ejaculatory ducts opened into the utricle, as spermatozoa appeared every time it was aspirated. It is surprising that the seminal vesicles and the epididymis were not also infected more severely than was the case.

## The Lancet.

*March 29, 1913.*

1. Intrathoracic Aneurysm. F. de Havilland Hall.
2. Eczema Oris as a Manifestation of Congenital Syphilis. L. Findlay and H. F. Watson.
3. The Relation of Puberty and the Menopause to Neurasthenia. H. Macnaughton-Jones.
4. Hyoscine-Morphia Anesthesia for Alcohol Injection in Neuralgia. W. Harris.
5. Remarks Introductory to the Clinical Study of Pulmonary Tuberculosis. C. T. Williams.
6. The Individual Treatment of Diabetes. S. A. Arany.
7. The First 100 Cases Recommended for Sanatorium Benefit in East Essex.

1. **Intrathoracic Aneurysm.**—F. de Havilland Hall states that the sphygmograph is a useful adjunct in the diagnosis of this condition. It will enable a definite record to be kept of the condition of the pulses, and if there be any difference between the two pulses the tracing will give more distinct information than the impression conveyed to the finger. It is a curious circumstance that in the past so little attention was paid to miosis. Tracheal tugging may be present when many other physical signs and symptoms are absent. The sign is limited to aneurysms involving the transverse arch. Direct pressure upon the trachea does not cause tracheal tugging. In no department of medicine has the *x*-ray method of examination done greater service than in the detection of intrathoracic aneurysm. In speaking of the mode of termination of intrathoracic aneurysm the author mentions the possibility of cure, though this termination is seldom met with. In the rare cases in which cure of an aneurysm takes place this is effected in one of two ways: either by the deposition of laminated fibrin in the interior of the sac, or by the outer coating of the sac getting more and more supported externally, by fibrous change taking place in the tissues around the aneurysm. A fatal termination may be brought about in the following ways: I. Rupture: (*a*) Internal—(1) into serous membranes; (2) into mucous membranes; (3) into blood-vessels; (4) into the subcutaneous tissue. (*b*) External. II. Pressure upon trachea. III. Pressure upon esophagus. IV. Exhaustion due to long-continued suffering, or arising from repeated small losses of blood. V. Heart failure—frequently in connection with aortic regurgitation. VI. Anginal attacks. VII. Cerebral embolism. VIII. Pulmonary tuberculosis and other complications.

2. **Eczema Oris and Congenital Syphilis.**—L. Findlay and H. F. Watson state that in its most typical form the lesion is situated at one or both angles of the mouth and radiates therefrom towards the cheek, sometimes in the form of fan-shaped patches. It may, however, completely surround the mouth and implicate the face extensively. The patches are somewhat irregular in shape with sharply cut or ill-defined margins. They are red in color, at times the hyperemia being very marked. The surface is, as a rule, dry and scaly, although occasionally, and especially during an exacerbation of the mischief, there may be some discharge with the formation of crusts, and at this period there is always a certain degree of induration. The eczematous patch is continuous with, and frequently invades, the mucous membrane of the lip, giving it a slightly papillary appearance. The lips themselves may be swollen to a greater or less degree. A similar condition round the nostrils, where there is usually a greater tendency to moisture, and eczema tarsi are also present in a proportion of the cases. It is a most obstinate and chronic malady, never entirely disappearing, though varying much in severity from time to time.

3. **Puberty, the Menopause, and Neurasthenia.**—H. Macnaughton-Jones asks: "To what conditions should one limit the application of the term pubertal neurasthenia," in which he includes the borderland symptoms of psychasthenia. He groups these symptoms as follows: complaints of fatigue and disinclination to work and recreation, with general apathy; irritability of temper and capriciousness; inability to concentrate attention; neuralgias; erratic and shifting pain in the head, spine, and left intercostal region; capriciousness in or morbid appetite; gastric neurosis, and urinary irritation and frequency. Following these psychophysical symptoms come the more purely psychic, morbid imaginings and causeless apprehensions, fanciful ailments, groundless resentments and dislikes of relatives or friends, unconquerable erotic impulses, and religious fervor and obsessions. As regards neurasthenia of the menopause the first important practical point is the differentiation of those symptoms which are common to the climacteric and in no sense appertaining to true neurasthenia. Both during the advent and occurrence of the menopause women vary greatly in their powers of endurance of pain and self-control, and in their sensitiveness to any reference to the sexual change. With it come various vasomotor disturbances, morbid blushes, flushings, attacks of giddiness, tinnitus, retinal hyperemias, laryngeal neuroses, coldness of the extremities, headache, general languor, ovarian, sacral and coccygeal pain, palpitation, breathlessness, cardiac intermission, digestive errors, and urinary changes. It is only natural that, when any such exciting or depressing causes exist, irritability, or some erraticism of temper, demeanor, conduct, or the assumption of an unusual attitude to friends should occasionally declare itself. It is at such times that the suggestion of some slighting term as "neurotic" becomes unjust and cruel. Any of these states may become aggravated and merge into attitudes of inaptness and irresistible fatigue, of excitability and irritability, or nervousness and apathy, of apprehension and brooding, of antipathies and unwarrantable inferences, together with obsessions as to various ailments and pains, or the fear of the committal of some wrong and sin. Then one is confronted with the truly neurasthenic woman and one is compelled to use all one's tact and knowledge to prevent a transition into the further alienistic states of "phobias," melancholia, hysteria, hypochondria—in short, some type of actual or borderland insanity.

## British Medical Journal.

*March 29, 1913.*

1. The Mucous Channels and the Blood Stream as Alternative Routes of Infection. C. J. Bond.
2. The Genital Functions of the Ductless Glands in the Female. W. Blair Bell.

3. The Esthetics of Medicine. C. J. Macalister.
4. Henoch's Purpura with Intussusception; Laparotomy; Recovery. S. Barling.

1. **Mucous Channels and the Blood Stream as Alternative Routes of Infection.**—C. J. Bond has shown that small particles of an inert substance like indigo, which is insoluble in the bodily secretions, may under certain circumstances be carried along mucous canals and gland ducts in a direction opposite to that taken by the normal secretion. If non-motile particles of indigo can travel in this manner along mucous surfaces, then it is reasonable to suppose that the organisms of disease can also be transported from the mucous orifices of the body up the intestinal canal and urinary canals to the recesses of organs like the kidney and gall-bladder. Three conditions are necessary for this transportation of foreign particles in a direction opposite to that of the flow of secretion. (1) There must be a reversed mucous current along the channel. (2) There must be some stasis of the normal secretion or excretion in the duct. (3) Or a fistulous communication must exist at the proximal end of the canal by which the contents can reach the surface of the body without passing down the duct. The existence of mucous current so accounts for the carriage of foreign bodies and organisms upward along the bowel. Thus may be explained the close association between appendicitis and duodenal ulceration. There are grounds for thinking that if the condition of the whole intestinal tract were fully investigated in cases of gallstones and gall-bladder disease, not only would appendicular and ileocolic complications be found in many cases, but in some the whole lining mucous membrane would show signs of widespread catarrh of infective origin. There are presented by the author reasons for thinking that, when an organism like the *Bacillus coli* reaches the pelvis of the kidney by ascending the urinary tract, it produces symptoms and effects which differ from those produced by the same organism when it reaches the kidney by way of the blood stream. It is suggested that these differences depend on the fact that the organism is undergoing adaptation to a mucous and urinary environment in the one case and a blood or lymphatic stream environment in the other.

2. **Genital Function of Ductless Glands in the Female.**—W. Blair Bell describes the influence of the ovaries on the uterus, on the general metabolism, and on the rest of the principal organs of internal secretion. With regard to the influence of the ovary on the uterus, it is noted that to some extent the implantation of the fertilized ovum is assisted, possibly by the secretion of the corpus luteum. Further, the activity of the uterus is maintained and regular contractions are promoted, probably by the secretion of the interstitial cells. In the general metabolism the total ovarian secretion appears to promote the excretion of calcium and the retention of phosphorus. And lastly, total ovarian insufficiency arouses increased activity in all the remaining ductless glands.

3. **Esthetics of Medicine.**—C. J. Macalister directs attention to the fact that beauty is a corollary of health, and just as the wiping out of smallpox has done so much to preserve the beauty of the race, in like manner attention to the treatment of those diseases which tend to promote permanent organic changes and deformities and cripplings, added to appropriate measures taken for their prevention, will do much to further the esthetic aspect of the work of the medical man.

4. **Henoch's Purpura with Intussusception.**—S. Barling in reporting a case illustrating this association, alludes to the difficulty of making a differential diagnosis between the two conditions. In intussusception during the first twenty-four hours the belly wall is commonly flaccid, mobile, and not tender in the intervals between the attacks of pain, becoming hard and fixed when the child writhes under an attack of colic. In Henoch's purpura the condition of the abdominal wall often presents exactly similar features; not infrequently, however, the belly is distended, tender, or rigid from the onset of the illness, a condition almost unknown in intussusception. Among the local signs of intussusception the presence of the characteristic sausage-shaped tumor, lying usually on the arc of a circle with its center at the umbilicus, can generally be found. Cases in which an intussusception is suspected, but in which no tumor is felt, should always be examined under anesthesia in which case not more than one in twenty will fail to exhibit the typical tumor. A tumor may be present in Henoch's purpura, being caused by hemorrhage into the mesentery, a coagulum lying in the lumen of the bowel, or a massive interstitial hemorrhage into the bowel wall; and though such tumors will usually lack the characteristic shape and feel of an intussusception tumor, yet it is evident that occasionally the similarity may be so great as to lead to laparotomy being performed. To sum up: When purpuric manifestations in the skin or joints are absent, the most important points in making a differential diagnosis between the two conditions are a reliable history, a careful examination of the urine, and the presence or absence of the characteristic lump in the abdomen when examined, if necessary, under anesthesia.

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## Berliner klinische Wochenschrift.

*March 24, 1913.*

**Stasis Reaction in Arteriosclerosis.**—Hertzell believes that he has discovered a reaction of diagnostic value in arteriosclerosis. If with the patient in repose the blood circulation in both legs and one arm is interrupted, there results a moderate increase of blood pressure in the free arm. But while in normal subjects this increase averages only about 5 mm. Hg., in arteriosclerotics it may amount to as much as 60 mm. and even more. This phenomenon naturally explains itself as follows: Arteriosclerotic blood vessels have lost to a greater or less extent their native property of compensating for vascular disturbances. When more blood is forced into the vessels of a given area these no longer yield, and being rigid the tension must rise. The fact that this rise may vary notably with the case may be utilized to determine the actual amount of vascular damage. A small rise would indicate a certain amount of localized arteriosclerosis, and a maximum rise would indicate total arteriosclerosis. It should also be possible to determine the seat of a localized arteriosclerosis. The positive result of this test furnishes an earnest indication of treatment to prevent if possible the extension of the process. Hydrotherapeutic resources which are indicated only when the power of vascular compensation is retained are naturally contraindicated in patients who react positively.

**Athletics and Stimulants.**—Hueppe concludes his interesting comments on this subject. In reference to the demand in physical exertion for quickly oxidizable carbohydrates, he states that but for collateral ill effects alcohol would be superior to all forms of the latter. It exerts both a toxic and narcotic effect. It can therefore be used only for a brief period. Its stimulating action is real, and not merely a narcotizing action upon the nerves which feel the exhaustion of exercise. Alcohol is naturally not adapted to training, for as a stimulant it antagonizes the aim of the latter to economize vital force. The place of alcohol in athletics is only when a stimulant is really needed, and this can only be during the actual contest. There is a practical distinction between alcohol *per se* and alcoholized drinks, for beer and wine contain much nutritive material outside of their alcohol content. Japanese wrestlers, like those of classic European days, are overnourished by combinations of fattening food and wine.

These facts illustrate the teaching sometimes heard that gluttons are saved from their excesses by drinking, and hard drinkers from alcoholism by overeating. The author likewise revives another old dogma that a man gone stale from overtraining may be restored to equilibrium by drinking plenty of strong beer for a short time. When alcohol acts as a muscle stimulant its effects are first noticeable in groups of muscles of no special importance in athletics. Scheffer's experiments on himself appear to show that alcohol first increases, then diminishes the excitability of the nervous system, including the nerve centers, paths, and terminal muscle filaments. The prescription of alcohol to soldiers under certain conditions is no new thing. Even the mythical Odin permitted drink only when a march was finished. This censorship on the use of alcohol was, however, due largely to its demoralizing effects on discipline, including the treatment of civilians, and the conquered and subject peoples. Heroes, like Odin and Hector, were afraid to drink before a battle.

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### Münchener medizinische Wochenschrift

*March 25, 1913.*

**Is Beriberi Endemic in Europe?**—Schüffner discusses this interesting question, interesting of course to Americans as well, at much length. In 1897 he began the study of the disease in Sumatra, where it prevailed epidemically with high mortality. In Europe such a disease could not escape observation in epidemic incidence. In Sumatra, however, the disease occurs at present in sporadic form only, and it is of course conceivable that it might thus occur in the culture lands where sanitation may be trusted to hold it in check. All the data obtained during recent years point to an alimentary origin for this affection, which would also favor the appearance of the latter as an exotic, in accordance with the modern tendency of disease in general to become universal in some degree. Beriberi differs but slightly from our polyneuritis. Typhoid and dysentery patients in Sumatra, once nourished very largely with rice, developed beriberi with shocking regularity. This no longer occurs under a changed diet. The important task at present is to study European polyneuritis with especial reference to an alimentary origin, and to cumulative cases. Conolly and Norman have described petty epidemics of polyneuritis in Irish insane asylums. Thus in 1894 out of 1503 inmates 174 developed the disease and 25 of these died. A similar episode occurred in France in 1898 (Chantemesse and Raymond) while even in the United States one was reported in 1896 by Bondurant of the State Insane Hospital, Alabama. No rice was used at Dublin and information on this point is defective in the other episodes. Of ordinary or secondary polyneuritis in Europe, numerous cases follow typhoid and other acute infectious diseases and are commonly ascribed to the bacterial toxins. These may be brought into relationship in part with an alimentary origin, as may also the polyneuritis of pregnancy and alcoholism. The author believes that beriberi may sometimes occur with the clinical picture of Landry's paralysis. He claims no originality in his thesis, for Oppenheim and others have speculated in a like manner on the existence of European beriberi.

**Successful Treatment of a Recurring Sarcoma of the Ovary.**—Seeligmann extirpated a sarcoma which extended from the lesser pelvis (which it filled) to the vault of the diaphragm. Compressing the spine it had caused a slight gibbosity. When the author first prepared to operate, because of the extremely forlorn state of the patient—to whom slight relief would have meant much—the outlook after preliminary laparotomy was so poor that he closed the external wound. Morphine alone gave some relief for the next week, after which a sudden improvement in the general state led the author to further attempts in the direction of prolonging life. From precedent arsenical remedies were first thought of and one of the newer synthetics was injected intravenously. The Röntgen rays were exhibited at the same time. The results of the combined treatment were astonishing. The growth slowly dwindled in size, and the general condition improved at the same time. An *x*-ray photograph showed that metastases had actually occurred in the last dorsal and first lumbar vertebræ, although the treatment had seemingly arrested their progress. Eight weeks after the inauguration of the treatment the patient was shown to the Hamburger Aertzliche Verein as practically well. The author, while admitting that equally desperate cases of sarcoma may have been cured in various ways, advocates the use of the same measures in all inoperable cases not only of sarcoma but of carcinoma as well.

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### Deutsche medizinische Wochenschrift

*March 20, 1913.*

**Parasyphilis.**—Schoenborn and Cuntz discuss the question of what manifestations should receive this title. Fournier's definition, never unanimously acceptable to practitioners, is no longer tenable. This authority would use the term for any condition closely paralleling syphilitic manifestations even in case of occurrence in nonsyphilitic soil. The negative criteria comprised refusal to heal under mercury and iodine. We now, of course, exclude syphilis by biologic tests; and refusal to heal under certain remedies no longer possesses the old significance. Baginsky, writing of infantile syphilis, would do away with the term parasyphilis, and this advice also holds good for all ages. Moreover, the word is superfluous from any viewpoint. The more recent attempt to limit parasyphilis to tabes and paralysis on the ground that these affections are due to impregnation with antibodies is uncalled for; as Danlos states, the original syphilis is still present in these affections. The authors believe that the time is not far distant when these two neuroses will simply be spoken of as syphilitic outright. The authors conclude by appending a striking corroboration of his thesis which reached him after his article had gone in type. This was Noguchi's photograms of spirochetes in the neighborhood of the cortex in general paresis. This find should clinch the matter.

**Cholesterin Content of Blood in Disease.**—Bacmeister and Henes have shown that this content is diminished by cholesterin-poor diet, age, emaciation, poor general condition, and especially in all fevers. The content is increased in cholesterin-rich diet, in all severe anomalies of metabolism—diabetes, obesity, nephritis—and arteriosclerosis. In convalescence from typhoid we see an increased content develop which persists for months. This cannot be said of convalescence from other severe fevers, hence its rationale is obscure. It is probable that all cholesterin in the body is exogenous and it is certain that it is not a product of nerve catabolism. The fluctuations in blood content depend in some manner on the behavior of the cholesterin in the tissue cells.

**The Adrenals and Fat Metabolism.**—According to Landau the cortex of the adrenal shows an increase in the total content of lipoids under the most varied conditions, which have in common one of two features—lipoid retention or increased lipoid formation. There is a corresponding condition characterized by poverty of the cortex in lipoids. The variations of this organ in lipoid content result from primary changes in the same content in other organs. They appear to play no part in the nutritional state of the body. The function of the adrenal cortex is not in any way bound up with the genesis of lipoids, but with the medullary portion and sympathetic.

## Insurance Medicine.

**Methods of Uranalysis Applicable to Insurance Examinations.**—Stephen H. Baxter says that while the average practitioner who is also doing insurance work may not be able to carry out the numerous investigations of gastric juice, of the blood, of various exudates, etc., in the urine he finds an easily obtainable secretion which can be accurately tested by means of rather simple methods. The importance of such examination cannot be overestimated, for diseases of the kidney, affections of the cardiovascular system, diseases of metabolism, and chronic and acute suppurations may all be reflected in the urine. The cursory physical examination for insurance frequently does not amount to much, because of the lack of time and the unwillingness of the applicants to undress, etc. The personal history of the applicant may be not only untrue but also misleading. Often then the only objective findings are those obtainable from the examination of the urine.

Yet such an examination is frequently made in a manner that renders it useless. Thus of 119 cases of albuminuria as detected in the home office of Baxter's company, the condition was diagnosed by the local examiners in only 41, or in 34½ per cent. In five cases it was reported present but was not found at the home office. Most of the cases showed casts, etc., and thus were very important from the standpoint of proper selection. Baxter's company has adopted some standard tests for examination of the urine and these he gives in some detail. For preserving specimens in transit, boric acid is recommended, for it does not interfere with the tests. It is used in the proportion of 2½ grains per ounce, a tablet of this weight being put into the specimen bottle when it is sent out. Such tablets must be specially made, for those from the druggists usually contain starch. The specimen is always filtered. There is nothing gained by attempts to get rid of very small amounts of turbidity by using infusorial earth, talcum, etc., for these methods lead to the loss of the small amount of albumin as well; large amounts can be detected in the presence of some turbidity. The heat test is the one of choice, because of reliability and simplicity. Ulrich's technique is best. The reagent used is a saturated solution of common salt, acidified with 1 per cent. acetic acid. A few c.c. are poured into a test tube and boiled. The urine is then allowed to flow over the hot acid brine from a pipette, forming a sharp line of contrast. The hot brine will coagulate the albumin, while the acid will prevent the precipitation of the phosphates. The presence of salt prevents the precipitation of "nucleo-albumin." Practically, the phosphates are sometimes precipitated by this method, and it is best to add to the urine as a routine measure about one-sixth volume of the acid salt solution before applying the test. Albumose is the next important substance. Its presence may be detected by repeating the test just described without heating the salt solution. If albumose is present, a ring will form at the point of contact as before. Proper light is of great importance. On a bright day diffused sunlight is inferior to direct, and on cloudy days artificial light must be employed. A laryngoscope lamp with condenser gives the best light. The Heller test with cold nitric acid is not as satisfactory as the above technique.

Glucose is the next important pathological constituent. In doing the familiar tests for sugar, albumin must be removed if present in more than mere traces. Ingestion of chloral hydrate, chloroform, morphine, camphor, and other drugs of that group may be followed by a positive and therefore misleading reaction; sometimes the same takes place after the use of salicylic acid, sulphonal, benzoic acid, salol, santonin, copaiba, and acetphenetidine.

Such sources of error may sometimes be eliminated by diluting the urine. If but a small amount of sugar is supposed to be present, only a small amount of copper must be used; otherwise the reaction is not typical. If the reaction is at all ambiguous the fermentation test should be considered the court of final appeal, for no substance found in the urine except sugar is fermentable by yeast with the production of carbonic acid. The sugars that ferment, too, are those found in true diabetes. Thus pentosuria and lactosuria are excluded. The fermentation test should be controlled by adding the yeast to a normal urine, to see how much to allow for any sugar in the yeast, and to a specimen of sugar in solution to prove that the yeast is active. The phenylhydrazin test and the polariscopic tests are not applicable to insurance in the great majority of cases. Microscopic examination of the sediment is of great value, but is usually done at the home office. Such examination usually tells whether the albuminuria is of grave or of little import.—Second Annual Meeting of the Medical Section of the American Life Convention, Sept. 3, 1912.

**Points to Insure Honesty in Insurance Examinations.**—That insurance fraud is not, ordinarily, very frequently practised, is the opinion of Dr. Lister, in addressing the Life Assurance Medical Officers' Association, in London, on May 1, 1912. To be successful, fraud necessitates what amounts to a conspiracy on the part of the applicant, possibly an inspector of agents, a doctor, or a lawyer, and a couple of friends. A collusion of this size can rarely be carried through. Lister disapproves of the examination for insurance by the proposer's own medical attendant, and cites a case where a Lady Bountiful of a district, apparently finding it inconvenient to go to London for her examination, asked permission of the Head Office to allow her local medical attendant to do it. This was granted; the woman was passed, and eighteen months later, she died with uterine cancer, proving a heavy loss to the company. No knowledge could be obtained as to whether the local attendant was in the secret or not; or whether the applicant herself had a knowledge of her condition. Fraud sometimes lies in intent, rather than in actual commission. The local medical attendant makes a better medical referee than examiner, often elucidating facts not clearly brought out by the applicant himself. Some diseases, looked upon in the past with decided severity by insurance companies, would have to be regarded in a broader and much more lenient light in the future. Phthisis, for instance, is one, the prognosis of which is steadily improving as a social disease; and the companies are dealing with masses and classes, and not individuals. This is not meant for an excuse to gloss over serious symptoms, known to be of much importance by the examiner. The question of drugs is a vital one, for it often helps in clearing up an otherwise doubtful case. An uncertain sugar reaction has been explained and cleared up by the applicant himself announcing, after having been questioned, that he was taking codeine pills.

# Book Reviews.

The Practice of Urology, a Surgical Treatise on Genitourinary Diseases, Including Syphilis. By Charles H. Chetwood, M.D., LL.D., Professor of Genitourinary Surgery, New York Polyclinic; Visiting Genitourinary Surgeon to Bellevue Hospital; Special Consulting Surgeon to J. Hood Wright Hospital, St. John's Hospital (L. I. City), Nassau Hospital (Mineola), White Plains Hospital; Member American Association of Genitourinary Surgeons; American Urological Association; L'Association Internationale d'Urologie, etc. Price $5.00. New York: William Wood and Company, 1913.

The latest of a series of good books on any special department of medicine unquestionably profits by the omissions and errors of its predecessors. The author, however, bears a compensatory responsibility of presenting the new facts and theories as well as the discarding of obsolete and impractical procedures. This work fully meets all of these conditions. It contains 42 chapters covering more than eight hundred large octavo pages. Within this comparatively small space every urological topic is discussed and sufficient attention is accorded to those of importance. It is not possible to praise one section more than another, since the book is so well balanced that it is uniform in excellence. The author directs special attention to the modernity of those chapters on the local treatment of gonorrhea, the application of serum diagnosis and serum therapy, advancement in cystoscopic and functional renal diagnosis, various features in surgical technique, and the latest on salvarsan therapy. The advice on post-operative treatment merits praise, since it contains many instructions and suggestions of great value to less experienced operators. Dr. Chetwood is one of the few authors who admit the possibility of diagnosis of certain genitourinary diseases by differentiation of epithelia in the urine sediment. Unfortunately he has omitted the scale of enlargement in the plates selected which materially decreases their teaching value. On page 24 appears the description and illustration of Guyon's mandarins (illy termed "catheter directors") for soft or semisolid catheters, but the most useful curve for the relief of total retention from prostatic hypertrophy, that of a semicircle, is not mentioned. On page 122 Luys' segregator is described and illustrated, yet Cathelin's, which is so totally different in principle that it possesses its own field, is omitted. Dr. Chetwood does not accord full credit to his confrères for their contemporary conception and introduction of mechanical devices, notably the modern urethroscope. The closing chapter on syphilis is very condensed, so much so that it reads like a task of duty rather than one of pleasure. It nevertheless contains a wealth of information. His technique of the intravenous injection of salvarsan is simpler but more dangerous than that of Assmy, who safeguards against abscess by allowing the salt solution to flow into the vein both before and after the salvarsan solution. Those who expect a urological encyclopedia in one volume will be disappointed, but readers who are content with crisp, authoritive information covering the wide field of urology will welcome this work. The literary style is that of an experienced writer and appeals through the delightful scarcity of personal pronouns.

Cardiovascular Diseases: Recent Advances in Their Anatomy, Physiology, Pathology, Diagnosis, and Treatment. By Thomas E. Satterthwaite, A.B., M.D., LL.D., Sc.D.; Consulting Physician Post-Graduate, Manhattan State, Orthopedic, Babies', Champlain Valley Hospitals and Northeastern Dispensary; Member American Therapeutic, State and County Medical Societies, American Medical and Greater New York Medical Associations, New York Academy of Medicine, Harvey Society; Life Member New York Pathological Society; Honorary Member Washington (D. C.) Medical and Surgical Society; First Lieutenant Medical Reserve Corps, U. S. A. Price, $3.00. New York Lemcke and Buechner, 1913.

This work, fully described in the sub-title, presents in attractive form the results of the labor of many diligent and capable men. Among the anatomists, Keith, Flack, Tawara; of the physiologists, Gaskell, Einthoven, Lewis, Cushny, and from the clinicans, Mackenzie, Hering, Janowski, and not omitting the author, should be cited as having made substantial contributions to the better understanding of a class of diseases second only to tuberculosis in their fatality. The results of laboratory and clinical observations of this last decade have been recorded in numerous journals; here we find all that is of importance presented in attractive form, so that this book is a fitting supplement to the "Diseases of the Heart and Aorta" published by the author in 1905. The value of the volume is enhanced by the large number of illustrations of instruments and tracings produced by them, and their use is fully explained. Although much doubt as to the interpretation of graphic pulse tracings must exist until the normal is sharply defined and the abnormal classified, yet for permanency and comparative study these methods constitute a real advance and will likely lead to more accurate knowledge. Of the chapters which appeal more strongly to the physician, those on the high frequency currents in arteriosclerosis, uses of carbon dioxide, and the cardiovascular thromboses are unusually helpful. The mobility and malpositions of the heart can nowhere else be found so succinctly presented as here. With the author's practical classification of the arrhythmias, myocardial diseases, and malignant endocarditis, not only the clearing up of our knowledge but distinct advance in the management of these conditions has been accomplished. From the study of this work not only the general physician but as well those working in the narrower field will acquire valuable information, critically presented by a brilliant exponent of diagnosis and treatment.

Surgical Operations with Local Anesthesia. By Arthur E. Hertzler, M.D., Surgeon to the Halstead Hospital, Halstead, Kan., and to the Swedish Hospital, Kansas City, Mo. Illustrated. Price, $2.00. New York: Surgery Publishing Company, 1912.

The object in presenting this book to the profession is to furnish in a convenient form the technique of some of the commoner operations that can be done in a satisfactory manner under local anesthesia. The author has had in mind the needs of the general practitioner and the surgeon who works without the advantages which accessibility to a hospital affords. For this reason, some of the major operations have been omitted which require considerable experience in the use of local anesthetics. The book is unusually well illustrated.

Outlines of Psychiatry. By William A. White, M.D., author of "Mental Mechanisms," Superintendent Government Hospital for the Insane, Washington, D. C.; First Lieutenant, Medical Reserve Corps, United States Army; Professor of Nervous and Mental Diseases, Georgetown University, Washington, D. C.; Professor of Nervous and Mental Diseases, George Washington University, Washington, D. C.; and Lecturer on Insanity, U. S. Army and U. S. Navy Medical Schools. Fourth Edition. Revised and Enlarged. Price, $3.00. New York: The Journal of Nervous and Mental Disease Publishing Company, 1913.

It is not necessary to add anything to the favorable opinions which the previous editions of this work have evoked in these columns. The present edition contains thirty-six more pages than the last, the additional matter being found in the chapters devoted to the description of the psychoses, and consisting also of the chapter describing the Binet-Simon scale for measuring intelligence. One excellent feature of the present edition is the inclusion of extracts from case histories. This greatly enhances the value of the book from the didactic viewpoint. The chapter on general symptomatology may be cited as an example of the author's clear exposition of the subject matter and of his thorough presentation of the latest concepts in psychopathology. Among the topics discussed in this chapter are clouding of consciousness, dream states, disorientation, flight of ideas, Ganser's symptom, and the complex. The Binet-Simon tests are given in full. The entire work represents an admirable exposition of modern psychiatry.

Minor Surgery. By Leonard A. Bidwell, F.R.C.S., Senior Surgeon to the West London Hospital, Dean of the Post-Graduate College, Consulting Surgeon to the Blackheath and Charlton Hospital and to the City Dispensary. Author of "Handbook of Intestinal Surgery." Second Edition, Revised and Enlarged. With one hundred and twenty-nine illustrations. Price, $3.75. London: University of London Press, Hodder and Stoughton, and Henry Frowde, 1913.

This book makes no pretence to be a complete treatise on surgery, but it gives clear directions for the management of everyday surgical work. It should prove of use to the practitioner who has mainly office work and minor surgery to attend to. A feature of the volume is that very few alternative methods are given; the author selects what he believes to be the best, and the reader is saved the difficult task of making a choice. The book is authoritative, and is based upon the personal experience of the author, and it is well printed and contains a sufficient number of serviceable illustrations.

Guide to Midwifery. By David Berry Hart, M.D., F.R.C.P.E. Lecturer on Midwifery, School of the Royal Colleges, Edinburgh. Formerly Obstetric Physician, Royal Maternity and Simpon Memorial Hospital, Edinburgh. Formerly Gynecologist to the Royal Infirmary, Edinburgh. Consulting Gynecologist, Leith Hospital. Sometime Examiner in Midwifery and Gynecology in the Universities of Edinburgh, Oxford, Liverpool, Birmingham, and to the Royal College of Physicians, Edinburgh. Honorary Fellow of the American Gynecological Society. Honorary Fellow of the Berlin Obstetrical Society. Corresponding Fellow of the Leipzig Obstetrical Society. Honorary Librarian to the Royal College of Physicians, Edinburgh. With four Illustrations in color and two hundred and sixty-eight diagrams. Price, $6.00. New York: Rebman Company, 1913.

This new book on obstetrics is distinguished by an individuality and independence of observation which are characteristic of the author, and which are not often met with in medical textbooks of the present day. The work is divided into two parts. The first part deals succinctly with the subject of obstetrics in general; and to the several chapters there have been added instructions as to what should be done, and what specimens should be examined in order that the student may thoroughly understand what he has been reading about. The second part consists of lengthy notes on various subjects, which are not absolutely essential, but which certainly add to the interest of the scholarly student. There is in this part a chapter on Evolution in Obstetrics, with an explanation of Mendel's experiments and a discussion on Mutation and Variation. Another section is on Internal Secreting Glands in relation to Obstetrics. The author has exercised a commendable restraint in the matter of illustrations. The volume is sufficiently illustrated, but it is not over illustrated; and certainly no one would buy the book for the sake of the illustrations alone. The text is the important part, and it is admirable. There is a bibliography of about twenty pages which, while not complete, cannot fail to be of great value. Here, as well as throughout the volume, the author makes reference to all that is worth while in the literature of the subject; and American authors and publications receive their due recognition, a feature not always noticeable in transatlantic books. This volume is stimulating, and should prove of interest to teachers as well as to students and practitioners.

General Chemistry of the Enzymes. By Hans Euler, Professor of Chemistry in the University of Stockholm. Translated from the revised and enlarged German edition by Thomas H. Pope. First Edition. First thousand. Price, $3.00. New York: John Wiley & Sons, 1912.

The present volume is founded on two reports which were contributed to the *Ergebnisse der Physiologie* for 1907 and 1910, but the original German edition has been considerably enlarged and rewritten, and it is from this that Mr. Pope has prepared his translation. The subject is one of the most highly technical with which investigators are dealing, and the book therefore does not lend itself to review in brief, but it may be said that while primarily intended for the purposes of the research worker it also contains much information of directly practical value to the medical profession. This is particularly the case in regard to the sections dealing with the behavior of the digestive ferments and the methods for estimating them quantitatively in stomach contents and stools. The list of chapter headings includes the special chemistry of the enzymes; physical properties of the enzymes; activators, paralyzers, and poisons; chemical dynamics of enzyme reactions; influence of temperature and radiation on enzymic reactions; chemical statics in enzyme reactions; enzymic syntheses; specificity of enzyme action. The closing chapter contains working directions for carrying out many of the methods required in the study of the enzymes as well as tables for determining the commoner sugars by Bertrand's method. The book is the latest and fullest on the subject and is therefore essential to all those interested. A special word of congratulation is due the translator for the success with which he has carried out what must have been a task of more than usual difficulty.

The Mechanistic Conception of Life. Biological Essays by Jacques Loeb, M.D., Ph.D., Sc.D. Member of the Rockefeller Institute for Medical Research. The University of Chicago Press, 1912.

Dr. Loeb has collected in this volume several essays written on different occasions, but all characterized by the general tendency "to analyze life from a purely physicochemical viewpoint." These essays deal with the well-known work of the author in artificial fertilization of the lower orders of animals, in the study of the rôle of environment upon morphological structure and behavior of animals, and in the discoveries of the important rôle of salts in the preservation of life of simple animal forms, and, by inference, of the simple cells composing higher organisms. Dr. Loeb is frankly a materialist and thinks that the contents of life, "the wishes and hopes, efforts and struggles, and unfortunately also disappointments and suffering" are amenable to physicochemical analysis. He points out how numerous apparently "psychic" phenomena of lower life have been traced to the effects of physicochemical influences and sees no reason why such explanation will not be finally found for more complex actions of higher organisms. His own work on the subject is probably the most significant, and the volume before us, therefore, forms an important landmark. The brief sketch of its subject given above should attract numerous readers among medical men.

New Aspects of Diabetes. Pathology and Treatment. By Prof. Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Lectures Delivered at the New York Post-Graduate Medical School, New York. Price, $1.50. New York: E. B. Treat & Company, 1912.

Dr. von Noorden has added another small monograph to his interesting and valuable series published in English by Treat & Company. The present number is amplification of his presentation of diabetes, as first discussed in a monograph entitled "Diabetes Mellitus." It consists of four chapters, headed respectively "The Source of Sugar," "The Rise in Caloric Production and Its Causes," "The Control of Sugar Formation and Its Disturbances: Theory of Diabetes," and finally "The Therapy of Diabetes." An additional article is devoted to acetonuria. The booklet supplies much that is instructive, illustrative cases being given from Dr. von Noorden's extensive experience with the disease in question. Numerous practical hints on therapy are scattered through the text, those on the interpretation and treatment of acetonuria being especially valuable. The monograph is to be strongly recommended to the internists.

Golden Rules of Surgery. Especially Intended for Students, General Practitioners, and Beginners in Surgery. By Augustus Charles Bernays, A.M., M.D., Hdlbg., M.C.R.S., Eng. Life member of the German Society for Surgeons of Berlin, Chief Surgeon Lutheran Hospital, and for Twenty Years Professor of Anatomy and Surgery in St. Louis, Mo. Second Edition Revised and Rewritten by William Thomas Coughlin, M.D., Assistant Professor of Surgery, Chief of Clinic, St. Louis University Medical School, St. Louis, Mo. Price $2.25 net. St. Louis: C. V. Mosby Company, 1913.

The entire absorption of the first edition made it necessary to issue the present one. Its enlargement and elaboration by the junior author has made it possible to cover the entire field of surgery in a thorough and systematic manner, at the same time preserving the character and charming style that made the first edition of this book popular. In the appendix are to be found the rules in force in the author's service at St. Louis University (Rebekah) Hospital, which pertain to preoperative treatment (general and regional) and postoperative treatment; also rules for dressing patients and the keeping of records.

This little volume will bear reading and re-reading as it well sets forth the fundamental truths of surgery and gives a bird's eye view of the science and art of surgery.

A Practical Manual of Venereal and Generative Diseases, Spermatorrhœa, Impotence, and Sterility in Both Sexes. By Gerald Dalton, Late Assistant Surgeon St. Francis' Hospital and Lecturer to Nursing Staff; Assistant to Skin Department, Charing Cross Hospital; Lecturer on Ambulance, London County Council; Member British Medical Association; Member W.L. Medico-Chir. Society; Hon. Sec. Assoc. Physicians and Surgeons. Author of "Gleet and Chronic Diseases of Prostate;" "Modern Treatment of Gonorrhœa;" "The Aix La Chapelle Treatment of Syphilis," etc. Price 4s. net. London: Henry Kimpton, 1913.

In compiling this little work of 156 pages it is the author's primary intention to bring, in a practical and concise form, the more modern forms of treatment of a most important branch of medical science which unfortunately receives too little attention and study. He points out that the importance of a rational and scientific basis for treatment of these common, but painful and often most intractable maladies, cannot be overestimated.

# Society Reports.

## MEDICAL SOCIETY OF THE MISSOURI VALLEY.

*Twenty-fifth Semi-Annual Meeting, Held at Kansas City, Missouri, March 20 and 21, 1913.*

THE SECOND VICE-PRESIDENT, DR. B. T. QUIGLEY, MOUND CITY, MISSOURI, IN THE CHAIR.

**Genital Tuberculosis in the Female.**—Dr. W. O. HENRY of Omaha stated that abortions, gonorrhea, and other inflammations, as well as all injuries or contusions and a general rundown or anemic condition might be predisposing factors in the origin and development of genital and peritoneal tuberculosis. We should be more careful and thorough in examinations of cases lest we overlook the true conditions, at the time when they were most amenable to treatment. Our present-day duty and privilege of helping to prevent and cure these cases, as contrasted with those of our predecessors, were so great that it behooved us to wisely safeguard the public by teaching prevention and encouraging the afflicted by a favorable prognosis, unless other serious complications were also found.

**Management of Genital Tuberculosis in the Female.**—Dr. PALMER FINDLEY of Omaha pointed out that genital tuberculosis in woman was rarely a direct cause of death. The fatal issue was usually determined by a primary lesion in the lung or bowel. In at least fifty per cent. of cases there were some symptoms directly chargeable to the tuberculous lesion in the genital organs. It follows that in fully half the cases there was no urgent indication for operative interference. Inasmuch as genital tuberculosis was rarely primary we must discriminate, if we could, between the symptoms directly due to the primary lesion and those due to the secondary lesion in the genital organs. The symptoms referred to the genital organs would usually yield to palliative measures. A radical operation was rarely justified for relief from symptoms caused by genital tuberculosis. There was danger in operative interference from the awakening of a latent primary focus, from the high primary mortality in these cases and from the possible unnecessary sacrifice of organs, inasmuch as spontaneous healing was a possibility as in tuberculosis elsewhere in the body. In tuberculous peritonitis the cause of death in 90 per cent. of cases was chargeable to the primary focus. In operating for tuberculous peritonitis it was well to remove the tubes when infected, in order to cut off the source of supply to the peritoneum. The utmost conservatism should be exercised in dealing with ovaries and uteri in young women. The exudative type of tuberculous peritonitis was alone favorable to operation. One should not operate in the presence of a fever or an active primary focus in the body. Medicinal and hygienic treatment was not to be underrated in the management of these cases. In the absence of severe symptoms directly referred to the lesion in the genitalia or peritoneum operative measures should give way to the usual hygienic measure.

Dr. H. C. CROWELL of Kansas City, Mo., said in a large percentage of cases of tuberculosis of the genital organs the symptoms were very acute and pronounced, so far as his observations went. Whether the disease caused death immediately or not was probably open to question, but ultimately the majority of these cases, even with a local tuberculosis in the pelvis, succumbed, as did patients with other forms of the disease. His experience had been limited to the cases with pelvic manifestations. He had had quite a number of cases in which there was no evident involvement of the lung, and operative procedure had effected a perfect cure, and the patients had recovered without secondary involvement of other organs. He had had other cases of tuberculosis of the kidneys in which he was able to discover tubercular foci outside of the kidney, and later those patients succumbed to a general tuberculosis. Some fifteen years ago a woman, 26 years of age, unmarried, came to him with what appeared to be a pyosalpinx. Examination of the discharge from the uterus did not demonstrate satisfactorily the nature of the infection; but in opening up he found large abscesses and ulceration in the posterior surface of the uterus, and so extensive was the suppurative process that he did a hysterectomy, cleaned out everything thoroughly, and the woman made a perfect recovery.

Dr. HENRY, in closing, said it would be a mistake to leave an active focus of tuberculosis in the pelvis or in any of the pelvic organs and expect by local treatment to get rid of it. Removal of the local focus was essential to the patient getting well.

**The Surgical Colon.**—Dr. A. L. BLESH of Oklahoma City said the surgery of this condition consisted in the restoration or establishing of colonic continuity. This might call for anything in the way of an operation from the simple severing of a constricting band to an ileosigmoidoscopy, sometimes with, sometimes without, resection. It was manifestly impossible to treat these conditions by any rule of thumb procedure. But there were a few fixed features connected with the embryology of the organ that, if borne in mind, would assist materially in guiding the surgeon. 1. The location of the most fixed points in the colonic circle, viz., splenic and hepatic flexures. 2. The termination of the ileum, for the reason that here was found normally the shortest ileal mesentery. 3. The cecum (cecum mobile of Wilms). 4. Diverticula. He desired to emphasize the statement that not all the embryological deviations or reversions of the colon were to be considered surgical by any means. Indeed, even where we were groping our way surgically we could not as yet be dogmatic.

**The Rôle of Tonus in the Digestive Canal.**—Dr. JOHN M. BELL of St. Joseph, Mo., stated that atony of the digestive tract existed in all gradations, from a mere slight delay in motility to absolute kinking and retention; it was, therefore, impossible to outline a procedure to restore all cases. The keynote of treatment, except in those cases of more or less acute kinking, was the restoration of normal tone, not merely to the digestive canal but to the body, and came within the domain of medical treatment, not essentially drugging, but rather hygiene, diet, daily habits, and all those measures which tended to restore vitality.

**Diverticulitis of the Sigmoid.**—Dr. ARTHUR D. DUNN of Omaha, after considering the etiology, pathology and reporting five cases of diverticulitis of the sigmoid, emphasized the following symptoms, which, in the absence of evidence to the contrary, were presumptive of a diverticulitis: 1. Alternating constipation and looseness of the bowels in an individual not previously much troubled in this respect, and which were accompanied by fullness, soreness or colicky pain in the hypogastrium. 2. Febrile manifestations and a sharp neutrophilic leucocytosis. 3. Frequency of and pain on urination in the presence of symptoms referable to the lower colon. 4. A palpable tumor mass, usually discovered by rectal examination, often sausage-shaped and extending to the left in close relationship to the sigmoid.

**Membranous Pericolitis.**—Dr. CHARLES RYAN of Des Moines related his personal experience, which had been confined to 12 cases within the past eighteen months, none of which would furnish especial interest for a detailed description except one. This case was a woman, 38 years of age, who presented symptoms of chronic cholecystitis and chronic appendicitis, which was his diagnosis. At operation there was found a well-developed membrane extending from a point about three inches above the caput coli to a point on the transverse colon two inches to the left of the median line; the transverse colon had been raised until it occupied a position approximating the anterior border of the liver, the gall-bladder being covered, and the membrane spreading over the anterior surface of the stomach. The appendix was kinked, the distal end being incarcerated in a well-formed Lane's kink. Simple division of this extensive membrane and Lane's kink, with the application of sterile vaselin to the latter, with appendectomy and cholecystotomy was the treatment. While she was greatly benefited the symptoms did not entirely disappear. The results in 12 cases at the present time were: Completely cured, 4; greatly benefited, 3; showing recurrence to a variable degree, 3, and 2 cases operated within the past week.

Dr. HERMAN E. PEARSE of Kansas City, Mo., emphasized the importance of diagnosis, and then discussed the choice of operative procedures in cases of malformations or deviations of the colon.

Dr. C. C. CONOVER of Kansas City, Mo., recalled the case of a woman who had stenosis three inches to the left of the hepatic flexure, with alternating constipation and diarrhea. She had been treated for neurasthenia for almost four years. She had symptoms of intestinal stenosis. Her case having been diagnosed, the band or pericolic membrane was removed, she recovered, and gained twenty-five pounds in weight.

Dr. HENRY S. MUNRO of Omaha had noticed one thing in common with every method of treatment in the class of cases under discussion, and that was a carefully regulated dietetic regimen, coupled with systematic exercise, must follow the operative procedure, no matter what it was.

Dr. E. W. POWELL of Omaha said that if we could get these cases to the internist early he could make the diag-

nosis and correct the condition before the patient got to the stage of the pathological condition known as Lane's kink, but unfortunately the average patient did not consult the internist or the surgeon early. He went on and lived the way he wanted to until he got into trouble, and then he consulted, first, the interest, who was unable to cure him; he tried every other thing, among them osteopathy, after which the physician got a crack at him and some method was devised of breaking up the band or Lane's kink, whatever it might be. Personally, he thought the simplest operation that would correct the deformity was the one that was ideal.

Dr. JOHN F. BINNIE of Kansas City, Mo., said there were colons of all sorts and peculiar shapes tucked away in all sorts of ridiculous fashions, and yet they worked very well. If there was a mobile cecum and a mobile (lowest) portion of the ileum, we had a loop of intestine which was pretty much in the same condition as the normal sigmoid, and the intestinal work could be carried on very well in that individual; but if we had a fixed ileum near the cecum, and a mobile cecum, then, of course, the cecum could pop around in various directions and produce temporary obstructions. In operating he did not bother about ileal kinks and mobile cecums very much unless he found them combined. In operative work, or in post-mortem work, when he had exposed the cecum and found it mobile, he had looked at the sigmoid and found it plastered down to the abdominal parietes. That, he thought, was usually the case. Whether it was a congenital condition or not, he did not know, but he thought many of these conditions were congenital.

Dr. WILLIAM T. REYNOLDS of Kansas City, Mo., stated that in May last a girl, 14 years of age, had trouble in the right side. He operated on her with the idea that he had to deal with appendicitis. He found the appendix comparatively normal, but there was a membrane at the head of the cecum. There was nothing to be observed in the formation of the membrane upon the colon higher up. After operation she went home and was well for about six weeks. Since then she had been having the same pain as formerly. He operated a second time and found a smooth, white glistening membrane high up on the colon which had formed between May and four weeks ago.

Dr. HOWARD HILL of Kansas City, Mo., said more observation was needed as to what caused these malformations or deviations of the colon. The looseness of attachment of viscera might be responsible primarily for angulation and similar conditions. When a patient had difficulty in propelling the contents of the intestinal tract through to the outer world, if it produced pain and discomfort, that patient would consult a surgeon. There was no use in operating on the cecum alone, as in six or eight weeks these patients got into the same condition they were in before operation. An ileosigmoidoscopy should be done. The difference between an ileosigmoidoscopy and operations upon the cecum and colon was that after an ileosigmoidoscopy the patient got well slowly but remained well.

Dr. M. J. FORD of Omaha cited two cases. In one, on opening the abdomen he found the colon and ascending colon in proper anatomical position, but within an inch and a half of the cecum and caput coli, and extending up over the colon for three inches there was a distinct band running longitudinally across the colon, holding it down. This was released. The other case was a girl, 22 years of age, who had the chain of symptoms which usually accompanied these cases and was treated by various physicians for neurasthenia. On opening the abdomen he found he could not get to the head of the colon unless he broke through a number of adhesions to reach the pericolic membrane which extended clear over, and when he got down to where the appendix was he found it was normal, within a sac, and was not adherent to the tissues around it. The appendix was free, and the pericolic membrane spread over it, with the head of the cecum plastered down upon the parietes.

**Landry's Paralysis.**—Dr. E. M. HUMMEL of New Orleans reported a case of Landry's paralysis in a man, 46 years of age, which gave strong support to the opinion that lowered resistance was the preliminary necessity in the development of the disease, and the agency of psychic depression was again introduced. While no specific organism was likely to be proven the cause of Landry's paralysis, it seems that some condition of toxicity springing out of unwonted virulence of some one of the bacterial flora native to the body and operating under the auspices of lowered resistance would be settled upon as the cause of this insidious, creeping death, for such might it be characterized in its clinical expression.

Dr. A. L. SKOOG of Kansas City, Mo., said the mortality from Landry's paralysis ranged from 75 to 100 per cent. Landry's paralysis was prone to occur in adult life. Children were less frequently attacked than adults. There was a group of acute poliomyelitis cases which might be described as the neuritic type, and in some of these cases beginning as neuritic types the disease might ascend and be called the neuritic plus the myelitis type. Psychic depression and also physical exhaustion had been named as predisposing causes. It was known that with mental and physical fatigue infectious processes were more likely to be engrafted upon the individual. He thought this had been shown in some animal experiments, with no bacilli present. Those who had done laboratory work, especially in the last few years, with acute poliomyelitis thoroughly believed that it was due to some infectious process. Very recently Flexner and Noguchi had reported an organism as the cause of acute poliomyelitis, which they thought they had isolated and cultivated. It was too early to say they were correct, but he was inclined to believe they were. In view of what was known of acute poliomyelitis, that it could be transmitted to monkeys, it was of considerable interest to have a few cases with frank symptoms of Landry's paralysis and attempt to inoculate animals.

Dr. C. R. WOODSON of St. Joseph, Mo., said there could be no question but that there were cases of Landry's paralysis in which there was elevation of temperature and sphincter involvement. Some writers were disposed to believe that the disease was a polyneuritis. However, it had some characteristics which were quite different from the ordinary types of polyneuritis and some types which were very much like it. The symmetrical symptoms were quite like those of multiple or polyneuritis. Oftener in poliomyelitis there was a lack of symmetry. There was no question but that we had a flaccid paralysis in poliomyelitis. With poliomyelitis the arterioles were involved. In Landry's paralysis the spinal ganglion was implicated. According to some authors there was a disseminated myelitis. Again, there was occasional recovery in cases of Landry's paralysis, but he did not recall any author at the present time who said complete recovery followed in cases of disseminated myelitis.

Dr. C. C. GODDARD of Leavenworth recalled the case of a physician who was perfectly well apparently up to a certain evening, when he reached out his hand to take hold of the ear of his dog and found he could not hold it. He tried several times to do so. Then he tried with the other hand to do so and found he could hold the dog's ear all right. The patient was prison physician. After a time he began thinking about his condition and tried to pick up different objects and hold them, but he could not do so. He could move and flex his fingers. The next morning the left arm was paralyzed. The other arm became involved. That day he thought he was bound to get out of bed. He threw himself out of bed and fell to the floor. The speaker was called in and made a diagnosis of Landry's paralysis or acute ascending paralysis. The patient could move his feet in bed that day, but from that time he became completely paralyzed, both as to sensation and motion in his whole body. It started in the left arm, which was unusual, as it generally began in the feet. The mind was perfectly clear; his pupils looked all right at the time he went to bed. He had no pain; he had to be catheterized; he could not pass urine after the second day without catheter. After the fourth or fifth day paralysis of deglutition set in; his pulse became weaker and weaker; he gave a sighing respiration and was dead.

Dr. CHARLES O'NEILL RICH of Omaha reported the case of a postman who was admitted to the hospital complaining of numbness in both feet. He gave a history of sore throat. Paralysis was progressive. At the time poliomyelitis was attracting a great deal of attention and he tried in some way to correlate the two diseases. A diagnosis of Landry's paralysis having been made, he made spinal punctures every six hours and a blood count. His sphincters were intact, and the only thing very noticeable was the ascending paralysis. His blood count during the eleven days he was in the hospital ranged from 8,000 to 16,000. His spinal fluid ranged from 60 to 96. The lymphocytes per c.c. were much the same as in the cases of anterior poliomyelitis reported at the time. He tried to get a monkey for inoculation, but was not successful. Toward the last the lymphocytes in the spinal fluid had increased. He had a Noguchi positive, a negative Wassermann, and negative lues. The majority of clinicians and pathologists considered Landry's paralysis as identical with anterior poliomyelitis, but coming on as it did in adult life, and death occurring at such an early stage, the patient did not get the resulting polyneuritis, but simply a root lesion and ganglion lesion.

Dr. S. Grover Burnett of Kansas City, Mo., said Landry's paralysis involved the muscles of the legs, the trunk, the arms, the respiratory muscles, and the throat muscles, and the story was usually ended. The patient did not die from toxemia but from the want of air. He died because he had become paralyzed so far as respiratory function was concerned. He had seen but one case recover. It was a question whether or not he was correct in his diagnosis. May be he was not, but the patient got well. The disease began in the lower extremities, took the usual course, extended up and involved the throat muscles. The paralysis was progressive from one six hours to another. In desperation he gave dram doses of fluid extract of ergot every three hours. Under the influence of the ergot the disease seemed to be checked; but, on the other hand, it was known that this happened once in a while, and a few patients got well. Possibly this was one of those cases, and that he was mistaken in his diagnosis; but he was a good Missourian, he had to be shown.

Dr. Abraham Sophian of New York City stated that from the studies that had been carried on during the past few years, particularly with reference to clinical and laboratory analyses, the relationship between Landry's paralysis and poliomyelitis had been established, and there was no question but that in some instances Landry s paralysis and poliomyelitis were one and the same disease. Several years ago he studied a large epidemic of infantile paralysis in New York City. During this epidemic he had occasion to see two cases of Landry's paralysis in children. Incidentally the cases of poliomyelitis occurred at all ages, the youngest child being one year old, and the oldest man was 35 years of age. Poliomyelitis was characterized by two great symptoms, first the motor, that is, the paralytic phenomena, and secondly the symptoms of hydrocephalus. Landry's paralysis had both of these symptom-complexes. We had hydrocephalus in all cases of Landry's paralysis. Poliomyelitis might affect any part of the central nervous system. The characteristic feature of Landry's paralysis was the ascending paralysis. The cerebrospinal findings in the two diseases were similar.

**Rheumatism.**—In a symposium on this subject several papers were read in which the various theories as to the etiology of the disease were advanced. The diagnosis of chronic rheumatism, the modern conception of rheumatism, and its treatment were discussed. In the diagnosis chronic disease of the joints was considered a sign of some focal or systemic disease elsewhere in the body. The diagnosis of chronic disease of the joints depended upon establishing the interrelationship between the focal and systemic disease and the changes in the joints. In the cases observed by the authors treatment directed toward these focal or systemic causes produced the best results upon the joint lesions.

**Cancer.**—In another symposium on cancer, Dr. W. L. Brosius, Gallatin, Mo., spoke of the theories of Virchow, Rous, Ross, Wassermann, Loeb, etc., as regards the etiology of cancer. Dr. Joseph C. Bloodgood, Baltimore, pointed out the great danger of incomplete operations for cancer in the early stages; while Dr. Franklin H. Martin, Chicago, discussed the early diagnosis of cancer of the uterus and its surgical treatment. Other papers presented dealt with cancer of the stomach from a medical point of view; prevention and treatment of cancer of the skin; cancer of the colon from a diagnostic point of view; surgery of the axilla in advanced mammary cancer, and the *x*-ray treatment of cancer.

Dr. John F. Binnie of Kansas City, Mo., said that too much abuse had been poured upon the unfavorable statistics after operative treatment for frank malignant disease in the matter of recurrence. He thought other terms should be used. After cutting out disease, if we had a reappearance of the disease within a comparatively short period of time, say after two or three years, it was a true reappearance of the disease, but it was not a recurrence. It meant some disease was left and still continued to grow, but when we had a true recurrence things were somewhat different. If disease appeared again after a lapse of three years why could it not be the original causes of the disease working again on a patient who had shown himself non-resistant to the noxious influence which caused disease, and we had a fresh incidence of the disease, not necessarily a recurrence.

Dr. J. P. Kanoky of Kansas City, Mo., said that where the cancer was very malignant and affected the deeper tissues, the *x*-ray would afford relief, although it might not cure. As regarded superficial ulceration or rodent ulcer years ago he employed the actual cautery or the knife. Within the last few years he had used carbon dioxide snow. It was as efficacious as the cautery, much pleasanter than the knife, and the cosmetic results were superior to both. Superficial cancer or so-called rodent ulcer could be treated by means of carbon dioxide snow with absolute success.

Dr. Henry S. Munro of Omaha believed in every therapeutic measure that would help a patient, but in the consideration of any method of treatment one must see the entire individual, and we could not look upon any particular part of the body alone. Just in proportion as we went into the life of the individual and studied him physiologically and psychologically could we help him by increasing his power of resistance to the onslaught of the parasitic cells.

Dr. H. M. Lyle of Kansas City, Mo., said there were some types of epithelioma which the carbon dioxide snow would cure, but he would not depend too much on it because it was too superficial in its action. In using the *x*-ray there were several things that came up which the individual operator had to watch for in the way of protecting the patient, in knowing how much the individual patient would stand; he meant by this that the dosage should be gradually increased. It had been his experience that it was well to begin with short treatments and give them often until one found just exactly how the patient was going to stand the effect of the *x*-ray. Other radiographers gave one or two large doses of from fifteen minutes to half an hour's treatment. If this was done, he believed one did more harm than any good he accomplished. In regard to thoriamdin paste, which was put out as a radioactive paste, it was the combination of nitric and sulphuric acid in it which acted as a cauterant and hence one got an effect from it. He did not believe, however, there was any thorium in it to give any beneficial results outside the cauterization.

Dr. Rollin H. Barnes of St. Louis did not think we were able to diagnose cancer of the colon sufficiently early to expect the promising results which we could obtain from cancer in some other locations of the body; but we should carefully observe those patients who showed the least indication of trouble in this region and always keep in mind cancer.

Dr. W. O. Henry of Omaha spoke with reference to enlightening the laity about cancer of the uterus, and said that committees had been appointed by various societies in the United States to do what they could to enlighten the people. Physicians who were abreast of the times, who attended regularly city, county, State and national meetings were pretty well informed; but there was a large class of physicians who did not attend these society meetings, and who did not read up-to-date medical journals. It was those men that should be educated as well as the laity, and the way to do it was for every State society to have a publicity committee, backed by the authority of the society, to prepare proper articles for the publication in the daily press and also to be supplied to the weekly papers in every county.

Dr. A. L. Blesh of Oklahoma City wondered how we were going to educate the people upon the cancer question when perhaps nine out of ten of the deep body cancers could not be diagnosed by the physician himself in time to be of any avail whatever to the patient. Only a few days ago he examined a woman sent to him by a brother physician. He found far advanced cancer of the cervix. In operating he found the disease had extended so far out into the sides of the pelvis retroperitoneally that he gave it up in despair and closed the abdomen. How were we going to educate the people to consult physicians for cancer, Dr. Blesh said, when they did not know that the disease existed?

Dr. Donald Macrea of Council Bluffs, Iowa, said this and other societies ought to take a strong stand with regard to a publicity campaign in educating the laity about cancer. In the country the majority of cases of cancer were seen too late to do much, if any, good. The right time to operate on these patients was in the precancerous stage.

Dr. H. C. Crowell of Kansas City, Mo., said if one thing was of greater importance in regard to cancer than anything else it was the education of the people secondarily and the profession primarily. The average physician of the country was better informed on the scientific methods and procedures and the advanced treatment and advanced theories of cancer than he was on the diagnosis. He knew from experience patients were treated and treated by this physician and that physician without a diagnosis of cancer having been made, when patients should have been subjected to some means by which the diagnosis might have been made early enough to eradicate the cancer.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held March 6, 1913.*

THE SECOND VICE-PRESIDENT, DR. WALTER B. JAMES, IN THE CHAIR.

**Devices for Artificial Respiration.**—Dr. SAMUEL J. MELTZER presented this paper. After speaking of the progress made in dealing with temporary failures in respiration and referring to the methods of Schafer and Sylvester, he expressed his preference for the latter method. He stated that he suspected that there were a fairly large number of good medical men who were unprepared to perform either of these methods efficiently. Every medical man should possess the knowledge of and some dexterity in handling life-saving methods in emergencies. In neither the Schäfer nor the Sylvester method could the respiration be kept up sufficiently long to keep the circulation going for hours. Hence a hunt had been made for efficient devices for artificial respiration. Dr. Meltzer said that as he was on the committee appointed by the Bureau of Mines to investigate such devices he was not at liberty to express his opinion of their actual value before the entire committee sent in its report, but he would say that he had been impressed with the idea that the invention of other devices had not been made superflous by the existence of those already on the market. Dr. Meltzer then described his method of pharyngeal insufflation which had given very satisfactory results with animals, but which, when tested upon dead human bodies, was found to permit the escape of air through the nose and mouth. This could not be prevented in the human subject in the same easy manner in which it had been accomplished in animals. He had since tried to perfect the pharyngeal method so as to adapt it to the requirements of the human anatomy. Simultaneously he had studied the efficiency of carrying on the respiration by means of a well-fitting face mask. In both methods a heavy weight had to be put on the abdomen and reinforced by the application of a tight bandage. This prevented the entrance of the accumulated air into the gastrointestinal canal. This restricted abdominal respiration and was probably of service to the failing circulation by driving blood from the paralyzed blood vessels of the splanchnic region into the heart and medulla oblongata, where it was most needed. In both methods the external arrangement for an efficient rhythmical and safe control of the respiration was the same. It consisted of a source for gas or air pressure, of a valve attending to the rhythm of respiration, and of a safety valve. The point which differentiated the two methods was that for the pharyngeal method the pharyngeal tube which he had now devised was of fairly large transverse diameter and capable of filling out the entrance into the pharynx so that the insufflated air could not escape so readily back through the mouth. The pharyngeal end of the tube was cut off slantingly, so that when inserted into the pharynx the end of the lower wall remained anteriorly to the opening of the larynx, while the upper wall extended to the posterior wall of the pharynx, raising the soft palate and the uvula and thus shutting off the oval pharynx from the nasal cavity. The method of using the apparatus was as follows: After the abdomen was well weighted the tongue was pulled out, the mouth opened widely and the pharyngeal tube inserted as far as it would go. The neck of the pharyngeal tube should then be connected with the bellows or oxygen tank. As soon as the air or oxygen was turned on a person grasped the respiratory valve, turning the ring from side to side, every three or four seconds, and thus an efficient respiration was on. Instead of the pharyngeal tube a tightly-fitting mask with a nozzle for connection with the blowing apparatus, tightly and safely attached to the head, would do efficient service. In either case the tongue had to be kept well pulled out to keep the epiglottis raised and the entrance into the larynx free. He believed that the respiratory changes could be accomplished with greater readiness by the pharyngeal method than by the face mask. The Schäfer method could easily be combined with either of these methods.

**Treponema Pallidum in the Brains of General Paralytics.**—Dr. HIDEYO NOGUCHI made a demonstration of the *Treponema pallidum* in the brain in cases of general paresis, with lantern slides.

**Protein Assimilation.**—Dr. DONALD D. VAN SLYKE read this paper. He first referred to the structure of the amino acids which were the units or building stones out of which the protein molecule was constructed and the final products obtained when the proteins were hydrolyzed by strong acids or by the action of pepsin, trypsin, and erepsin in the alimentary canal. The characteristic point was the occurrence in the same molecule of an acid group, with an acidity like that of acetic acid and an amino group, with a basicity like that of ammonia. The acid and the amino groups were joined by a central carbon atom, which served as a bridge between them. Of the many characteristics of this molecule was the one which made the existence of protein and of protoplasm possible, that was the ability of the amino acids to dovetail themselves together and thus form a chain of indefinite length. When the proteins were attached, by trypsin, for example, the links of the chain were broken apart and there resulted shorter chains, the albumoses, then still smaller ones, the peptones, and finally the separate amino acids. This constituted the process of digestion. The formation of new protein consisted of the reverse, namely, the linking together of the acids into new chains. The problem to be considered was that of tracing the proteins of the food from the alimentary canal through the blood stream into the tissues and there ascertaining their final fate. The author reviewed four theories which had been advanced to explain the mechanism by which the food proteins reached and were utilized by the tissues of the body, and pointed out wherein they had failed to stand the tests applied. He stated that the entire confusion and controversy had been due to the failure to apply methods which were sufficiently accurate and sensitive to determine whether amino acids and proteins were or were not present in the normal blood, and whether they passed into it from the alimentary tract during digestion. During the past three years they had developed in their laboratory a method which it seemed might solve the problem. When amino acids were brought into a solution of nitrous acid under proper conditions, an almost instantaneous decomposition of the amino group occurred and its nitrogen was evolved in the form of an elementary nitrogen gas. This gas could be measured accurately and afforded a delicate means for detecting amino acids in even minute quantities. With this method Dr. Gustave Meyer and the author began to experiment a year ago in order to determine whether the digestion of protein caused amino acids to appear or increase in the blood. The results of the experiment were speedily positive. They found that the blood of a dog always contained a small amount of amino acid nitrogen, and that this amount could be more than doubled by feeding protein. The concentration of the amino acids in the blood was small even at its maximum; the concentrations found were entirely sufficient to account for the most rapid imaginable absorption of proteolytic products. It was now certain that digestive products were taken directly into the blood, and, although the possibility of some synthesis in the course of absorption had not been excluded, there was at present no reason to believe that any such roundabout mechanism played an important part in normal absorption. From the low amino nitrogen content of the blood, it was apparent that if all the digestive products entered the circulation they must be removed from it very rapidly in order to keep their concentration so low. To test the rate at which the removal occurred they injected 12 grams of alanine intravenously into a dog. The nitrogen was nearly 2 grams, an amount which in the form of protein could keep the animal in equilibrium for a day, yet in five minutes after the injection 88 per cent. of the injected amino nitrogen disappeared from the circulation and after one-half hour the amino figure of the blood had dropped to 12 milligrams which was about normal for a dog in digestive activity. They had repeated the experiment with mixtures of all the amino acids yielded by the hydrolysis of casein with absolutely similar results. It was probable that in the case of man, where relatively moderate amounts of protein entered the diet mixed with carbohydrates and fats and divided into three or more meals per day, the fluctuations during digestion were less than those observed in dogs after heavy meals of meat. The question next arose as to what became of these products when they vanished from the circulation. Because of the velocity with which the amino acids disappeared from the circulation, it seemed that a physical explanation was more probable than a chemical one. They therefore analyzed the tissues after known amounts of amino acids had been injected and observed to disappear from the circulation, and found that they were, in fact, merely absorbed by the tissues, and that, as nearly as could be estimated, all the injected amino nitrogen was found again in the muscles and other organs. It would be seen that the tissues, even in a fasting animal, were about ten times richer than the blood in amino acids. When the concentration of the latter in the blood was

increased by injecion, absorption into the tissues immediately occurred, and led to new equilibrium between the blood and the fixed organs in respect to the content of both in amino acids. That a state of equilibrium did exist was indicated by the fact that, notwithstanding the extreme avidity of the tissues for these products, they never entirely removed them from the blood. When, as a result of an injection, the concentration of an amino nitrogen in the tissues rose to a higher level, the ultimate concentration in the blood also remained at a higher level than before the injection. Another point worthy of note was that in the case of muscles a fairly definite saturation point existed which set the limit to the amount of amino acids that could be absorbed. They had never been able to force the amino figure of the muscles above 75 milligrams per hundred grams of tissue. The statement that the amino acids entering the blood stream were merely absorbed without chemical alteration by the tissues was a very loose description of a phenomenon for which the complete explanation would be far from easy. After advancing several theories as possible explanations, he stated that the solution of this phase of the problem would have to be left to the future, and at present merely designated the phenomenon of absorption. They had undertaken experiments to determine for how long a period the amino acids could remain unaltered in the tissues and found that the amino acids disappeared from the kidneys at a rate incomparably greater than that at which they left the muscles, or apparently the other organs analyzed at the end of the experiment. In the muscles, on the other hand, the drop was so slight that it hardly exceeded the differences which could normally occur in different sections of the same organ. The disappearance of amino acids from the liver and kidney was accompanied by an increase in the urea content of the blood. These facts strengthened the old view that the liver was to an especial degree active in transforming the products of protein digestion into urea. It was somewhat surprising to note a similar disappearance of amino acids from the kidneys. Further experiments seemed to show that, while the muscles after a heavy feeding of meat were stored with amino acids up to their saturation point, the liver and kidneys metabolized their portion of the products as rapidly as they received it. When the other tissues became saturated it was possible that the entire task of removing the digestive products from the circulation fell upon these two organs, and that most of the proteolytic products which they took up were normally broken down, the nitrogen portion being transformed into urea. This hypothesis would explain many previously known facts. The work was still far from finished; as yet they had gained no intimate knowledge of the mechanism by which the body built its new protein and they had touched only one-half of the problem, that of the fate of the nitrogen part of the amino acids. The fate of the remaining portion offered a more complex problem.

Dr. L. F. Bishop said that Dr. Van Slyke's paper was too important to be passed without commendation. In the discussion of the speaker's paper before the International Congress of Hygiene on "The Prevention of Arteriosclerosis," Dr. Mendel called him to account for predicating the existence of amino acids in the blood. This was only last September. He had been making an intensive study of arteriosclerosis for the past three months in the preparation of a book, and had sought and obtained the opinions of a good many men. He believed arteriosclerosis was a disorder of the ultimate cells of the body in which the blood vessels took an important share. The cells became sensitive to particular proteins, and this originated a subsymptomal reaction that caused the damage. Dr. Van Slyke's discovery of the lodgment of the amino acids in the tissues so quickly that their detection in the blood was difficult was of extreme interest and Dr. Bishop said he felt a personal debt of gratitude to Dr. Van Slyke for the help he had given him in the problem of arteriosclerosis.

**Studies in Experimental Pneumonia.**—Dr. Martha Wollstein presented this communication. She stated that the production of a disease experimentally by its specific organism was one of the most convincing arguments in confirming the relation of an organism to a disease. The vast majority of endeavors to produce pneumonia experimentally had been failures. At best they might be compared with the injections of typhoid bacilli which produced infection but not typhoid. The one exception was the work of Wadsworth based on the theory that the failures to produce lesions in pneumonia in animals were due to the fact that the various species were either insusceptible or hypersusceptible to the pneumococcus. Their experiments had been made with a new method and had been used in more than two hundred and fifty experiments with practically uniform success in animals which were very slightly susceptible to pneumococcus infection. The following simple method was used: With the animal under ether a long rubber catheter of small diameter with an opening at the end was introduced through the mouth, larynx, and trachea as deep into the bronchus as it would go. By means of a sterile pipette and syringe a certain quantity of culture was then injected through the catheter. In experiments upon 44 dogs there were only two failures which were probably due to some error in technique. All the other dogs had pneumonic lesions perfectly comparable with the lesions in human lobar pneumonia. Seven of the animals died with bacteremia, empyema, and pericarditis. In the animals which recovered the lesions resolved in six or seven days. There was no chill at the beginning of the infection and no crisis at the end. A few hours after the injection a moderate rise of temperature occurred and gradually disappeared in twenty-four to thirty-six hours. In fatal cases there was a second rise of temperature. In non-fatal cases there were practically no symptoms comparable with those generally present in human pneumonia. In a few experiments made by Lamar and Meltzer with Friedlander's pneumobacillus and with the streptococcus mucosus the results were practically the same as those produced with the pneumococcus. During the past fifteen months several series of experiments had been carried out by the same method using various organisms and in two instances a virulent and a non-virulent strain of the same organism. By insufflation with ether and the removal of the sternum and several rubs they had been enabled to follow the development of the lesion from the beginning of engorgement until hepatization was well established and fibrin flakes were present on the pleura. In one series of experiments they studied the eect of intrabronchial insufflation of cultures of streptococcus and of the influenza bacillus. In both instances a lobular pneumonia resulted, anatomically similar to lesions well known in human pathology. There were no fatal results and the clinical course of the disease was about the same as that seen in the non-fatal pneumonias produced by intrabronchial insufflation of pneumococcus cultures. The pathological differentiation in the character of the lesions produced was unmistakable. The intrabronchial insufflation of the pneumococcus, the pneumobacillus (Friedlander), and the streptococcus mucosus caused pulmonary lesions of the character of lobar pneumonia with an abundance of fibrin and with slight tendency to invade the lung framework. The insufflation of the *Staphylococcus aureus,* the streptococcus, and the influenza bacillus caused a lesion like that found in bronchopneumonia, containing only a moderate amount of fibrin and with no tendency to affect the pleura, but invariably showing a leucocytic infiltration of the framework of the lungs. In other series they studied the influence of the virulence of the organism upon the nature of the lesion. Using a non-virulent organism of pneumonia they again succeeded in producing well marked pneumonic lesions in dogs. The gross appearance of the lesion was that of a mild lobar pneumonia differing from the lesion caused by the virulent pneumococcus in the smaller amount of fibrin present and in the absence of pneumococci from the blood. In the animals which received cirulent pneumococci they invariably found pneumococci in the heart's blood; while in the series of experiments with the non-virulent strain, pneumococci were not found in a single instance. The same difference was found to obtain between the effects of the virulent and non-virulent streptococci. The intrabronchial insufflation of such a harmless saprophyte as *B. megatherium* caused a pneumonic lesion practically similar to that produced by a non-virulent pneumococcus, a mild lobar pneumonia with very little fibrin and no bacteriemia. The insufflation of virulent pneumococci killed by heat caused only a moderate hyperemia. Practically the same result was obtained when sterile broth was injected. All of these results were obtained by intrabronchial insufflation and could not be obtained by mere injection or insufflation into the trachea. Their theory to account for this was that by the intrabronchial injections a number of terminal bronchi were converted into closed tubes filled up with the culture. The mere presence of pathogenic organisms upon a free surface did not lead to an infection; to be successful the organism had to be entrenched in a closed tube or cavity, or in an ulcerated surface where they could creep under cover or hide under a dead tissue. It was possible that this was the history of non-experimental pneumonias in human beings.

After an insignificant laryngitis or bronchitis some mucus filled up small bronchi without causing any noticeable symptoms, but now and then virulent pneumococci might get there, multiply, and suddenly be in a position to attack the lung structure. The fact that the virulent strains of bacteria were found in the heart's blood in the first two days after the injection, although the majority of these animals survived, might justify the statement that the presence of the organism the blood in the early days of the disease did not indicate that the organism was of a virulent type, while it might be freely admitted that the presence of the organism in an advanced stage of the disease suggested rather an unfavorable prognosis. All the animals which died of experimental pneumonia had bacteriemia.

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SECTION ON PEDIATRICS.

*Stated Meeting, Held January 9, 1913.*

Dr. Henry Dwight Chapin in the Chair.

**Remarks Concerning the Need of Psychological Clinics in Connection with the Public Schools.**—Dr. L. Pierce Clark read this paper. He said that for years there had been a growing discontent in the minds of the thinking public with the slow advance in individual teaching in the public schools and one of the comparative new departures to meet this lack had been the establishment of ungraded classes for the so-called subnormal children. This work had advanced very rapidly, there being to-day, in New York City alone, 152 ungraded classes caring for over 2,700 pupils. It is now estimated that there were 7,000 children in New York in urgent need of such instruction as was given in these ungraded classes. At least 427 classes were needed for this work. This did not mean that feeble-mindedness was on the increase in the public schools, but it simply meant that the public was awakening to the importance of detecting these defects in the pupil material of the public schools. The importance of this work could not be questioned. The withdrawal of the mentally unfit or deficient child from the normal class was alike beneficial to the normal and to the subnormal child. The idiots and imbeciles might be receiving much good from these special classes, but all were agreed that they needed special institutional training in colony homes where proper habits of living and work for the whole of life might be taught. This hopeless and but slightly educable class must be cleared from the schools. Until the State was prepared to care for them there was no doubt but that these defective children should remain in the ungraded classes, getting as much as possible of the social education which had been patterned after the institutional plan of instruction. More exact psychiatric analyses of these high-grade defectives should be made. The neurotic, nervous, emotional child, given to day dreams or night terrors, or suffering from memory or attention defects, the child with uncontrolled tics and habit spasms, or even more pronounced nervous or mental disease; in fact, the whole group-class which formed the embryo storehouse of the psychoneuroses and the near invalidism of later life, should be more carefully studied. They, as physicians of special neurological and psychiatrical training, should not be slow in recognizing that this was a special field for the study of the causation and prevention of the functional nervous diseases. Still more fundamental would be the study of the makeup of the neurotic constitution which all were agreed was the core of the neuroses. It might be just possible when this nucleus was disclosed that it would be found that it acted as a Mendelian unit and was just as transmissible as physical defects, were known to be. Out of this neuropathic constitution flowed the antisocial traits of abnormal child life, such as lying, stealing, truancy, sex-perversion, and a host of others. It was estimated that this class of children formed from 5 to 10 per cent. of all school children. Many of these children grew up into healthy men and women in later life. If it had taken years of painstaking study to evolve a comprehensive understanding and training treatment of the frankly defective child, how much more labor remained to be performed before they would reach an understanding of these deviate children of the neurotic type? The problem of establishing psychobiologic clinics was not a new one. They were a step in the right direction, but the psychologic clinics needed expert psychiatrists and neurologists to extend and make definite a form of psychoanalytic inquiry commensurate with the newer methods in psychiatry. The need of the present was not a lot of cases loosely studied, but a few cases carefully and exactly analyzed. The reason for establishing such clinics in the schools was that the schools were established and had the full confidence of the parents and could readily incorporate a complete and properly equipped clinic with their other special schools for the blind, deaf and mute, and crippled. Such a clinic should have a definite record of the child's defect and behavior in a false adaptation or lack of progress in the normal school; there should be careful research of the family life and environment which might be a contributing cause for the nervousness; there should be an intelligence, will, judgment, and ethical test by trained experts as well as a thorough physical examination. Then, and not until then, should a prescription of the special school treatment be given. Provision should be made for a follow-up record and for re-examination. The case should be reviewed after a certain observation treatment had been applied. A system like this called for team work on the part of the teacher, psychologist, neurologist, psychiatrist, and sociologist. There was work and honor in such a field of endeavor. Such a clinic was being organized for the New York City schools and they hoped to show some important results in solving this problem.

**Etiological Factors in Atypical Children.**—Dr. S. P. Goodhart presented this paper, in which, he said, he would use the term atypical in its most significant and broadest sense as referring to that class of beings, who, by reason of unstable or rather disproportionate mental faculties, did not conform to the ordinary accepted standard. This class should be differentiated from those mentally defective, as the dullard, the imbecile, or the idiot. The atypical child might often be endowed with qualities of genius or a special aptitude in certain directions. In these children it had been found that heredity played an unquestionable etiological rôle. There was a history of syphilis, alcoholism, epilepsy, consanguinous marriage, or a psychosis of some kind. These children were usually deficient in certain practical elementary intellectual qualities. If improperly educated or brought up in unsuitable surroundings these children often developed criminal traits for which society paid the price of ignorance and neglect. In adult life these individuals often found themselves out of tune with their surroundings, lost the incentive of life work, and their mental attitude was in conflict with the conditions life imposed upon them. Eventually there was forced out another and weaker personality. In the soil of such conditions lay the seed of dementia precox. The influences of the experiences of the early years upon the development of the various forms of the neuroses later had been emphasized during the last decade by the methods of psychoanalysis. Investigations had shown that the experiences of child life which formed the nucleus for functional neuroses later in life need not be of sexual color, but that any form of psychic trauma, attended by strong emotional reaction, and suppressed, might suddenly emerge as the basis for severe psychic disturbance. Sublimation, that was the transforming of the energy of the sexual impulses into productive activity, should begin early in the child's life. The necessity of carefully observing evidences of the tendency to sexual perversion in children should be appreciated. Dr. Goodhart said that personally he believed that there were bisexual elements in all and that the development of the invert was probably due to some one profound or perhaps repeated sexual experiences among children of the same sex. The development of the will should be specially directed to overcoming the obstacles of life experience. The need of this was made evident by what was known as regression, meaning the turning back of the energy of the individual to the primitive, the juvenile habits of thought and action. The neurosis often appeared in the later life of the neurotic, when confronted by what appeared an insurmountable obstacle, effort was abandoned and the psychic energy became anchored to its juvenile phantasies. The tendency of the imaginative child to become self-centered and thus have his perceptions aroused by autoerogenous stimuli should be combatted. If allowed automatic repetition, complexes formed, the sexual perversities adhered to the subconscious, and, in time of regression in later life, became active phantasies around which the neurosis developed. The unstable neurotic type must be differentiated from the self-controlled child, the one who had himself well in hand, who had a specially vivid imagination with a mild tendency to day dreaming, a fondness for solitude and reflection was extremely sensitive and apparently timid. This child was liable under unsuitable environment to develop into the truly neurotic. The routine pedagogical systems were entirely unsuited to the education of the atypical child. An effort to educate these children according to the accepted system resulted in placing them in the

category of the seriously deficient, rapidly depleting their energy in fruitless effort, and finally ending in serious mental conflict. Adequate psychological pedagogy, adapted to the individual, could be applied, as were orthopedics and gymnastics to the physical inefficiencies. Psychological clinics were needed with social workers whose functions would be both scientific and practical. Trained psychopedagogues would often detect the pre-dement or pre-paranoic. The years of adolescence were fraught with great danger to the psychic life. Imagination and introspection became heightened in the neurotic child, and, as in the psychology of precox, the horizon of mental activity became more circumscribed. The child might delight in the illusory life, made up of complexes, that by repetition took form and root, later, perhaps, to become the nucleus of true paranoid entities. The exaggerations and perversions of the normal psychological perceptive and apperceptive processes, or the persistence of those which should be modified or assimilated by experience and development of the intellect, brought one close to the question of how far psychological pedagogy could save the child. There was a class of children having, as a rule, the hereditary taint, who were intellectually up to the average, but who had an intense emotionalism. They might suffer from seizures of epileptoid nature, but the earmarks of true epilepsy were wanting. The attacks might occur during the first decade, perhaps only once, or they might be recurrent for years without any psychic deterioration. Unless the proper adjustment was made in the environment of such children, their late life showed the deflections of the psychasthenic. Many of the symptoms of dementia precox were really perversions or exaggeration of normal mental juvenile life. Dr. Goodhart said he had found the Binet tests of general value only: they were doubtless useful in schools and institutions. They did not allow one to reach the child's true emotional sphere or to reach conclusions as to the relation between judgment, memory, and emotion. While it was true that moral development was largely a matter of education, there were children who were really moral imbeciles. It was surprising how frequently one met with true paranoid psychological elements in the neurotic child. Even here, early training, the cultivation of self-restraint, might develop inhibitory powers which would enable the patient to govern impulses which held sway over morbid ideation. From this material the more intelligent criminal class, the harmless cranks, and the homicidal often took their origin. In spite of the fact that heredity was a powerful factor in both physical and mental disease, man probably did not enter the world with an unalterable fate of mental deterioration. Through the application of Mendel's law some of the irregularities of transmission in heredity were coming to be understood and psychoanalysis gave a method for the study of subconscious activity, a phase of mental operation that exerted a tremendous influence upon the conscious activity of the individual. It would seem that many of the obscure problems of inheritance were to be accounted for through the operation of subconscious mind. Dr. Goodhart emphasized the great importance of deep emotional complexes that had been relegated to the subconscious during early life. Those who had studied ancestral and personal histories of a very large number of defectives found syphilis a very prominent factor in the etiology and doubtless this was true for the neuroses. As to consanguinity, it seemed that the character of the stock was the determining factor. Consanguinous marriages between those of good stock resulted, as a rule, in high-class offspring, but if a neurosis was introduced the offspring suffered more than from an indifferent mating. Etiologically the social and economic problems, in every aspect, bore directly upon the production of mental deviation and its development even in healthy children. Dr. Goodhart did not believe that sterilization was the cure for crime; one had to go back of those already afflicted. The individual conscience must be awakened so that general laws of mental hygiene would be enacted and carried out under the supervision of competent scientists. Then only might they hope to be relieved of the fruitless burden of caring for mental and physical anomalies.

**The Mental Defective and Society.**—Dr. William Leland Stowell read this paper. He stated that by the mental defective in his paper would be understood the feeble-minded person. The family physician was the first to see the mental defective at the age of one or two years when the family first began to realize that the child was not normal. Perhaps the child failed to grasp objects at the age of six months, failed to show surprise or fear, failed to begin to walk at the age of one year, to show curiosity, or sociability at the age of a year and a half, or to talk at twenty months, and continued infantile habits beyond the age of two years. At the age of six or seven the school teacher noticed the limitations of such a child. He could not learn the use of objects, could not tell time, or age, or count, or appreciate form and color as normal children did. If his intelligence never got beyond that of a child of two years he was an idiot; if only to that of a child of seven, he was an imbecile; if he stopped developing at the age of twelve, he was feeble-minded of high grade; if almost up to the standard he was a moron. The feeble-minded child could not compete with normal children, because he lacked reasoning power, did not appreciate right and wrong or the consequences, was actuated by impulse or suggestion rather than by design. He lacked imagination, power of initiative, and that of prolonged application. Such persons had little moral sense and sexually were corrupt. While they lacked judgment they might develop some faculty to a specialty. Carefully gathered statistics had enabled them to compute that at a conservative estimate there was one feeble-minded person to every 300 normal individuals, or 300,000 feeble-minded individuals in the United States. There were 30,000 of these persons in New York State and less than 4,000 of them were in four proper institutions. Only twenty-three of the forty-eight states had suitable institutions for the feeble-minded at present. The author's experience had been gained at Randall's Island, where there were 1,186 aments. Here they tried to supply them with a proper environment. The girls were taught sewing and domestic employments and the boys were instructed in trades and outdoor work. In the schoolroom the work was one under the supervision of normal minds. They could not supply gray cells where none existed and hence such children should remain with their peers in an institution. There they should be taught personal cleanliness and put through a modified kindergarten course. The education of the borderline cases had been greatly advanced during the last decade. The special classes maintained by the New York City Board of Education were doing a most useful work. However, this work was not for the public schools, for scarcely one-tenth of the children ever rose to normal grades. These children should be in an institution all of the time instead of in the public school for a part of the time. The adults should be segregated because of the likelihood of their becoming parents of their kind. Again, this class of individuals were happier when with their kind because they were not fitted to compete with normal individuals. Segregation was especially necessary for feeble-minded girls, because of their lack of moral force, most of them becoming mothers early in life. The author gave statistics showing the high birth rate among these defectives, the average being six children per family, whereas the average among normal American families was three children. He also showed that feeble-mindedness was two-hundred times as frequent among prostitutes as among normal women. After referring to the famous Jukes family and the Tribe of Ishmælites in Indiana, the author emphasized the fact that such histories could be prevented if proper prophylaxis was applied. In this State they had, happily, one institution where 800 women were safe from motherhood. Feeble-mindedness was an incurable condition and not a disease. The condition of the higher grades of feeble-mindedness could be improved by training so that they became useful in institutions but not capable alone. Dr. Caldecot, of Earleswood, in an investigation of 341 patients who were discharged during fifteen years, found that 3.25 per cent. were earning wages, 3.81 were at home very useful, 7.5 were at home and useful, and the remaining 85.5 per cent. were of no good whatever and should have been taken care of for life. These were all discharged cases supposedly good enough to be at liberty. According to Dr. Wiley the normal average life was forty-four years; their records at Randall's Island showed the age of death among these feeble-minded to be thirteen years. Hence normal persons lived about three and one-half times as long as aments. The mortality tables showed that the death rate from pneumonia and inanition was very high, and that from diseases of the vascular system very low as compared with the normal rates. As to the financial side of the problem of the defective, the institutional cost of maintenance was about $200 per capita per annum. The cost of caring for the defective in the home would be as much, so that one might compute the cost of caring for 300,000 as $60,000,000 a year. In the Elmira Reformatory 37 per cent. of the criminals were found to be mental defectives, or more than one in every three. Greater New York's crime bill for 1906 was $35,000,000 and that of the nation $1,075,000,000. If one-third of these costs were charged to the mental defects of the criminals or to the neglect on

the part of the public, the cost of feeble-mindedness was very high. If the State could not segregate the feeble-minded it should sterilize them. There should be a law that no person in an institution at public charge, who had been properly adjudged defective, should be discharged therefrom without first being rendered unproductive. Children were not allowed to marry, so why should this class of individuals be allowed to do so when they were only children in intellect? Dr. Barr regarded a sexualization in the same light as quarentine measures, a protection for the public against disease. Earl Russell in England had said: "If the ruling classes in Parliament and in the law were composed of people of adequate medical knowledge, some such remedy as this would be the law of the land." Such were the views of many students of the subject and such were the author's views.

Dr. Charles L. Dana said that feeble-minded children were a menace to society and an expense to the State when they were dependent. They were a menace because of the danger of propagation. The question was how were they to be managed? The care of the feeble-minded should be placed under State regulation and the State should organize a State Board of Control similar to the State Board of Lunacy. Feeble-minded children should be cared for in the same way as were those mentally deficient. Such a State Board of Control should have a census taken and keep a Bureau of Records where the life history of these children might be kept. Before these children reached school age they should be cared for by their parents and after reaching the school age by the State. Dr. Dana thought it would be better to educate these children as far as possible under the direction of the Board of Education. When cases were found unfit for school work they should be referred to institutions. After these individuals passed the school age they should be cared for by the State under the supervision of the Board of Control and they should be placed in institutions provided for them. Some feeble-minded persons, not criminal, could be trained to become useful citizens. While such a plan was being worked up they would have to help get along as best they could with the agencies existing. The State Board of Charities had recognized the need of caring for the feeble-minded and were preparing to more than double the accommodations in the different State institutions. The ideal plan would be to have the child educated, cared for and looked after from the beginning of its life to the end, and treated merely as a person of unsound mind.

Dr. Charles H. Andrews of Buffalo said that they were all in favor of segregation of the mental defectives, but this was of no use under the law as interpreted by the Attorney-General. As soon as the child was able to do anything useful, he could be taken out of the institution at the request of the parents or grandparents. A boy who happened to be a firebug might destroy many buildings or a girl might become the prey of those who were looking for this class of girl. Dr. Andrews related one instance of a seventeen-year-old girl who was released at the request of her parents for a visit home, who during that short visit became pregnant by her own brother. This was but one of many instances which could be cited. What was the use of increasing the number of these institutions if the number of feeble-minded and criminals grew faster than the accommodations for them? Just what would be done in regard to sterilization in the State of New York was not yet known. The records and family histories of persons insane from hereditary causes would be examined and a history of the physical and mental condition of the individual would be noted and then, if the court approved, sterilization might be employed. Just how soon this would be done and to what extent remained to be determined and they were always willing to receive suggestions along these lines.

Dr. B. Sachs said that he did not believe that any great advances had been made toward the Utopian state by asexualization. It was well to adhere to the tangible phases of the discussion and he wished to say a word in regard to the higher defectives. There were always a large number of these slightly defective children. These children were not proper subjects for care on the part of the State. They were the unfortunate victims of unsanitary conditions. After more than thirty years of study he did not feel ready to give any conclusions as to whether these children were developed as the result of heredity or of environment. Much could be done by the relative, parents, and teachers in improving the mental condition of these slightly defective children. The environment of the family was a great factor, the general atmosphere in the home, discontent on the part of the mother, and preoccupation on that of the father, contributed much more to the development of defective children than assumed factors of hereditary origin. Dr. Sachs said that at times there had been a great cry against the schools, but that he wished to go on record as stating that there was no one power in force in any American community that tended so clearly toward the prevention of defective and nervous children as the healthy restraining influence of the average school. Fortunately for the defective child the schools were excellent places for discipline during his early life and this was the one force that appealed to him in the improvement of the child's condition. The Section on Pediatrics could exert an excellent influence by pointing out to the Board of Education the absolute necessity of having these slightly defective children cared for. The development of the normal child was interfered with when he was expected to pursue his studies in the same class with the abnormal child, and it was still a greater injustice to the abnormal child to be placed in the same class with the normal child. At present all the defective children in this city were in one class, which was ungraded, and this was a great error. Defective children differed from one another and special schools should be established with a series of ungraded classes. There was much good material among defective children and under proper training much could be done for them. The Board of Education of New York City should be urged to live up to the duty of training this class of higher defectives at least. The complete imbeciles and the seriously defective should be entrusted to the care of the State.

Dr. Max G. Schlapp said that Dr. Sachs was probably referring to the feeble-minded children when he said that a large percentage of them could be educated and become useful citizens. This statement was not borne out by facts. In looking over the reports of an institution where this kind of work was carried on he had found that a very small percentage of the feeble-minded were ever capable of doing any good work or of becoming self-supporting. The serious factor in the problem that was to be considered was the welfare of the members of the community. These children were without exception potential criminals. Most of them were sexual imbeciles. They were to be found in children's courts as well as in clinics. Time and again they would mislead the normal child. Dr. Schlapp differed with Dr. Stowell in the statement that feeble-mindedness was a condition and not a disease. Dr. Schlapp said he believed that feeble-mindedness was the result of such conditions as Basdow's disease, myxodema, Addison's disease, and similar conditions. If they considered these conditions as diseases then feeble-mindedness was also a disease. It was the duty of the State to take these feeble-minded individuals out of the community and place them in institutions where it might be possible to determine the nature of their condition and to get some prophylactic which would prevent its spreading or increase. Idiopathic feeble-mindedness was due to some disturbance of the internal secretions, although he could not say positively that this was the most important factor in the creation of feeble-mindedness.

Mr. Angus P. Thorne of the Department of Charities said that the most important thing was for the State to adopt some definite policy for the care of the feeble-minded and he believed that the State of New York was practically committed to a definite policy of segregation. At the present time the State Board of Charities had supervision over all institutions devoted to the care of the feeble-minded. He did not agree with Dr. Dana that a State Board of Control was necessary. The State Board of Charities had the power to do the work that was suggested for a State Board of Control. If the State would provide the means for caring for the feeble-minded, the State Board of Charities would handle the work. The most important thing was a scientific investigation to determine the underlying causes of feeble-mindedness. The Department of Charities had established a "Clearing House" for the examination of those defectives, and through the generosity of private citizens, had appointed a staff of physicians at Randall's Island who would study those admitted to the institution on the Island. Again the taxpayer was entitled to some consideration. There was no good reason why the city of New York should support feeble-minded persons in institutions when their relatives were well able to maintain them. He wished that they could get the cöoperation of all the agencies in the city and get them interested in the feeble-minded and he believed that they could then collect data which would be of value and would stimulate the authorities to make better provision for the care of feeble-minded children.

Miss Elizabeth E. Farrell, Inspector of the Ungraded Classes in the Department of Education of the City of New York, said that in this regard the school was not

doing a new work, but that it was simply adapting its instruction to meet the needs of the individual child. The school authorities had during the past twelve years promoted the idea of adequate institutional care for a large number of children in the schools who never could be self-supporting and who ought never to be allowed to take a place in highly organized city life. They felt that their work was one of demonstration only. As soon as the public understood that they had in the schools of the city children who would need supervision as long as they lived, they would have adequate room and some sort of legal provision for transferring them to farm colonies. They did not want the idiots in the schools, but they questioned the wisdom of those who would have them turn such children into the streets. They wanted the doctors to regard the schools as laboratories. They wanted to gather such records as would help in the understanding of the pitiful cases of psychoses that came to them for intelligent sympathy and help. They hoped that the time of arguing whether or not the defective child was really the concern of the public school had passed, but they would have to care for them until society realized its duty to itself and its obligations to the weak.

Mr. Hebbard, formerly Commissioner of Charities, said that it must be evident that the State could never segregate the 30,000 feeble-minded, imbecile, and idiotic that were within its borders. They should aim to care for the low-grade cases, the idiots, imbeciles, and low-grade feeble-minded. At the present time there were 6,000 of the 30,000 under public care, being paid for by the State or the various localities in the State. They ought to care for more than twice that number. They wished to help the Commissioner on Ellis Island in the examination of immigrants to make sure that no person of feeble mind should get into the country. He agreed with Dr. Dana that a person with a defective strain which was inherited was more dangerous to the country than one who was insane. The thing they needed most of all was the public spirit that would help institutions for the feeble-minded to get money enough to enlarge their facilities so that more defectives could be cared for. In the institutions devoted to the care of epileptics it was estimated that 98 per cent. of the inmates were feeble-minded. When one saw the forces at work to keep the feeble-minded child out of the State it seemed that they were making real progress. He did not think that a Board of Control, as advocated by Dr. Dana, was necessary or even desirable. They needed some changes in the law. It was sometimes easy to send these people to institutions, but it was difficult to keep them there. There was great need for an institution for delinquents and mental defectives; these persons should not be allowed to take up the room in reformatories. A mental defective could never be reformed. They should have large asylums in New York and in other large cities for the reception and study of these delinquents. This was a subject to which a body like the Section on Pediatrics could turn their attention with profit. There was much work along this line for the Board of Education and for the Department of Charities and they should work together in this matter. All good citizens should be ready and willing to aid in this work and then it would be done thoroughly and well.

Dr. L. Pierce Clark believed that the contention that Dr. Dana had made that these children did not have criminal potentialities was correct. An important issue was the economic one. A census should be made in the State by which the number and whereabouts of these feeble-minded children could be determined. Ten years ago it was estimated that there were from 2,000 to 3,000 feeble-minded children in the City of New York, but regarding these there seemed to be some doubt. It was now found that a fair estimate of the number was 6,000 or 7,000. Dr. S. Philip Goodhart believed that the most important class with which they had to deal was the atypical or high defectives. These children were most valuable to society as among them were those possessed of special aptitudes. Unless they were recognized early and trained properly they fell into the truly defective class. Their potentialities for development depended upon education and environment. Feeble-mindedness was a disease when it was dependent upon some lesion in the brain; it was always a condition in the sense of its affecting social and economic problems.

Dr. Stowell agreed with Dr. Dana regarding the care and need for guidance of these unfortunates. They must have persons with normal minds to direct them. He did not regard feeble-mindedness as a disease. The Board of Education should have charge of the education of both normal and feeble-minded children, but the feeble-minded should be in institutions.

## Therapeutic Hints.

**Drugs in the Treatment of Diabetes.**—Guthrie Rankin has obtained good results with the following combination:

℞ Extract of valerian,
Pure phenol, of each, 2 grains.
Codeine, 1/3 to 1 grain.
Extract of cascara, 1½ grains.

The valerian steadies the nervous system, the phenol disinfects the intestinal canal, the codeine controls the output of sugar, and the cascara provides for the daily evacuation of the bowel.—*British Medical Journal,* March 22, 1913.

**Stimulation of the Mammary Function.**—P. Rudaux, A. Grosse, and U. Le Lorier note that the best means of stimulating the secretion of milk is a mechanical one. The action of galactogogues is uncertain. The following may be tried:

℞ Aqueous extract of galega, 25 grams.
Glycerophosphate of sodium, 15 grams
Syrup of lemon, 500 grams

or

℞ Extract of white nettle, 100 grams.
Glycerophosphate of sodium, 10 grams.
Simple syrup, 500 grams.

Of either of the above there should be given four tablespoonfuls daily, administered in any beverage. —"Clinique et Therapeutique Obstétricales du Praticien."

**Inhalations of Ozone in the Treatment of Diabetes.**—D. Labbé and P. Pérochon state that they have cured or have greatly improved a certain number of cases of diabetes by means of this method of treatment. The inhalations are given in daily séances of fifteen minutes each. It is supposed that oxygen in the naissant condition re-establishes the equilibruim between the production and the consumption of sugar in the organism.—*La Presse Médicale,* March 22, 1913.

**Prescriptions for Anorexia.**—M. T. Schnirer presents the following as some of the favorite formulæ in the German and Austrian clinics:

℞ Tinct. amar. (Deutsches Arzneibuch) 30 grams.
Tinct. nucis vomicæ, 10 grams
M. et Sig. Twenty drops t.i.d., a.c.

℞ Tinct. cinchonæ,
Tinct. aurantii cort., āā, 10 grams.
M. et Sig. Ten to twenty drops t.i.d., a.c.

℞ Menthol,
Tinct. amar.,
Tinct. nuc. vom., āā, 5 grams.
Tinct. cinchonæ, 20 grams.
M. et Sig. Ten to fifteen drops, one hour before meals (Neusser).

℞ Tinct. rhei vin. (Deut. Arz.),
Tinct. arom (Deut. Arz.), āā, 25 grams.
M. et Sig. One teaspoonful t.i.d., a.c.
—"Taschenbuch der Therapie."

**For Infantile Colic.**—Leonard Williams gives the following prescription as recommended by Widerhofer:

℞ Tinct. cascarillæ, ♏x.
Tinct. krameriæ, ♏x.
Ol. anthemidis, ♏j-ij.
Syr. simplicis, ʒiiss.
Aquam, ad ʒii.

M. Sig.: One teaspoonful every two hours.—"Minor Maladies."

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## Original Articles.

### WHAT IS PSYCHANALYSIS?

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ONE evening there came to Doctor Jung an elderly man in considerable excitement. He related that he had lately noticed that small sums were missing from his cash drawer. The police had been notified and the servants had been changed without result. It had just occurred to him that possibly a young man who was living with him might have taken the money. If so, he wanted to stop all further proceedings. He asked Doctor Jung to hypnotize the young man and inquire if he had committed the fault. Doctor Jung told him that this procedure would be hopeless, but that he had a method which would probably succeed.

The young man was brought to Jung, ostensibly for a consultation regarding his nerves. A set of words was prepared, including several that referred to the suspicious circumstances. These were mixed with about twice the number of indifferent words, the total being one hundred. The young man was instructed that when a word was called out he was to respond as quickly as possible with the first thing he thought of. The time was measured with a stop watch. Some of the results are given below.

| | | | | |
|---|---|---|---|---|
| 1 | Head | Nose | 2.0 | + |
| 2 | Green | Blue | 1.2 | + |
| | . | . | . | . |
| | . | . | . | . |
| | . | . | . | . |
| 12 | Give | Steal | 2.6 | + |
| | . | . | . | . |
| | . | . | . | . |
| | . | . | . | . |
| 19 | Burglar | Thief | 1.8 | + |
| 20 | Cook | ..... | ..... | ..... |
| | . | . | . | . |
| | . | . | . | . |
| | . | . | . | . |
| 46 | Right | Wrong | 2.2 | + |
| 47 | Thief | Burglar | 4.6 | Criminal |
| 48 | Find | Steal | 2.6 | Seek |
| 49 | Book | ..... | ..... | Law Book |
| 50 | Wrong | Right | 1.2 | + |

The first column gives the number of the experiment; the second gives the word spoken by the doctor: the third, what was associated by the patient: the fourth, the time it took him to respond. After going through the list once, the words were again called off; the patient was to repeat, if possible, the same word as before; otherwise he was to give the first thought that came to him. The fifth column contains a cross for a correct memory, and the new word for an incorrect one. The average time of response was 2.0 seconds.

We notice that the word "give" brought forth the word "steal." This in itself was unusual and suspicious; moreover, the time was much lengthened. After some indifferent results the word "burglar" brought forth the word "thief" very naturally in an ordinary time; but there was evidently so much disturbance aroused in the patient's mind that he could not associate at all to the following simple word "cook." Later the word "thief" brought the association "burglar" with the immensely long time of four and six-tenths seconds. The disturbance was so great that the patient forgot what he associated, and gave the different word "criminal" when he tried to remember it. The disturbance persisted so strongly that to the following word "fine" he associated "steal," taking a long time, and forgetting it; for the next word, "book," he was still so upset that he could not associate at all.

The result of one hundred associations was so convincing that Doctor Jung at once declared to the patient that he was a thief. The young man protested violently and asserted his innocence in great excitement. It was explained to him how he had betrayed himself in the experiments; thereupon he broke into tears and confessed.

Long experience has shown that whenever a word touches upon some topic in regard to which the person is sensitive, the records show one, or more, or all, of five different characteristics, namely: first, the time of response is lengthened; second, the first response is forgotten in the memory test; third, the association is likely to be superficial or trivial; fourth, there may be no association at all; fifth, the disturbance is likely to last over the next one or more experiments.

In the preceding case the disturbing events were known to and realized by the person himself. The method, however, is just as readily applied to cases where the person does not realize his condition.

Another case of Doctor Jung's was that of a happily married woman subject to explosions of jealousy with outbreaks of violence, and running away from the house. These outbreaks she carefully kept secret from the rest of the family; she wreaked her temper on her husband, who was a model man. In the association tests the strongest disturbances occurred with the words "happiness," "anxiety," "religion," "choose," "marry," "part," "death," "die." In her associations she used "like" thirteen times, "man" ten, "child" seven, "necessary" seven, "beautiful" six, "I" or "me" four.

It was possible to guess the story from these results alone, but it was easier to confront her with the record and show her that she had revealed conclusively that something was the matter with her happiness, that she was anxious about something, that religious questions were troubling her, etc. The patient agreed that she was not "happy" with her husband, that she was anxious about the future and did not know what to do, that she had "married" outside of her "religion" a man whom she "chose"

against the wishes of her parents, that she is debating if she shall "part" from him or "die." She also said that she "liked" "men," that a "child" is "necessary" for a happy marriage, that she ("I") is still "beautiful" enough to attract men. Further conversation showed that, although she had fitted herself to her husband, she was not satisfied with him, and that from time to time the feeling of resistance broke through. She would like to be loved by some other man; she had even telephoned to a young man to meet her in her husband's absence. She would be happy in any case if she had a child. The outbreaks of jealousy were projections of her own wishes; she would like to do the things with men which she accused him of doing with women.

A still more remarkable characteristic of the association test is the fact that the disturbance may occur when the test word touches upon the topics that have troubled us seriously in the past, but that have been so suppressed as to have been forgotten.

The fundamental fact of hysteria is that one or more disagreeable emotional experiences have been pushed out of the person's memory so that not only has he ceased to think of them, but also he cannot even remember them. These forgotten experiences affect, nevertheless, the results of the association test. The results enable us to draw definite conclusions as to what they are, and thus to get at the actual cause of the hysterical condition. I will not go into the matter of hysteria, but will turn to an illustration of this principle that I was able to furnish many years ago.

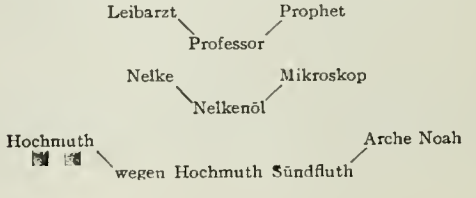
In 1895, that is, years before Freud had produced his theory of hysteria and Jung had devised his association experiment, I had published the results of investigations made in the Psychological Laboratory of Leipzig University, by which it was proved experimentally that an idea can be brought forth by an association through something of which the person is not conscious. Cards were prepared, each of which contained a picture in the middle and a small letter or character on one corner. Four or five such cards were flashed in succession on the ground glass of a camera-like apparatus. The time of exposure was made so short that, at the most, the subject was able to recognize only the picture without the small letter. Thereafter the small characters were exhibited alone, and the subject had to state which of the pictures first occurred to him. The following is a specimen series, the pictures being indicated by words.

| Peacock. | Shield. | Cat. | Flag. | Negro. |
|---|---|---|---|---|
| F | A | I | : : | C |

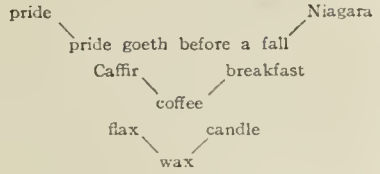
On one typical occasion when the small characters were shown alone without the pictures the results were I—cat, : :—flag, A—shield, C—negro, F—? Upon being questioned, the observer stated that he had not recognized any of the characters in the original series; he consequently had no reason to give for the associations, yet he had given all but one correctly. In all these cases the subject would feel that a certain picture belonged to a certain letter, although he had not seen the letter before as far as his knowldge went. From a number of experiments of this kind the conclusion was drawn that an idea which has not entered into the subject's full consciousness can be associated to an idea in consciousness, and can serve to reproduce it on a future occasion.

Further experiments were made by the following method: On one card there was a German word and some Japanese characters. On another card there was a strange word (Japanese, in Roman letters) with the same characters. A series of cards, comprising half of each kind, was shown in irregular order. For example, in one experiment, the following series (the Japanese characters being represented here by Greek letters) was shown in the order here given: (1) HANA α β, (2) HITO γ δ, (3) IUKU ε ξ, (4) KURU η θ, (5) MENSCH γ δ, (6) GEHEN ε ξ, (7) KOMMEN η θ, (8) BLUME α β. The subject was asked to state if he had noticed any associations between the first four words and the second four; he had not. Thereupon the words alone without the characters were shown him, with the request to state the first thing that entered his mind afer each. The results were as follows: (1) HITO—MENSCH, (2) KURU—KOMMEN, (3) HANA—? (4) IUKU—GEGEN, (5) KOMMEN—IUKU, (6) GEHEN—? (7) MENSCH—HITO, (8) BLUME—HANA. At the end the subject declared that all the associations were involuntary, that he could give no reason for any association, and that the Japanese characters had not occurred to him at all. Most of these associations were, nevertheless, correct; it seems probable that they were brought about by the influence of the Japanese characters which, nevertheless, had not entered into consciousness. This probability is increased by other experiments in which the word-association was correctly made and was followed by the occurrence of the characters. In still other cases the association was correctly formed without thought of the characters, whereas the subject could reproduce them when asked. Finally, the characters themselves were found to be in all stages of indefiniteness and forgetfulness, even in correct associations. It is to be remembered that all experiments were rejected in which any associations were made between the two parts of the series while they were being shown.

The problem was made the subject of further investigation by Aschaffenburg. In his experiments on the simple association of ideas a number of cases occurred in which the connection between the two ideas was intelligible only on the supposition of an intermediate idea. In the greatest number of cases this intermediate idea appeared to have been a sound-association with the inducing idea, while the relation of the induced idea to the intermediate one was of any kind. For example, to the word "Leibarzt" the person associated immediately "Prophet." A "Leibarzt" (a personal physician to some king or other important person) is in no way a prophet. He is, however, usually in Germany a professor at a university. The association "Leibarzt-Professor" is a natural one by similarity of meaning, and "Professor-Prophet" is also a natural one by similarity of sound. The quite irrational association "Leibarzt-Prophet" becomes rational if we assume the intermediate subconscious link "Professor." This case and two others may be represented as follows; the upper words give the conscious association, the lower word is the subconscious link:



Similar examples in English would be:




The intermediate idea in many cases does not remain completely unconscious, but appears as a following association. This shows that it was actually present in the mind at the time.

The association experiment of Doctor Jung is not the only method used in psychanalysis. Another method is the study of dreams.

In infancy we act freely according to our impulses, but from the very start we are trained to suppress them more and more. During sleep, however, our control is relaxed to some degree, and the suppressed impulses have a better opportunity to present themselves as dreams. This is exactly what dreams consist of, namely, representations of suppressed impulses. In the dreams of children these impulses are quite undisguised.

Freud relates that one night, after a day of fasting, he heard his little girl, nineteen months old, call out in her sleep, "Ann Feud, Erbeer, Hochbeer, Eicrpeis, Pap." It was quite evident that in her dreams she was satisfying her hunger by the various articles that she liked.

My niece, eight years old, had received a present of some Bantam chickens; she was rather disappointed at their smallness and at the fact that they could not be expected to grow larger. The next morning she related in great glee that she had dreamed she possessed a number of big Cochin China chickens. She had owned some Cochin China chickens the preceding summer. The incidents of the dream were furnished by events of the preceding day (owning the Bantams), and of a time not long before (the Cochin Chinas). The incidents of the dream are called its "manifest content." The study of thousands of dreams has established as a first principle that the manifest content is derived mainly from events of the day before or of a recent time.

Why should the little girl have a dream substituting large chickens for small ones? Her pleasure the next morning gives us the answer. The Bantams disappointed her; she would have preferred Cochin Chinas, that is, she really wished for them, although she probably did not recognize that she had a wish. This wish had not been fulfilled in reality, the dream fulfilled it. The study of thousands of dreams establishes the fact that they are made up of realization of wishes that have not been fulfilled in reality.

The fact of the wish does not appear to the dreamer. He does not dream that he is wishing something, but that he has it. The wish is an element deduced from the incidents of the dream. Such elements established by deduction belong to what is called the "latent content" of the dream.

With older persons the dreams are not so simple. We are taught more and more from infancy through childhood that we must regulate not only our acts but also our thoughts. Certain topics we must not permit ourselves even to think about. For example, we must not speak about our bodily functions, we must be careful that they are not observed by other persons, and we must not think about them unnecessarily.

Sexual topics are not so mildly suppressed. We must not talk about them. We must keep them secret, and in most cases we must not even think about them. We are taught to view many of them with horror. And yet they are just as natural as the instincts of hunger and the bodily functions; they are just as firmly implanted in us as in any of the animals. In the animals they have free expression; with us they are violently suppressed.

What is the result? In our dreams they strive to show themselves. The dreams of children and many dreams of adults are frankly sexual. But the suppression is usually so vigorous that our natural desires are not permitted to show themselves disguised even in dreams. There is, however, a way out. If our suppressed desires can so disguise themselves that they do not shock us, then they can often succeed in presenting themselves to us. This is the origin of the symbolism in dreams.

The habit of symbolism being once established, it is applied constantly and often quite unnecessarily in dreams. I will give a few illustrations of such dreams.

A patient relates a dream of a large white figure, which is an advertisement for a well-known breakfast food. He ridicules it. The figure becomes very angry. He retreats in fear, and finds himself on a snowy ridge. The figure blows a strong blast of snowflakes after him. He is accompanied by his three children. He sends two of them toward the valley to hunt for help. He and the other child try to get shelter behind some trees. The snow falls too rapidly and he decides that they will all stick together. He therefore calls back the two children, saying that they will all get shelter on the other side of the ridge. They climb up, sometimes over their heads in snow, and finally get over into safety.

To analyze a dream we first ask what has occurred recently that has suggested items in the dream. On the day before the dream the patient had been much interested in the decision in a libel case involving a weekly magazine and a food manufacturer, arising from an alleged fraudulent claim by the latter for some of his breakfast foods. He was particularly satisfied with the verdict for various reasons, and thought it was good punishment for the manufacturer. These were the suggestions that brought up in the dream the thought of the breakfast food and the ridiculing of the figure. When asked why the figure should have become angry, he said he at once thought that if he should express his delight at the decision it might offend possible customers who were in sympathy with the manufacturer. When asked if anything had lately occurred regarding snow or mountain climbing, he said that on the day before he had seen in a window an advertisement of the snow slides in Switzerland, and had been very much interested in them. They had brought him back to a previous visit to Switzerland. The ridge in the dream resembled a ridge which he had climbed the preceding summer, with the three children that appeared in the dream. Another factor that might have suggested the winter scene was the fact that he had been awakened by the coldness in the room in which he was sleeping. When asked if the blast of snowflakes suggested anything, he said that he had recently been very much worried about his financial situation. He had felt that he was being "snowed under" by difficulties that he had encountered. The incident of the children represented almost exactly what he had done a few months before. Getting to the other side of the ridge suggested the fact that he had recently decided to add

a new line of business in order to obtain more income. Getting through the snow suggested not only the financial difficulties, but also a scene in "Wuthering Heights," which he had just read. These recent events and thoughts had furnished the matter that made up the manifest content of the dream.

But why should he have had this dream? In other words, what was the latent content that had produced the dream? What were the impulses that sought to express themselves through the symbols?

They are always of two kinds, namely, wishes or fears. The first thought, which was very apparent, was his fierce desire to fight all humbugs. This was one of the most fundamental traits of his character. The second was naturally the wish to get out of his financial difficulties by a new line of action. The third was the wish to have his family together.

Dreams represent the working out of unfinished problems. These were exactly the problems that were worrying the man. He had not solved them in reality, but he solved them satisfactorily in the dream. In this case there was no necessity for symbolism. He might just as well have represented the facts otherwise, but the symbolic habit was a fundamental one and was used even when unnecessary.

Psychanalysis is thus a group of methods used for analyzing the human mind, particularly those portions of it that are not directly conscious. It is quite analogous to the work of dissecting the body and the microscopic study of the tissues. It is careful, cautious, and exact, and is a worthy complement to the scientifically accurate anatomical and physiological neurology of the present day.

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## GASTRALGIA NERVOSA AND ITS DIFFERENTIAL DIAGNOSIS.

By JACOB GUTMAN, M.D.,

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During the past decade the study of gastro-intestinal diseases has received considerable attention from various investigators: pathologists, physiological chemists, and clinicians. Many problems relating to the chemistry of digestion have been satisfactorily solved, the pathology of a number of previously indefinite diseases has been better defined, and the diagnosis of many pathological conditions has been so much simplified, that we are enabled to recognize them to-day with nearly mathematical accuracy.

A great deal of credit for the extraordinary progress made in this branch of medicine, particularly gastrology, is due to the successful labors of the radiologists, especially Rieder, Holtzknecht, Albers-Schoenberg, Haudeck, and Schwartz. Thanks to their studies the exact location of the stomach, its size, form, mobility, functional activity, or other characteristics are with but slight efforts like an open book to every medical man. Thus his burden has been lightened considerably; while formerly he had to base his diagnosis or exercise his therapy relying upon subjective, oftentimes unreliable symptoms of the patient, the physician is now enabled to dispense with the latter, but make his diagnosis with practically perfect certainty, depending upon scientific principles and his own observations only. The reason we now obtain therapeutically so much better results is because treatment is more rationally applied. We are also enabled to correct surgically many conditions in their earlier stages when a cure is possible, while previously we were compelled to wait for their further development until their diagnosis could be sufficiently established, when perhaps surgical operation would already be impractical or impossible.

Of the numerous ailments of the stomach the diagnosis of carcinomata, ulcerations, pyloric obstruction, and similar pathological changes of the stomach wall has especially been favored by the investigations and the latest advances in radiology. But one class of stomach affections seems to have received but little attention, the neuroses. The study of these diseases, rather common in the practice of every practitioner, seems to have been neglected, and the literature thereon is comparatively meager; even the latest text-books merely give a classification with perhaps a most superficial description of a few of them, thus creating an impression of rarity or unimportance. Yet a thorough understanding of these diseases is essential; we do not know how soon we may be called to the bedside of a patient suffering with intense abdominal pains, vomiting, cold sweats, small pulse, pallor or other symptoms of collapse, necessitating an immediate and exact diagnosis. A wrong diagnosis may unnecessarily send such a case to the operating table with perhaps the diagnosis of a perforated ulcer, cholelithiasis, or acute intestinal obstruction, instead of gastralgia, as has been observed by the writer upon several occasions. But besides being important, the neuroses are not infrequent; out of two thousand cases of stomach affections Friedenwald found 1952, or 79.6 per cent, were functional neuroses and gastralgia nervosa constituted no small percentage of these. It seems probable if the numerous cases of gastralgia occurring in private practice were identified and not mistaken for diseases of similar symptomatology their percentage would be considerably increased.

Because of the frequency and importance of these diseases it is the object of the writer to recall the subject of gastralgia, adding his personal experience and particularly his instructive observations made in the hospital division of Prof. Gustav Singer, at Vienna, desiring at the same time to acknowledge his indebtedness to the latter for the numerous courtesies shown him and for the wealth of material placed at his disposal.

By gastralgia nervosa we understand certain acute paroxysmal, more or less severe attacks of pain in the stomach region with the characteristics of neuralgias in general. The stomach is endowed with three functions: secretion, motion, and sensation. Its functional activity depends mainly upon the stimulation it receives through the terminal filaments of the vagosympatheticus. The latter is concerned with the vegetative processes of life. It supplies all the organs containing smooth muscle fibers, most of the secretory glands, and a number of organs with striated muscle fibers, such as the heart, terminals of the esophagus, rectum, etc. Hence there exists a common carrier of impulses for all these anatomically closely related systems of organs, a close union between the cardiovascular and glandular systems on the one side and the gastrointestinal and genitourinary systems on the other. It is also easy to comprehend how the impulses may be at times misdirected and assert themselves in organs rather distant from the real seat

of irritation, not in immediate proximity of the causative factor. The vagus is of great length, being the longest cranial nerve of the organism, and before reaching its final distribution it comes in touch with a great number of organs. This relationship is of importance; the nerves may be subjected to irritation of pressure from inflammatory changes, displacements, or new growths of these organs, producing either an exaggeration or a diminution of the normal stimulation of the gastric mucosa. This explains why a change may occur in the quantity or quality of secretion because of some psychic effect in the one case, while in another an attack of gastralgia will result because of irritation of some distant organ; it also explains why the gastrointestinal tract plays in general such an important part in the symptomatology of other diseases.

As far back as 1876 Leube, in his description of the stomach neuroses, divided them in accordance with the character of functional disturbance into three groups, and each of the groups into two subdivisions: an *irritative*, characterized by an overactivity of a particular function, and a *depressive*—indicated by diminished activity as compared with the normal. Accordingly, we have depressive forms of neurotic diseases (achylia, atony, hypesthesia) and irritative groups (hypersecretion, hyperkinesis, hyperesthesia), depending upon the type of perverted stimulation. The gastralgias under consideration belong to the latter class, the irritative form.

In accordance with the above stated definition, before we may pronounce an attack of pain in the stomach region as gastralgia nervosa it must comply with three conditions: (1) the pains must be located or originate in the stomach; (2) they must be of neuralgic character; (3) the stomach wall must anatomically be free from lesions.

In explanation of these requirements let it be remembered that other organs may normally or abnormally be situated in the epigastric region, in the usual position of the stomach, and thus be the real seat of pain, while the latter may be wholly innocent of the attack. The latest studies with Roentgen rays have conclusively demonstrated the variable localization of the stomach and its change of relationship to the other abdominal organs, even in the same individual or in the same day. Thus pain in the epigastrium may sometimes be outside of the stomach in another organ.

Besides, every "pain in the stomach," as the popular expression goes, is not necessarily a neuralgiform attack. The characteristics of pain are different: we should not mistake the colicky pains of pylorostenosis, the burning pains of hyperacidity, or the extreme tenderness of the overstretched Glissonian capsule of an acutely congested liver for neuralgic pains. They are not true neuralgias, even if appearing in paroxysms; they have none of the qualifications of the latter as will be seen later.

The third requirement is the exclusion of direct pathological changes of the stomach wall; otherwise, the gastralgia should not be classed as of nervous origin. In spite of the many methods at our command this is not always a simple proposition, and we still oftentimes fall into error in our diagnoses. In some cases notwithstanding the diseased state of the stomach wall, the patient does not subjectively seem to suffer and the stomach thus escapes our attention, while in others our attention may be distracted by the associated diseases of other organs of the individual. At the autopsies of a number of cases deceased from destruction of other organs the writer has seen ulcers of the stomach, young carcinomata, and considerable constrictions of the pylorus, which would be expected to give some signs of their existence, and yet the individuals during life seemed free from any disturbances indicative of such pathological changes. We must therefore be careful before we speak with certainty of nonexistence of anatomical changes in cases of gastralgia.

It is understood that gastralgia nervosa is a neurosis of the vagus, similar to neuroses of other sensory nerves in other parts of the body. Certain irritations of these nerves are supposed to result in neuralgia pains; irritation of the vagus may result in neuralgia of the stomach or gastralgia. Owing to the close relationship, anatomical and topical, of the vago-sympathetic with a great many organs, the irritations may be derived from many sources, most of which may be definitely located, but in a percentage of cases a demonstrable cause seems impossible to be determined; the latter are classed as the so-called *primary* or idiopathic class of gastralgia nervosa, while those having a definite reflex origin are considered as *secondary* or reflex gastralgias.

But in either variety there are three factors which are instrumental in provoking an attack of gastralgia. In the first place, there is almost always an unusual susceptibility of the patient's nervous system; it is oversensitive and too responsive to external influences. We find it among those with a neurotic family history (hysteria, neurasthenia, hypochondriasis), or the complainant himself may have been in the past a sufferer from nervous derangement. He is often an irritable, easily excitable individual, complaining of headaches, vertigo, insomnia, periods of hypochondria, etc. His reflexes are unusually increased, his sympathetic highly irritable, and may exhibit a fine tremor. Eppinger and Hess have rightfully placed these individuals in a class by themselves, the vagotonics. They are unique and are easily differentiated from the other types. The tone of their sympathetic system is different from the normal, responds in an exaggerated manner to external and internal stimuli by drugs, and is highly strung, ready to respond upon the slightest provocation. It is met more frequently among females, whose nervous system is already highly sensitive, and at those periods of life when it is especially responsive and prone to derangements—puberty, the menstrual periods, the early months of pregnancy, and the menopause. At the latter time, the period of reorganization of the woman's organism and its adaptation to its new phase of life, gastralgia is not an infrequent companion of the other unpleasant symptoms, the result of the disturbed equilibrium of her internal secretions.

The nervous predisposition plays a no less important rôle in man than in woman, but seems due to other causes and met at an age when most subject to the effect of our strenuous life. Business worries, continuous irritations, the rush and busy whirl of city life, late suppers, insufficient and irregular sleep, and in addition, the abuse of alcohol, tobacco, and venery, suffice to change even a rugged constitution into that of a nervous, debilitated, and irritable individual.

Frequent as we find the above mentioned factors among the higher classes of society, the poorer classes are equally great sufferers from an unstable nervous system. It has been the experience of the writer to attend a great many gastrointestinal cases

among the tenement population in New York, and to find a great percentage of these to be of nervous origin. The members of the tailoring trade of New York, in addition to frequent catarrhs, anorexia, constipation, and other gastrointestinal disturbances of pathological origin, seem to be particularly predisposed to the neuroses. Perhaps their mode of living, hard sweatshop work, hurried meals, short noonday rest, and bent posture at the working table may be contributory factors to the predisposition.

The second and next important factor in the etiology of gastralgias is the irritation of remote organs terminating in attacks upon the stomach. The genitourinary system plays proportionately an important rôle and the frequency of uterine disturbances in females seems to be another reason why they are more subject to the diseases under discussion. Malpositions of the uterus, especially retropositions, chronically inflamed adnexa, perimetritis, pelvic adhesions—are some of these causes, while a gravid uterus is often an obstinate one. Nephroptosis is the cause of a great many abdominal pains and is frequently a factor of gastralgia, which subsides upon the reposition of the organ to its place and its retention there.

Of the abdominal organs, the gall-bladder and ducts are frequent contributors to reflex gastralgias, while the appendix is even of more importance: if chronically inflamed and matted with the other tubular organs, it may constitute a good cause for a very obstinate case of gastralgia to be relieved only by operative intervention. Patterson has but lately again called the attention to the appendix, suggesting a careful examination of the latter in every dubious case of gastralgia. At least one such case has come lately to the attention of the author. A high official of the country suffered for a number of years from frequent paroxysmal attacks of gastralgia. Notwithstanding the many therapeutic measures used by his attendants to relieve the various attacks he was not getting any permanent relief. An intervening sudden acute attack diagnosed as appendicitis necessitated an immediate operation and the removal of the organ. Since that time his gastralgias have ceased and have never returned; their cause, the appendix, has been removed.

Hernias, external and internal, figure in the etiology of gastralgias. The small easily overlooked pea or bean-shaped protuberances in the median line above the umbilicus, tender upon pressure and oftentimes simulating painful points of an ulcer, may be the origin of violent attacks. Peritoneal adhesions, simple or tuberculous, perigastritis, intestinal coils adhering to the abdominal wall may also result in similar attacks.

The nervous system plays no negligible part in the etiology. Besides the gastralgiform pains common in most spinal diseases, true gastralgias are associated with locomotor ataxia, multiple sclerosis, syringomyelia, and the functional disturbances, hysteria, melancholia, etc. In tabes dorsalis gastralgia is an early symptom and often the first to call attention to this disease; in other degenerative conditions it may occur later in the disease and is not so characteristic as the classical "crise gastrique."

Hysteria and neurasthenia are very frequently associated with neuralgiform pains in various organs of the body. In hysteria these may be its only manifestation. The former may assert itself in the form of gastralgia only and be limited to the stomach in the same manner as it may limit itself to any of the other organs; paralysis of a limb, paralysis of the larynx with resulting aphonia, affection of the eye-muscles with consequent strabismus, etc. This is particularly true of the primary idiopathic cases, where no cause seems demonstrable and yet through very careful examination the association with a number of definite stigmata of hysteria, the latter can be diagnosticated. With "neurasthenias" the gastralgias are even more frequently associated than with hysteria.

To the blood intoxications producing typical attacks belongs tuberculosis. It is quite usual to meet even advanced cases in which the patient complains only of anorexia, achylia, or other symptoms of gastrointestinal catarrh, seemingly the only disturbing effects of the circulating toxins. In some cases the toxemia asserts itself in the form of typical gastralgias. An explanation is wanting; perhaps local irritation of the vagus terminal filaments in the diseased area of the lung may be the factor of transmitting the expression to the stomach endings. It is important to keep tuberculosis in mind especially if there are some symptoms suggestive of this disease.

Other blood intoxications causing gastralgias are malaria, arteriosclerosis, gouty diathesis, alcoholism, nicotinism, mercury, and lead. The last named is the most frequent of all of them. Even mild intoxications with lead are often accompanied by the severest attacks of gastralgia. Extreme anemia and chlorosis are also productive of attacks.

The third factor concerned in the induction of an attack is some immediate incident, which seems to call forth the attack proper. This is usually some psychic moment: a fit of anger, mental emotion, aggravation, psychic trauma, and is particularly influential in the primary idiopathic cases.

The onset of an attack is oftentimes preceded by premonitory symptoms, but these are not essential. If present, they usually consist of a tired feeling, indisposition for mental work, dull headaches, vertigo, drowsiness, fullness in the throat (globus), nervous eructations, etc. The attack proper begins with sharp, boring or lancinating pains, beginning at some point in the epigastrium and radiating backward to the spine and shoulders, seldom downward. The onset is independent of food inbibition appearing on one occasion before a meal, at another—after or between meals; it is independent of the kind of food and of the time or hour of the day. They are paroxysmal in nature and of variable duration, from a few minutes to an hour or more. During the attacks the patient is often found in an upright posture with his clenched fists pressing tightly against the abdomen, thus looking for relief. His face is pale, the skin cold and moist, his look anxious, his pupils dilated, his nose pinched, the pulse small and irregular, respiration shallow; the patient seems very weak or may be completely collapsed. During or after an attack he is taken with vertigo, nausea and vomiting and passes frequently large quantities of light-colored urine of low specific gravity (urina spastica).

The intervals between individual attacks are of various duration, irregular and characterized by freedom from any complaints. The patient seems in good health, has good appetite, good digestion, and is of usual disposition. The irregularity of the attacks, of their severity, of the intervals, and of their origin are characteristics of the disease.

But not in every case do we find the above described complex of symptoms with all its prominent features so characteristic of gastralgia; on the contrary, in a great number we have no such typical attacks, but milder and of a modified symptomatology. Some of the enumerated symptoms may predominate while others may be absent or remain in the background. These are the milder forms and the harder cases to differentiate from other diseases with similar suggestive symptoms. They are oftentimes mistaken for colics, indigestion, gall-stones, heart trouble, etc.

Because of the similarity of symptoms of the pathologically less serious diseases of gastralgia nervosa with those of a number of very serious diseases, the differentiation of the latter from the former may at times present a difficult problem. Mistaking a case of gastralgia for graver conditions (perforation of an ulcer, peritonitis, cholelithiasis, appendicitis) may not be followed by such serious consequences to the patient as diagnosticating the latter for the former; it may become very serious or even fatal. It is unusual though to diagnose the serious pathological diseases as gastralgia; on the contrary, we often assign the pains of gastralgia to an ulcer, gallstone colic, appendicitis, and other conditions, especially if transient. It is not unusual for surgeons to make a laparatomy for supposed ulcers of the stomach, gallstones, appendicitis, etc., to find upon opening the abdomen nothing unusual; later these cases prove to be nothing but pure neuroses. The writer has but recently witnessed such a case in the surgical division of the above mentioned hospital. The operation was undertaken for supposed gastric ulcer. Upon opening the abdomen the stomach, gall-bladder, and all other organs of the locality were carefully inspected but found perfectly normal. No cause seemed on hand for the gastralgiform attacks, the hypersecretion, and other symptoms simulating ulceration of the stomach. Thanks to the appearance of slight bladder disturbances and paresthesias of the soles of the feet several months after the operation, the attention was soon directed to the nervous system and the case was soon identified as a true tabes. Mistakes in diagnosis are frequent and usually due to poor attention or little consideration given to the gastralgias when confronted with an attack of colic in the stomach region. Let us, therefore, consider the most common diseases coming into consideration, when confronted with such an attack as described under symptomatology.

Cholelithiasis, cholecystitis, choledocystitis, etc., habitats of a nearby organ, may be ushered in with similar prodromal symptoms and present conditions similar to those of gastralgia. In the early stages when icterus is still absent, or in those cases where icterus is altogether wanting throughout the attack, the differentiation may present some difficulty. The history may relate of some previous similar attack with jaundice in a gall-bladder case, while in gastralgia the history will be that of a neurotic. The pains in the former begin at about the position of the bladder, at the intersection of the right costal border with the outer border of the rectus muscle and radiate more to the right of the median line, while in the latter the pains are felt to the left side of the median line and radiate toward left. Tenderness always absent in gastralgias, is usually found over the area of an engorged liver and its overstretched capsule; it is aggravated by pressure, while in gastralgias the contrary, pressure is more gratifying to the patient and gives him relief. Oftentimes a tumor of the obstructed and overfilled gall bladder may be felt in cholelithiasis, in gastralgias—none. The urine of gastralgia patients is passed frequently in considerable amounts, is of light color, low specific gravity and contains no abnormal constituents; in hepatic cases—it is of lesser quantity, dark, foamy, of high specific gravity, contains bile, urobilinogen, urobilin, an excess of indican, scatol, etc. The feces are also abnormal and may contain biliary stones, be light colored, fatty, pasty, etc. The intervals are not free from gastrointestinal symptoms in gall-bladder cases, while in gastralgias they usually are. If elevation of temperature or jaundice appear then the diagnosis is so much more simplified in favor of liver affections.

Left renal or ureteral colics should next be taken into consideration. The differential diagnosis may not be as difficult as in the above conditions. The difference in the chemical composition and the microscopical picture of the urine is so absolute as to enable one to make the diagnosis from the examination of this fluid alone. In kidney cases the urine is passed at short intervals with evident strangury, but in small quantities, because of the oliguria. It is of high specific gravity, strongly colored, sanguinous and may be loaded with uric acid crystals, urates, oxalates, phosphates in addition to hyaline casts, blood corpuscles and leucocytes. In gastralgia the urinary secretion is also frequently passed but is light colored, voluminous, of low specific gravity, and contains none of the above mentioned pathological constituents. The pain is located more in the lumbar or ureteral regions, which may be quite tender to pressure, radiates downward toward the loins to terminate in the meatus urinarius in the male or the labia minora in the female; in gastralgias such irradiation or termination is never present. Neither are backaches so common in the intervals of gastralgias as in nephrolithiasis. The etiology may also be characteristically different in the one case from the other; in nephrolithiasis an attack may result from some violent exertion (riding, jumping, running, horseback), a gastralgic attack would be induced by some unusual psychic shock. In some cases, with a meager panniculus the stone may be definitely located by a Roentgen examination and thus the diagnosis established beyond doubt.

Acute intestinal obstruction may have to be taken into consideration in differential diagnosis. The onset of intestinal cases is usually not so acute, but this should not be much relied upon, as gastralgias may also have a gradual onset; the symptoms are of more importance, some even pathognomonic. The "facies abdominalis," the difficulty in breathing with an immovable diaphragm, the fetor ex ore, the frequent eructation of foul smelling gases, the hiccough, the continued vomiting, first biliary later stercoracious are symptoms accompanying intestinal obstruction and never gastralgia. Besides, possible palpation of a sausage-shaped abdominal tumor, the oftentimes visible or easily felt peristalsis above the place of obstruction, the considerable meteorism, the obstinate constipation, the retention of flatus, the scantiness of the urine loaded with fermentation products, etc., will suffice to exclude gastralgia in favor of intestinal obstruction. In fact, the pictures of these two conditions when de-

veloped are so different that a separation presents no difficulty; only in its early stages it may give some trouble to do so.

Intestinal colic if severe as met with in the fermentation diarrheas, tubercular or non-tubercular bowel ulceration, may also be mistaken for gastralgias. This is especially true when complicated with gastroptosis, when the normal position of the stomach may be occupied by the greatly distended intestines, the place of the attack. We differentiate these cases from true gastralgias by the qualifications of the evacuations (extreme costiveness, unusual diarrheas), the presence of considerable bowel distension by the rumbling and gurgling sounds, periodicity of the pains, by the relief produced after the passage of the flatus, by the absence of vomiting, of severe collapse, by the scanty urine, excess of coloring matter, indican, scatol, etc. The abdomen is tender to the touch and in thin walled individuals the peristaltic movements of the intestines may even become visible. There are no globus, urina spastica or other manifestations of nervous gastralgia.

Pancreatitis acuta, sialolithiasis, embolism, and hemorrhagic infraction of the pancreas are very infrequent factors, but in differential diagnosis have still to be given attention. In the above conditions the symptoms appear acutely resembling the onset of gastralgia. They usually are of a severe type, are located in the left hypochondriac region and accompanied by severe nausea and vomiting soon terminating in collapse. In some cases death results so soon that it is practically impossible to attempt to make a correct diagnosis. In the more chronic and less severe forms we may differentiate the same from gastralgias by the characteristic voluminous, adhesive pancreatic stools, loaded with all varieties of fats especially neutral, by the presence of undigested muscle fibers with retained nuclei, often undigested starches. The stools must be examined after a day or two of a special diet, such as Schmidt's. The presence of sugar in the urine or alimentary glycosuria will also point to the pancreas as the source of the trouble. If we have accompanying the above symptoms jaundice, which results from pressure by an enlarged head of the organ, as in new growths, or symptoms of portal obstruction (dropsy, enlargement of the liver, enlarged spleen, gastrointestinal catarrh) from outside pressure by enlarged glands upon the portal vein, then the diagnosis becomes more simple.

But in one form of pains of pancreatic origin which are hardly accompanied by definite pancreatic symptoms, the diagnosis is extremely difficult and usually made at the autopsy. This form is extremely dangerous and may terminate by sudden death, as in the case Zenker relates. These are the so-called "neuralgiæ cœliacæ" and are supposed to be provoked by some sudden pressure of the pancreatic substance upon the sympathetic plexus, with which it is in such close relationship anatomically and topically. Luckily these cases are not frequent.

Another disease to be considered is angina pectoris. It is well known how different may be the character and how various are the directions into which the extremely acute pains of this disease may take situation, from the usual course along the distribution of the ulnaris to the rare neuralgiform pains of the testicle. This extensive irradiation is explained by the anatomical arborization of the vago-sympatheticus. In that form of angina pectoris described by Neusser, "the typus abdominalis," in which the pains are localized in the abdomen, the symptoms may resemble gastralgia in every detail and it is then possible to mistake the two. It is of particular importance to think of this possibility when considering the prognosis of a case: the latter may terminate fatally, while the gastralgia need not menace life. It is, therefore, advisable to be on guard when determining the prognosis of an attack of gastralgiform pains in an elderly person (or a younger person with syphilitic history) with sclerotic changes in the arteries, high tension pulse without kidney involvement, etc., unless we can surely exclude angina pectoris. In the rest of the cases the feeling of oppression or tightness of the chest, brady- or tachycardia, irregular heart rhythm, sensation of terror or impending death, the usual radiation of the pains to the two inner fingers of the left hand, or physical symptoms of myodegeneratio cordis will suffice to exclude gastralgia from true angina pectoris.

Intercostal neuralgia, left sided, has several symptoms in common with gastralgia nervosa. In intercostal neuralgia the pain radiates in the direction of the ribs, is more superficial and oftentimes accompanied by herpes zoster along the course of the nerve affected or its branches. Nor are the pains as severe as those of gastralgia and do not produce collapse. A careful examination will enable the exclusion of this condition without much difficulty, especially if all other symptoms characteristic of gastralgia are taken into consideration.

Having thus excluded diseases with similar symptomatology of organs other than the stomach, let us now consider affections of the latter coming under the same heading. There are a number of stomach disturbances which are accompanied by pains of greater or lesser severity (catarrhs, hyperacidity, acute indigestion, bulimia), but the pains have a different character and very little in common with the typical gastralgia attacks, thus coming hardly into consideration under this heading.

It seems unnecessary to state, that in every case of gastralgia it is essential to give the patient the most scrupulous examination: (1) in order to exclude anatomical lesions of the stomach wall; (2) to exclude the possibility of other organs being diseased and being the seat of pains, and (3) for the purpose of discovering the presence of remote causes instrumental in induction of the attack reflexly. The first is the most important reason why full attention should be given to the stomach itself: a careful history, careful inspection, palpation, auscultation, or inflation may reveal sufficient evidence perhaps to make further investigation unnecessary. But a stomach examination without a chemical analysis of its contents, and without a radiologic examination after the usual bismuth meal is an incomplete one; that latter test will often reveal conditions which may greatly surprise the examiner. Even if the state of the stomach has been sufficiently determined by physical examination to the thorough satisfaction of the physician, it is still advisable to employ the chemical and radiological tests for verification and additional proof of his previous findings. Such examination may soon enough indicate whether or not the neuralgiform pains are due to direct stomach lesions, as gastric ulcer, pyloric obstruction, pylorospasms or not.

In stomach ulcers, attacks if present will have some connection with the ingestion of food, in

gastralgia nervosa the onset is independent of it. Nor are the intervals in ulcerative conditions altogether free from disturbances; they are also shorter and periodically more regular. In addition we have more definite symptoms of an ulcer to be guided by: a clean red tongue, sour eructation, heartburn, pain in the epigastrium, often depending upon the patient's posture, tenderness aggravated upon pressure, sanguinous vomiting or bloody feces in occult cases, tender nerve points along the spine, etc.—all symptoms unusual to gastralgia nervosa. Some of the therapeutic tests may also be employed for verification; a dose of bicarbonate of sodium administered during an attack may terminate the same if due to ulcer, neutralizing the hyperacidity, while in gastralgia—the alkali will have little or no effect; on the contrary, the administration of a teaspoonful of cognac with pepper, as recommended by Chvosteck, will considerably increase the pain of a gastric ulcer, while in gastralgia it often affords immediate relief. The electric current may also be employed in these cases for diagnostic purposes, applied inside or outside the stomach the galvanic current will give immediate relief if the attack be of nervous origin. Generally speaking, the difficulty of differentiating these two diseases in most cases is not very great, although in certain individual cases it may be extremely difficult and even impossible. This is particularly true of duodenal ulcerations, whose symptomatology is shy of many of the above enumerated symptoms. In such cases we have to rely mainly upon the presence of blood in the stools and in addition upon the more or less constant localization of the pain to a definite point of the abdomen, its appearance, usually 4-6 hours after meals, its dependency upon the variety of food ingested and the presence with gastrointestinal disturbances between attacks. But in spite of it all, there are still a number of cases, except duodenal, in which even the most careful examination, including Roentgen rays, fails to reveal the presence of an ulcer, and yet there is one indolently lurking somewhere in the folds of the gastric mucosa, as its future course may show. Therefore Riedel and Leube have advised in every case of so-called idiopathic gastralgia, where anatomical lesions seem impossible to be located the case should still be considered as one due to ulcer, and the patient placed upon an ulcer diet, closely observing for some time its effect upon the future course of the attacks.

Concerning the recognition of the oftentimes pronounced pains accompanying obstruction of the pyloric orifice of the stomach (from within or without) and their differentiation from gastralgias, it may be said, that they are usually of a lesser degree of severity and appear shortly after the ingestion of food and at short intervals (5-15 minutes). Most every painful cramp is accompanied by rumbling sounds, the liquid chyme forcing itself through the narrowed opening, while the peristaltic and antiperistaltic motions of the stomach wall are very frequently observed through the abdominal walls of some individuals. As a rule these patients are emaciated either as a result of imperfect digestion and inanition, or because of the original disease, the cause of obstruction; besides, the stomach musculature is also hypertrophied; another factor which helps to make the peristalsis visible. At times the pyloric end may be palpated through the abdominal wall. In addition, stenosis is most always accompanied by gastrectasia with the lower curvature of the stomach, perhaps at or several fingers below the umbilicus, with periodical vomiting of large amounts of ill-smelling liquid containing a multitude of sarcinæ, yeasts, and other products of fermentation, with its feeling of distention, fullness, dragging down pains, which are unusual with gastralgia nervosa, and thus speaking in favor of obstruction.

Acute peritonitis may in its early stages because of its acute onset, severity of pains, nausea, vomiting and collapse be confounded with an attack of gastralgia. Later the symptoms develop so differently that to mistake one for the other seems inexcusable; the tenderness and rigidity of the abdominal wall, the vomiting, obstinate constipation, considerable meteorism, syngultus, the characteristic posture in bed, the indicanuria—reveal the true cause of the pain and soon dispel any remaining doubt as to diagnosis.

*Secondary reflex gastralgias.*—Having excluded the possible involvement of the other organs in a case of neuralgic pains in the upper abdomen, and having thus decided that we have before us a case of true gastralgia nervosa, the next necessary step is to endeavor to locate the cause of the attack. From a therapeutic standpoint it is imperative, as we have no particular special treatment of the disease, and the cure depends entirely upon the correction of the underlying cause. In order to locate the latter it is necessary to examine all those organs, which may cause reflexly such attacks, as enumerated under pathology. In females a gynecological examination should never be neglected whether subjective complaints are present or not. The examination may oftentimes disclose conditions, which are more than sufficient to induce such attacks. Neither should the appendix be slighted in the examination, a rectal examination should be a matter of routine. Hernias must be investigated for, but here is where we may be led astray: it is not difficult to diagnose hernias when able to palpate them, but when confronted with intraabdominal varieties, the case may become very perplexing. Treitz's duodeno-jejunal hernias, hernia diaphragmatica, bursæ omentalis, subcœcalis, etc., are nearly inaccessible to diagnosis, but may produce all kinds of symptoms, including severe gastralgias; they may be suspected though in some cases when other causes are excluded, by the localization of the origin of the attacks, the constancy of this position, the gastrointestinal disturbances, constipation, distention of the bowels, but often positively diagnosed by repeated radiographic examinations at various intervals after the intake of bismuth.

Hernias of the median line are easily excluded if proper thought is given to it. They appear in the forms of buttons or small nodules, are tender upon pressure, feel hard or lobulated, and the skin covering it is freely movable. They consist of protruded portions of preperitoneal tissue, omental fat (lipoids), and rarely even stomach wall.

Tabes dorsalis of which the gastralgic pains or "crises gastrique" in the preatactic stage are the earliest manifestations, must always be borne in mind, and other early symptoms of the disease, such as loss of Achilles tendon reflexes, paresthesias, pin point, or Argyll-Robertson pupils, positive Wassermann should be looked for. If present, they constitute sufficient indication to begin definite antiluetic treatment, staving off thereby further progress of the disease, the degenerative processes, for a number of years and thus making the patient's

life so much more comfortable for the time to come. If the gastralgias appear in the latter stages when the degenerative symptoms are already distinct, the diagnosis of the cause then presents no difficulty. The same is true with the other nervous diseases, with which abdominal pains are common; multiple sclerosis, syringomyelia, myelitis. They all have to be diagnosed by associated symptoms, common to these diseases. The gastralgic attacks occurring with hysteria, neurasthenia, and melancholia are not infrequent and are recognized by symptoms and stigmata of the disease, which are so well known, that a repetition seems unnecessary. The attacks in these cases are often very stubborn, resist all rational treatment, and are characterized by relapses following the slightest functional or psychic disturbances.

This brings us finally to the blood intoxications conducive to gastralgias. In malarial poisoning the attacks occur in periodical order with chills, fever, and sweats as the other manifestations of this disease. The locality may lead to malaria as a clue, while if melanin or the plasmodium is found in the blood the diagnosis is certain. In doubtful cases a course of quinine may help to decide.

Gastralgia in the course of *anemia, chlorosis* may be diagnosed by the characteristic blood picture of the respective disease or symptoms of the same: oligocythemia, polychromatophilia, anisocytosis, the hemoglobin index, normoblasts, etc.

The recognition of tuberculous intoxication as the cause of the attack is of unquestionable importance. It occurs usually in that stage of the disease, the initial stage, when lung symptoms may be extremely indefinite, but when proper attention will give the patient enormous benefit. If suspected, a most searching examination of the lungs, glands, abdomen should be made, the sensitiveness of the cervical plexus tested, Kroenigs' and Williams' symptoms looked for, an *x*-ray plate made, or tuberculin injected as a test. The absence or presence of definite evidence will substantiate or reject the suspicion of tuberculosis as a cause.

Of the poisonings lead occupies by far the leading position as a factor in the etiology and thus should first receive our attention in differential diagnosis. It is rather remarkable how some individuals are peculiarly susceptible to the effects of lead and become intoxicated if exposed to it even slightly or coming in contact but for a short period of time. It had been the opportunity of the author to attend to several of the severest gastralgic attacks following short or seemingly insignificant exposures to lead poisoning. The latter may be recognized only when other symptoms common to this disease are present: basophilic granulations of the erythrocytes (very typical), anemia, constipation, high tension pulse, paresis radialis or wrist drop, arthralgias, etc.

Arsenical or mercurial poisonings must also be remembered. They are recognized only by the symptoms typical of these poisonings, as the neuralgic attacks have of themselves nothing characteristic.

Finally, after our efforts to locate definitely the place of irritation or origin of the gastralgic attack were unsuccessful we may come to the conclusion that the case under consideration is of idiopathic origin. But this decision has to be accepted very cautiously and not until every effort has been made and all means exhausted to exclude every possible organic cause as a factor, and even then we must still bear in mind, that a number of just such cases have some underlying cause which we are unable to disclose, as the number of true idiopathic cases is comparatively small.

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## THE ALBUMIN ANALYSIS OF THE SPUTUM.

### ITS GREAT VALUE AS A RELIABLE AND POSITIVE DIAGNOSTIC LABORATORY METHOD FOR DIFFERENTIATING PULMONARY TUBERCULOSIS FROM OTHER PULMONARY DISEASES.

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From the days of Laënnec to the present time, the examination of the chest, either for the study of the normal conditions of the intrathoracic organs, or for the interpretation of the various pathological changes in the chest cavity, has been usually by means of the physical methods. Of all the diseases of the chest that of the lungs has always claimed the physician's closest attention, and particularly has this attention been directed to the interpretation of the physical phenomenon, as is observed in pulmonary tuberculosis. By the physical means now at his command the internist finds but little difficulty in pointing out definitely the condition of the diseased lung, and its extent of involvement in the moderately advanced and far advanced cases of pulmonary tuberculosis, different in the early incipient stages of the disease when there is still good hope of effecting a cure or, at least, an arrest of the tuberculous process. In beginning tuberculosis when the lesion is still very small an examination of the chest, by physical methods, will not always give us a true picture of the pathological conditions of the underlying lung tissue, and we are oftentimes forced to try to arrive at some definite conclusion by means of other methods, and especially is this true in the stage of pre-incipiency, termed by L. Landouzy "Bacillary Stage," that a positive or, at least, a relatively positive diagnosis would be most desired.

Diagnostically tuberculin may be used to indicate in a limited number the beginning tuberculous process in the lungs; however, in the greater number of cases of pre-incipient phthisis the use of tuberculin is not sufficiently distinctive nor positive, and while the radiograph may be of definite service in advanced tuberculosis, it also will not aid us very much in making a diagnosis of beginning infection. It is in this very incipient stage of tuberculous infection that a physical examination combined with laboratory methods will often aid us to arrive at positive conclusions, hence, laboratory diagnosis should be applied in every case of suspected pulmonary tuberculosis. It will accord in many cases with the clinical picture enabling us to make a definite diagnosis when the physical signs are still very meager. The examination of the sputum is, next to that of the blood, of the utmost importance. Not a microscopic examination to determine the presence of the tubercle bacillus, for, if bacilli are already in the expectorations the case has in all probability long passed its stage of incipiency, but a chemical analysis of the sputum showing the presence or absence of albumin. In recent years our attention has been directed to this special phase of laboratory

diagnosis, and in particular have European clinicians, chiefly French physicians, given it much interest and attention, and they have done an enormous amount of work in this direction. Among the first and original in this line of investigation are the labors of Roger et Levy-Valenci.[1] They reported the sputum examinations of a total of 1,200 cases of positive tuberculosis as represented by the three stages of the disease and the chemical analysis of the sputum nearly always gave an albumin positive reaction (negative in only seventeen samples). Lessieur[2] states correctly that all sputa containing the bacillus of Koch, demonstrated by direct microscopic examination will invariably give a positive albumin reaction, but if the sputa give a negative albumin test the presence of the tubercle bacillus can not be shown by either direct microscopic methods or by any other method, and that the albumin reaction is usually absent in those affections which do not invade the bronchopulmonary parenchyma but is present, persistent and constantly, in the course of all pneumonias, caseous broncho-pneumonias also often positive in cardio-renal disease. In 190 observations the albumin reaction was positive in 100 per cent. with bacilli in the sputum and the diagnosis of pulmonary involvement demonstrable. According to Rodriguez Alves[3] the albumin reaction exists in all the various phases of the disease and is always present at every stage, incipient or advanced and Roger[1] concludes that the sputum of the tuberculous is invariably albuminous, hence the absence of albumin from the sputum always permits the elimination of suspected tuberculosis, but the presence of albumin does not always allow the positive assertion that a suspected patient is suffering from pulmonary tuberculosis because albumin is found in the sputum of individuals suffering from other than lung affection; it is, however, significant that a negative albumin content is positively non-tuberculous. An interesting contribution by A. Delhage[4] is worthy of note. He found the reaction negative in 71 cases of acute bronchitis, in 14 cases of chronic bronchitis with emphysema, in two cases of whooping cough and in one case of pneumonoconiosis; positive in all cases of pneumonia, bronchopneumonia, pulmonary gangrene, pulmonary stasis and in 78 cases of pulmonary tuberculosis, second and third stages, and equally positive in 24 out of 48 cases of suspected tuberculosis incipiens. He concludes from these findings that the albumin reaction indicates a pulmonary change within the parenchyma, an activity, that neither the tuberculin reaction, neither auscultation or percussion nor radiography is capable of differentiating from an inactivity. Lecalplain[5] states that in all forms of progressive pulmonary tuberculosis, immaterial in which stage it may be classed, the albumin reaction is always positive, that if the sputum is constantly albuminous without the Koch's bacillus being present, a repeated and diligent search should be made; finally the bacilli will also be found.

L. Guinard's[6] contribution is also very interesting. He vary carefully reviews the labors of his pupil, Smolizanski, confirming the observations of Roger. Smolizanski made 255 sputa analyses at the Sanitarium at Bligny. Incipient or first stage cases, 40; moderately advanced or second stage cases, 104, and far advanced or third stage, 111. Thirty-three of the 40 incipient cases were positive and seven negative; 103 out of 104 moderately advanced cases were positive, only one negative, and the 11 far advanced cases all positive, and he concludes that the negative reactions show that the expectorations indicate the disease arrested or that the foci were at the time latent or inactive but that in all forms of an active process the albumin reaction was diagnostically positive. Geeraerd[7] states that the albumin reaction if not of specific value is nevertheless a sign of great importance which in all cases in which the cutaneous reaction is positive indicates a tuberculous involvement.

The sputa of 108 suspected tuberculous patients presenting themselves for examination were first carefully collected, then chemically tested for albumin. As all were ambulatory cases, the different samples of sputa were from individuals representing all stages of pulmonary tuberculosis, from infectious and from non-infectious, as well as from non-tuberculous, from bronchitic asthmatic and congestive. The chemical analysis showed that 33 patients were non-tuberculous, the sputa being entirely free from albumin, and of the remaining 75 all gave a more or less positive albumin reaction, 10 giving a reaction indicating a mere trace. These different albumin reactions, according to the amount of precipitated albumin shown in the test tube when a ferrocyanide solution was added, were all placed into three arbitrary groups. A light albumin precipitate was usually designated as belonging to group X, the one showing a massive, heavy or dense precipitate was placed in the 3X group and an intermediate albumin sediment into group 2X; accordingly 23 belonged to group X, 19 to group 3X and 23 to 2X. In 30 of this series of 65, microscopically the sputum showed unmistakably the presence of the tubercle bacillus and the association of the bacillus and albumin in the same sample of sputum was always positive. Every sputum examination showing microscopically the presence of the Koch's bacillus gave a positive albumin reaction, but not every sample of sputa giving the chemical reaction for albumin determined the presence of the tubercle bacillus, nor did the amount of albumin present give any possible indication as to the number of bacilli present. One sample of sputa of this series giving an albumin reaction sufficient only to be placed in group X, as well as one sample from the 10 indicating a mere trace, gave a microscopic picture of many bacilli in each field, while on the other hand a few of the series which indicated chemically a massive albumin content showed only a few or an occasional bacillus in a given field, hence neither from a massive albumin content of the sputum can we infer the presence of tubercle bacilli in the microscopic picture, nor can we conclude or estimate from a stained specimen with any degree of accuracy, with either few or many bacilli in the field, the probable intensity of the albumin reaction. The statement made by Ch. Lesieur[2] that a massive albumin content is usually more serious, as the tubercle bacilli are then usually more numerous or abundant, has not been corroborated in this series. Now the remaining 35 examinations of this series, all of which gave a positive albumin reaction without the tubercle bacilli being present, were grouped with the former 8 belonging to 3X, 11 to 2X and 16 classed as X. The physical findings of the first or 3X group, 8 in all, were all positive and all reacted to the tuberculin test. Of group 2X the physical findings

were fairly positive in 6 and negative in the other 5. The sputum of 2 of the latter was that from young individuals who were reared in a tuberculous home, in the family of each only recently a death occurred from pulmonary tuberculosis, and out of 8 of the X group the physical findings were only in a measure positive and negative in the remaining 8. An analysis of the sputa of the 10 cases giving an albumin reaction indicated by a mere trace, one showed positive pulmonary findings with laryngeal complications, and the sputum gave a microscopic picture with many bacilli in each field, chiefly in clumps, and in 6 the diagnosis of incipient pulmonary tuberculosis was only fairly well made from the physical signs, the remaining three were most likely negative.

In summarizing the results of the chemical sputa analysis of these 108 samples we glean the following facts: 33 sputa samples were free from albumin and 75 were albuminous. In 10 albumin was present as a mere trace of which one showed many bacilli in the microscopic field; 19 showed a massive albumin content of which 11 were bacilli positive and 8 bacilli negative; 23 moderately albuminous, 12 being bacilli positive and 11 bacilli negative and 23 simply albuminous with 7 bacilli positive and 16 bacilli negative or 31 bacilli positive with albumin in varying amounts and 44 albumin positive but bacilli negative. The 33 samples of tested sputa with negative albumin findings must be classed as sputa obtained from positively non-tuberculous individuals; 31 albumin positive sputa were also tubercle bacilli positive showing that the sputa was that from patients undoubtedly tuberculous, the remaining 44 samples although albumin positive were bacilli negative but for that fact should not be classed as non-tuberculous sputa. In the case of one-half or 22 of the latter, albumin positive and bacilli negative samples, a fairly accurate diagnosis was made by physical examination corroborating the albumin analysis and in the remaining 22 albumin positive only a tentative diagnosis could be made and it is most probable that with repeated examinations and the use of tuberculin many, even with negative physical findings, will be placed in the positive class. In this connection it may be of interest here to note that in 5 samples of sputa showing by chemical test the presence of albumin, but, no Koch's bacillus found even after a careful search over more than 30 field in each, that after injecting a milligram of tuberculin, intracutaneously, followed by a positive reaction, a second sputum examination gave approximately the same albumin content as in the first, but in addition the microscopic field now revealed many bacilli.

The chemical analysis of the sputum of the tuberculous or suspected tuberculous is deserving of a much wider and more practical application than it is now receiving on account of its simplicity, its precision and its easy applicability, above all because of its determined negative value, and from the convincing results obtained we must conclude that in sputum examination we are dealing with a method which should be classed with the most accurate of the various diagnostic means. It is of especial value in those cases of pre-incipiency when the clinical picture is not at all positive, the case is still closed, non-infectious, the bacilli are usually not present at this early stage it is then that the albumin reaction may point to a distinct positive tuberculous involvement for the absence of albumin from the sputum is always negative for tuberculosis. Every case of suspected pulmonary infection should therefore receive, first, a thorough and careful clinical examination, next, if needed, a diagnostic intradermal tuberculin application and last an accurate chemical sputum analysis and the paramount importance of the last can not be too vigorously emphasized.

*The importance of properly collecting the sputa.*—A proper way for collecting sputa is most essential to the correct interpretation of the albumin reaction. The patient must be instructed to cough up deep from the lungs, usually in the early morning, the first on rising, and place the sputum into a clean sterile bottle and securely close it with a well fitting cork stopper. He must be specifically instructed not to collect the secretions from the mouth, buccal cavity, nasopharynx or from the throat but only such as he can bring up from the bronchial tubes, for this alone is suitable for making a reliable albumin test. To wash out the mouth or gargle with a few mouthfuls of warm water will usually clear the mouth and throat from all adherent secretions after which the sputum should be collected. A properly collected specimen should be examined at once, in any event, it must not be more than about 6 hours old, in cold weather an expectorated sample will keep for 24 hours before undergoing fermentative changes. Only the freshly collected sputum should be tested, decomposed secretions will often give a reaction simulating albumin. No antiseptic solution or any preservative agent should be added before making the albumin test.

*Directions for making the sputum test.*—As the technique is so simple, the results so satisfactory, and the necessary apparatus so few the examination of the sputum should become a routine method in the case of every suspected or positive tuberculous. Put 5 c.c. of sputum into a glass cylinder of about 25 c.c. capacity (glass cylinder must be supplied with a well fitting ground glass stopper), add 5 c.c. of distilled water and about 10 drops to 1 c.c. of glacial acetic acid, replace the stopper, shake well, and set aside. Shake occasionally during the next 20 or 30 minutes, then proceed to filter. If the sputum is suitable for filtration it will have separated into three distinct layers reminding one very much of an expressed stomach content ready for testing. Should the middle or watery portion of the sputum solution be still a little opaque, showing the presence of some remaining unprecipitated mucin add a few drops more of the glacial acetic acid, again shake well and set aside as before. The fluid portion now appearing clear, proceed to filter it through a plain wetted filter and test the clear filtrate for albumin in the usual way by either Heller's test or the heat test, both of which are very satisfactory, but at my hands the ferrocyanide test has proven the most reliable and accurate. If to an albuminous solution of sputum in a test tube a drop of 10 per cent. ferrocyanide of potassium solution is added, an approximate idea of the amount of albumin can at once be gathered by observing the drop of ferrocyanide solution carrying down the precipitated albumin and one can also notice the difference between a massive albumin content and one in which only a small amount of albumin is present by the manner in which the precipitated albumin falls to the bottom.

*Conclusions.*—1. If the chemical examination of the sputum is albumin positive but tubercle bacilli negative with physical findings obscure and

indistinct, the intradermal injection of tuberculin will often change both to positive.

2. A positive albumin reaction and a positive tuberculin test are of far more importance diagnostically than the negative clinical examination, also the negative value of the albumin and the tuberculin tests are of far greater, of more positive, value than the negative clinical examination, because, a negative clinical diagnosis may still be doubtful, may not be positively negative.

3. A single positive sputum finding can not be considered positively and diagnostically tuberculous but a single negative albumin reaction can assuredly be considered as non-tuberculous.

4. A negative sputum for albumin is also microscopically negative for the tubercle bacilli; usually with the open or infectious cases both albumin and bacilli will be found in the sputum, while, in the closed or non-infectious cases albumin minus the bacilli will be present.

5. The positive albumin reaction is a sure indication of an inflammatory invasion of the pulmonary parenchyma which may be tuberculous, pneumonic or congestive, and the reaction is always negative when the inflammatory process has not affected the substance of the lung as in acute and chronic bronchitis and asthma, hence the reaction is of most importance in those cases in which the pulmonary infection is not yet manifest and the differential diagnosis lies between tuberculosis and simple bronchial catarrh.

6. Albumin in the sputum is often the forerunner of the tubercle bacillus and albumin may be found in the sputum many months before the bacilli make their presence known, hence a positive sputum content with but meager or very slight physical findings and negative bacilli favors a possible incipient or pre-incipient tuberculous diagnosis, and

7. Like all clinical signs it must be considered with all the other signs, including both subjective and objective, to arrive at positive conclusions.

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## EPILEPSY.*

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As it would be impossible in one brief paper to cover the entire subject of epilepsy, we shall confine out time to the etiology and some of the mental phenomena of epileptics.

This disease is one of the oldest to which man is heir, and we find early descriptions of it by Hippocrates, who contended against the popular belief of his day that it is a disease inflicted by the Gods and said the only reason for ascribing a divine origin to it, is because its nature is incomprehensible. The epileptic paroxysms he believed due to a struggle between the humors and the pneuma (or breath) in the vessels. He was also a firm believer in hereditary transmission of the disease. Lucretius, in his poem, "De Rerum Natura," refers to "the fermenting humors" as the cause of the convulsions in his classical description of the Grand Mal seizure:

"Oft, too, some wretch, before our startled sight,
Struck as with lightning, by some keen disease
Drops sudden: By the dread attack o'erpowered
He foams, he groans, he trembles and he faints;
Now rigid, now convulsed, his laboring lungs
Heave quick, and quivers each exhausted limb.
Spread thro' the frame, so deep the dire disease
Perturbs his spirit: as the briny main
Foams thro' each wave beneath the tempest's ire,
He groans since every member smarts with pain
And from his inmost breast, with wontless toil
Confused and harsh articulating springs.
He raves since soul and spirit are alike
Disturbed throughout, and severed each from each
each
As urged above distracted by the bane.
But when at length the morbid cause declines,
And the fermenting humors from the heart
Flow back—with staggering feet first treads,
Led gradual on to intellect and strength."

Among the more recent authorities Spratling defines epilepsy as " a disease or disorder affecting the brain, characterized by recurrent paroxysms which are abrupt in appearance, variable in duration but generally short, and in which there is impairment or loss of motor co-ordination, with or without convulsions."

Turner says, "Epilepsy is a chronic progressive disease of the brain, characterized by the periodic occurrence of seizures, in which loss of consciousness is an essential feature; commonly associated with convulsions, and frequently accompanied by psychial phenomena of a well defined type; occurring generally in persons with a hereditary neuropathic history, which shows itself in signs, or stigmata of degeneration; running its course uninterruptedly, or with remissions, over a number of years, and terminating either in a cure, in the establishment of the confirmed disease, in delusional insanity or dementia."

Epilepsy is the "morbus sacer" or sacred disease of several centuries before the Christian era, so called because certain priests were presumed to be in epileptic seizures just prior to making their prophecies; it is "the priestly disease" of the Greek, and a priest who was subject to epileptic seizures was thought to possess a higher order of sanctity. It is the falling sickness, spells or fits of to-day, and the poor, unfortunate subject is kept in the background of the family circle, his school life limited, he learns no trade and is frequently made to feel that he is out of place among his fellow men.

We no longer attribute the cause of epilepsy to the benevolent interest of mythological deities, to vapors and humors arising in the body, nor the possession by devils. Most pathologists will admit that there has been no lesion found in a sufficient number of the various forms of epilepsy to consider it to be the cause. Certain changes in the nervous

*Read before the Montgomery County Medical Society.

system, as a cortical gliosis with chromatolysis of the cortical cells, blood changes and changes in certain glands have been observed, but what relation they bear to the disease cannot at this time be positively known, some writers claiming these changes to be the etiological factors, while others of equal authority advocate opposite views.

Possibly the most satisfactory work is being done along the line of abnormal metabolism—observation made on the blood, urine, sweat, and gastric juices immediately preceding and following a convulsion have shown a condition of hypertoxicity, though in the interval this has been found much reduced or normal. Uric acid has been claimed as the cause of the seizure (Haig), the carbamate of ammonium (Krainsky) has also been mentioned, while Donath has suggested cholin, a substance found in the spinal fluid, as the cause, but this has also been obtained from paretics and senile dements. Ceni mentions cytotoxin as the cause, but none have shown conclusive proofs. The convulsions of some epileptics appear more like the discharge of an accumulating cause than a constant pathological change in the nerve cells, and during the interval between seizures many epileptics appear like normal persons. That the seizures are due to an accumulation of some toxic substance in the body is further indicated by the symptoms common to epileptics, as drowsiness, headache and faulty elimination; in some cases the existing gross brain changes account for the epilepsy, but even in these some other factor may play a part in causing the paroxysm. We also meet with similar convulsions in uremia, lead poisoning and chronic alcoholism, which we look upon as being due to the presence of toxic matter in the system. And the more we see of the so-called "epileptiform" convulsions observed in these diseases and in sclerosis of the cerebral vessels and hear of senile and alcoholic epilepsy the more we are inclined to think that the present conception of epilepsy will in time cease to exist. With further knowledge of brain lesions and autointoxications the greater number of cases of epilepsy will be reclassified and the name idiopathic epilepsy will be discarded.

A causative factor of epilepsy with which we must reckon is that abnormal state of the nervous system, which stimulated by some exciting cause inaugurates the seizures, and to some extent the first seizure acts as a factor in inducing those that follow, forming an epileptic habit, as it were.

As to predisposing causes, heredity, in this as in many other diseases, leads the van, and in the study of epilepsy we are forcibly reminded that "like begets like." Spratling found in a series of 1,070 epileptics (660 made and 410 female) that 17 per cent. had epileptic parents, and this direct inheritance seemed slightly more marked in female epileptics. In the same series he combined the inherited influences, epilepsy, insanity, alcoholism, tuberculosis and other diseases, and found that 56 per cent. were included. He found alcoholism in the parent a cause in 16 per cent. of the male and 12 per cent. of the female epileptics. In 7 per cent. of the male and 10 per cent. of the female epileptics insanity in the family was found. Gowers in a study of 2,222 epileptics found heredity to play a part of 40 per cent.

The average age at time of onset is from 9 to 10 years, and when epilepsy appears after 30 years of age it strongly suggests cerebral changes due to syphilis. One author (Fore) claims that epilepsy is more frequent in females, though what statistics we have seen show the opposite sex to be more often affected (20:16 Spratling).

Reflex causes, such as eyestrain, adenoids, nasal polypi, hypertrophied turbinates, intestinal worms and tight prepuce have been mentioned, and by causing a constant irritation on an already abnormal nervous organization they undoubtedly must be considered, though many epileptics have had their eye condition corrected, the polypi, turbinates and prepuces removed, dosed with santonin and quassia to remove the intestinal inhabitants, but still the seizures continue. Spratling states that in studying 1,800 epileptics "he is unable to recall a case in which he felt the whole cause to lie in any anomalous condition of the visual apparatus," while Stevens, Ranney, and Gould claim eyestrain to be a prominent cause of epilepsy.

Epileptic seizures occur most frequently during sleep, and Pick has called attention to their frequency during deep sleep, that is immediately after falling asleep and an hour or two before waking, at a time when the maximum of brain anemia is present. Clark explains their occurrence during sleep by the lessened inhibitory control, while Haig believes it to be due to the variations in the reaction of the blood.

The mental state of epileptics varies within wide limits, and we may find many symptoms which characterize other psychoses. The epileptic character is in most cases distinctive, though changeable. Grasset sums it up as follows: "On the one hand they are somber, tacitturn, defiant, suspicious, always ready to fly into a passion, to hurt people, to become enraged and to strike; on the other hand, they are contrary, obsequious, obliging, wheedlesome, full of effusion and gentleness. In reality epileptics are all or nearly all irritable, subject to attacks of sudden, violent, and ferocious transports of rage during which time they do not, as it were, belong to themselves. This irritability is the keynote of their character. Many have in addition vice and perverse instincts. Many are greedy and violent. They frequently have a tendency to a sickly piety or a sort of excessive religiousness, mixed with hypocrisy."

Some epileptics go through life having a variable number of seizures, and outside of their mental dullness following a convulsion they are apparently normal persons. The mental symptoms bear no fixed relation to the type, severity or frequency of the convulsions, and several cases have been recorded in which no definite convulsions were observed, yet they manifested profound disturbances. By some authors the periodic alcoholic indulgence known as dipsomania is claimed to be epileptic in nature.

The usual terminal state of the epileptic is dementia: he becomes in the end a mere vegetating organism, but in noting the exception to this rule Sir Lauder Brunton (1901) says, "It is quite true that some of the most remarkable men in the world's history have been epileptics, but I do not think that Julius Cæsar, Napoleon or Mohammed were great because they were epileptics. As a rule epilepsy tends to destroy mental power rather than to increase it, and the curious lethargy which Napoleon exhibited at the battle of Leipzig and which there led to his defeat and consequent ruin is probably rather to be ascribed to his epileptic tendency than to the indigestible bun which is said to have led to

the disaster. Julius Cæsar and Napoleon were great men not because of their epilepsy, but in spite of it. And the visions of Mohammed alone would not have given him the extraordinary power over his countrymen and over the then known world had it not been backed up by extraordinary mental power in the interval between the fits."

We might add that Ann Lee (1758) who became the leader of the Shakers and brought a colony of that sect to America must have possessed other powers than her epileptic visions and the belief that she was inspired and the woman alluded to in Revelations (Chapter XII, 1st and 5th verses), "A great wonder appeared in heaven; a woman clothed with the sun, and the moon under her feet, and upon her head a crown of twelve stars. And she brought forth a man child who was to rule all nations with a rod of iron; and her child was caught up unto God and to his throne."

The common symptoms we observe when interviewing an epileptic are some impairment of memory, abundant conceit and self-assurance. Their religious fervor is often strongly contrasted by their conduct. We have known them to consign us to hell with many adjectives and even threaten personal violence because they were not permitted to shout during chapel service. They frequently read their Bible and carry it about with them, refer to the life to come, in which they will be free from the "sickness." Many of the great religious movements are said to have been initiated by the ideas and ecstasy accompanying epileptic seizures. Mahommed was an epileptic, according to Moreau. Swedenborg was probably an epileptic, and Ann Lee had grand mal attacks with some hysterical symptoms.

Dr. James C. Howden inquires how far epilepsy has had to do with the origin of certain religious creeds and how far the visions of many so-called religious impostors may have had an epileptic origin, and of Mahommed he says, "It seems incredible that a religion which sways the minds of 200,000,000 of the human race at the present day should have no better foundation than the visions and dreams of an epileptic."

During the preparoxysmal state an epileptic may show mild excitement or mania, melancholia with rare suicidal attempts; some have a feeling of impending personal harm, some have impulses to do strange things, though frequently following the convulsion the mental atmosphere is cleared. The following case shows the abnormal impulse with lack of insight into the seriousness of the act at the time:

Case I.—White male, 57 years of age, was admitted to an institution with the following history: Since 17 years of age he had been employed as a clerk by the Pennsylvania Railroad. He had been subject to epileptic convulsions (grand mal and petit mal) from 5 years of age, following a fall. At 35 years of age a trephine operation was done with some temporary relief. At intervals he had attacks of frenzy, when he threatened various members of his family, but never made a homicidal attack. A few days before his admission, without warning, he procured a revolver, fired twice at a neighbor, and for about two hours he was dull and confused, not realizing the seriousness of the act. After his admission it was learned that the neighbor had sold him some real estate and the patient thought he had been cheated, though at the time of the shooting he could give no reason for it.

Occasionally postparoxysmal disturbances occur, varying in type and length of time they persist.

The stuporous type usually follow severe convulsions or *status epilepticus* and in which they show profound physical and mental lethargy. They are aroused with much difficulty and all reflexes are diminished or lost, muscular twitching may be present as residuals of the storm that has passed. As they regain consciousness poorly defined hallucinations or delusions may be expressed.

The maniacal type usually follow grand mal seizures and is characterized by extreme frenzy, the patient blindly assaults anyone about him, consciousness is partially or completely obliterated during the attack, to such an extent that he has no knowledge of it afterwards. Fortunately these dangerous periods are brief, and this is the most dangerous phase of the epileptic psychoses. Let me mention a case to emphasize this point.

Case II.—Male, white, 36 years; farmer, admitted to an institution. He had epileptic seizures since 15 years of age, due to head injury. This man had frequent postparoxysmal attacks of frenzy, during which he attacked members of his family and neighbors. Before his admission to the hospital he had been dull and confused for two days, then he had a grand mal seizure, following which he became maniacal, drove his family from the house, attacked a neighbor who was passing; he was profane and abusive, and after being overpowered he was placed in jail and later committed to the hospital. After remaining four months with us, during which time he had few convulsions, he was permitted to leave the hospital with his wife, though against the advice of the physicians. After one month he was returned in handcuffs and with many discolorations from bruises. There was the same history of homicidal attacks without provocation. He remained irritable and excitable for five days, reacting to vivid aural and visual hallucinations, expressing many delusions of a persecutory nature. After remaining in the hospital a few months he had a series of convulsions, with intervals of noisy irritability, and died from exhaustion.

Epileptics do have maniacal attacks not associated with any convulsions and which has been spoken of as psychic epilepsy or a psychic equivalent, lasting from a few minutes to a few days, and in this they differ from acute mania, which is of longer duration. The intensity of the epileptic's maniacal fury is a feature. At times they pass into a state of automatism in which they talk, eat and perform certain acts of which they later have no knowledge. Cases have been reported while in this state to have made railway journeys and to commit crimes. The following case may be cited:

Case III.—Male, colored, 27 years, laborer, no education, one maternal uncle insane, one sister feeble-minded, one brother epileptic, three brothers and one sister died in convulsions in early life. The patient had convulsions in early life and at intervals as he grew to manhood. In January, 1907, he had a convulsion and during the following few days made attempts at suicide with laudanum and by stabbing himself with a knife. Five months later he repeated the suicidal attempts. One day he left his home to purchase a newspaper and two hours later met a woman who had been his mistress. They were seen talking together in normal tones for several minutes, when he drew a revolver and shot her twice, causing her death. He then walked a few

steps and shot himself above the right eye and fell to the street. He recovered from the wound and was tried for murder. At the trial it was shown that since early life patient had been subject to periods of severe headache, when he would cry, jump and roll about the floor, was unable to sleep and at times would leave his fish barrow, sometimes with the money from his sales, and walk the street, returning after a time and continuing his work with no explanation of his conduct. While in prison awaiting trial he was often violent and destructive, at times refusing food, and emphatically denied that he had shot anyone. When he was admitted to an institution for the insane, December 3, 1907, he denied that he had been arrested or in prison or that he had shot anyone. He said the injury to his eye was caused by a man striking him. He had vivid aural and visual hallucinations. For several weeks he remained dull, taking little interest in his environment or the visits of his wife and mother. After he had been with us about four months he became more active, a good ward worker and cheerful. He told us the first thing he remembers after coming to the hospital was the carol singers passing through the ward on Christmas Day (22 days after his admission). He apparently had an almost complete amnesia from Thanksgiving Day, 1906, until Christmas Day, 1909, though in that interval he had followed his trade as a fish peddler with some regularity, had shot a woman and himself, had been confined in prison and passed through a criminal court and detained for some time in an asylum for the insane. The only things he recalled that occurred during that time was that he had chains on his legs, which was during his prison confinement, and the face of one of his fellow patients was familiar to him, though he could not give his name or where he had seen him. (They had been cell mates in prison.) While with us he had several convulsions of the grand mal type and periods of irritability and headache.

This case is of considerable medicolegal interest, and there are three things to be considered in weighing the evidence: 1. Was the man malingering or feigning insanity? 2. Was the amnesia a true amnesia and one due to epilepsy? 3. Finally, was the amnesia due to the self-inflicted pistol wound and covering a period of several months prior to the wound?

Hallucinations of all the senses are prominent in epileptics. They have visions of paradise and walk in gardens of flowers, listening to beautiful music. They smell and taste poisonous things in their food. Voices control their actions by telling them what to do, and this alone may sometimes make them very dangerous.

We have known one young epileptic who shot and killed his brother, and the only motive that could be learned at the trial was that a voice had continually told him for some time preceding the crime to "Do it now! Kill him now! You must kill him!" The same man previously had made a number of attacks on his fellow workmen without warning, these being probably prompted by the same voice.

In summing up let me say that the cause of epilepsy is as yet unknown, but that heredity and excesses play a great part in its cause cannot be denied. The mental states vary within wide limits. They may be melancholy or maniacal, at times they are suicidal and are frequently homicidal, they are usually irritable, and almost always hopeful of recovery.

## THE MANAGEMENT OF THE PUERPERIUM AND ITS MINOR ABNORMALITIES.*

By B. A. FEDDE, M.D.,

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It is doubtful if in all the realm of medicine and nursing there is a class of patients which has suffered so much neglect and abuse as that of the lying-in woman and her newborn.

When a woman has proved her incapacity for continuous sustained work in any other direction, or has apparently outlived her usefulness in every other capacity, she can yet do confinement nursing among the poor for a wage of eight to twelve dollars a week. She has been present at a few confinements where a harassed practitioner of a previous generation officiated, and his methods, opinions, and results are for her the *ne plus ultra* of obstetrics. Time goes on, and art and science advance; but if the man convertible to new ideas after forty is a rarity, what shall be said of the woman? Ignorant, weak, or lazy, hidebound by antiquated medical opinions and midwives' and old grannies' wisdom, she presents a veritable Chinese inertia to any attempt at bringing modern science into the lying-in chamber. She will tell your patient that it is dangerous to comb the hair during the first week, that fresh air is dangerous for fear of "catching cold," that there is no use in putting the child to the breast until milk secretion is well established, meanwhile dosing it with sweet oil to move the bowels, and sugar water—each spoonful tasted by herself—to still its thirst and hunger, and whiskey or gin or paregoric for wakefulness at night. The infant's breasts will be rubbed with sweet oil until it is lucky indeed to escape without abscess. If there is catarrh, a squirt of milk from the breasts is more efficacious than cleanliness alone; and if for any reason the baby does not take the breast the remedy is for her, the nurse, to spit upon the nipple or have the mother do so. She will frighten the patient with the terrible danger to life in lying otherwise than flat upon the back, and will cause many an hour of mental anguish by wise diagnosis of tongue-tie and retention of urine.

If you catch her at any of her absurdities, or if the patient inadvertently gives you a hint of them, she is mortally offended, and your patient is made to feel through the whole of her stay that she, the nurse, is being imposed upon. She will shirk all she dares of the irksome cleanliness you demand with regard to eyes, mouth, nipples, and diapers, and may not dare to change the mother's clothing for a week, but does not hesitate to give vaginal douches unless you expressly forbid them.

There is little or no use in trying to teach any of these old crones, for they are Oriental in their obstinacy and the setness of their ways; and though they give a diplomatic assent to your opinions and orders, you must not delude yourself with the belief that you are implicitly obeyed. They "never had any trouble," and have always done as they do now. In short, Sairey Gamp still typifies a good many confinement nurses.

The first step in the management of the puerperium is the selection of the nurse. This is not easy. The wives of day laborers and carpenters and small clerks cannot afford graduate nurses, and there seem to be few young women available at a weekly wage of ten to fifteen dollars, which seems to be all

*Read before the Norwegian Hospital Alumni Association January 8, 1913.

that this class of patients can afford to pay. It is best to have the patient send her nurse to you for an interview, that you may impress your ideas upon her. I have found it necessary to print the following set of rules for the nurse, and to hold her strictly to them:

To the Nurse—You must observe these rules strictly.

*The Mother.*

She is to be bathed every day.

The genitals must be washed twice daily with lysol solution. *No douche.*

In addition, pour boiled and cooled water over the genitals whenever she has urinated or the bowels have moved.

Fresh absorbent cotton must be frequently applied. Do not touch that part of the cotton which comes in contact with the genitals.

Wash your hands with soap and water each time before tending the parts.

The mother must not lie on the back more than a third part of the time.

Make sure that the mother urinates at least three times a day.

The nipples are to be washed with alcohol before each time the child is put to the breast. Let the alcohol evaporate. Wash the nipples after nursing with boric acid solution or plain water.

The mother may have ordinary diet including fruit, except where otherwise ordered. She must not have coffee after 12 o'clock noon; tea, pork, onions, cabbage, turnips, cake, or anything else indigestible.

*The Child.*

The diaper must be changed as soon as it is wet or soiled. *Three times a day is not enough.*

Mouth and eyes must be gently washed with boric acid solution four times a day.

The navel string must not be disturbed.

Use only castile soap in washing baby.

The child shall nurse for 15-20 minutes every two hours by day, every four hours by night. *Not more frequently.*

In addition it must have in the course of the day at least six tablespoonfuls boiled, cooled water without sugar.

Nothing else must be given without my orders.

Feel frequently if the feet are warm.

Perfect cleanliness in every respect is required.

I revisit the patient on labor day, then once a day for the next five days; again seven, nine, and twelve days after labor. At the last visit a pelvic examination is made, unless a repaired perineum makes advisable deferring it for some weeks. Under normal circumstances the patient is permitted to sit up in bed several times on the fifth day, and to get out of bed for an hour on the tenth day. Red lochia have by this time almost ceased. If not, a capsule containing strychnine sulphate, gr. 1/60; quinine sulphate, gr. iss; extract of ergot, gr. ij, is given four times a day until the lochia are white.

But many cases will show deviations from normal. Breasts, nipples, digestive system, bladder, and uterus are all working under novel or unusual conditions, and are apt to suffer. Some patients with a large appetite may continue to eat at the same rate as formerly, giving rise to acute indigestion or autointoxication in the form of rheumatoid pains in muscles and joints. The bowels should be evacuated within 36 to 54 hours after delivery, by castor oil. This, although nauseous, is the most satisfactory cathartic, giving a uniformly liquid stool. A few drops of essence of peppermint in the spoon and over the oil, or a little whiskey will render it less unpalatable, particularly if it is followed by black coffee or orange juice. Almost all other cathartics administered after two days of constipation give a stool of which the first part is solid, lumpy, often hard, and the succeeding discharge soft and watery. The lumps will give a great deal of distress to a patient with perineal tear or hemorrhoids. The cathartic by mouth may require a supplementary soapsuds enema to start the movement.

*Bladder.*—This must be emptied three or four times a day. Where the patient cannot urinate upon the bedpan at first, hot perineal stupes may be applied for twenty minutes. This failing, unless there are plain contraindications, the patient may be propped up to a sitting posture and given a glassful of cold water to drink. It may be necessary for the nurse to leave the room, that the patient may have her wonted privacy for urinating. If none of these measures succeeds, before resorting to catheterization I give morphine sulphate 1/16 gr. dry on the tongue. One-half hour afterward the patient again attempts to urinate. Failing, the dose is repeated once or twice, each time allowing one-half hour for the morphine to diminish inhibition. In my series of over three hundred cases it has been necessary to catheterize only three times—once before I began to use morphine, and twice in successive confinements of another patient since. The latter found out for herself that the presence of the nurse in the room caused inhibition.

*Breasts.*—Many women feel more comfortable with a supporting binder for the breasts. I seldom use it, however, not caring to trust the judgment of the untrained nurse in the matter of pressure. Where the breasts are pendulous and tend to congestion in the dependent portions a binder is loosely applied with folded towels in the axillæ for support. If the child has died a tight breast binder is usually applied. Some men do not touch the breasts in this case, but give enough morphine to keep the pain in abeyance until the congestion subsides—usually two to five days.

The nipples have been bathed with alcohol and rubbed, pulled, and twisted with cold cream daily for the last few months of pregnancy. As indicated above, they are washed with alcohol a few minutes before each nursing, and the alcohol allowed to evaporate. If fissure appeared, I formerly applied with a tuft of cotton before each nursing the following: Orthoformi, ʒss; tr. benzoini co. q.s. ad. ʒss; but it has not always been satisfactory, and I get better results lately by treating at once all fissures with silver nitrate, 10 per cent. solution, repeating once daily in weaker strength, say 2 per cent. Care must be taken to paint only the fissure. While the nipples are very sore, some form of shield may be necessary, or the breast must be pumped periodically. I prefer a wide, shallow, saucer-shaped all-rubber shield which when applied encloses practically no air. The nurse must be told to boil it frequently, and it should be discarded as soon as practicable.

*Uterus.*—Daily note is made of the position and height of the fundus, its consistency and sensitiveness, as well as the condition of the iliac fossæ. The lochia are inquired about, but the progress of perineal repair is not inspected, as I believe nothing can possibly influence non-union excepting perhaps bacterial vaccines. Some men make it a practice to

give a couple of prophylactic doses of mixed vaccine (Van Cott's) where there has been much injury done to cervix or perineum. If the lochia become offensive, a vaginal douche is given—always by myself—of the following: Boiled water, 2 quarts; tr. of iodine, ½-ounce; and the importance of Fowler's position is emphasized to nurse and patient.

The *temperature* and *pulse* of the lying-in woman are very easily influenced by slight causes. Fretfulness of the baby, visitors, sore nipples, congested breasts, overeating, an uncongenial nurse, or a family spat may give a rise in no way differing from the initial records of serious disease. I append a chart showing my experience, giving the most reasonable cause in each case:

Post-Partum Rises in Temperature.

| Number of Case | Day of Puerperium | Initial Temperature. Degrees | Duration of Pyrexia Days | Clinical Diagnosis |
|---|---|---|---|---|
| 1 | 2 | 101 4 | 2 | Constipation |
| 5 | 5 | 100. | 1 | Sore nipple |
| 9 | 9 | 100.8 | 14 | Pneumonia |
| 12 | 1 | 101 | 1 | Fibrin absorption |
| | 4 | 102 | 1 | Constipation |
| 15 | 8 | 100.4 | 9 | Femoral phlebitis† |
| 19 | 7 | 100.4 | 1 | Constipation and engorged breasts |
| 22 | 4 | 100.4 | 2 | Constipation and breasts |
| 24 | 2 | 104.2 | 14 | Puerperal sepsis |
| 28 | 7 | 102.8 | 3 | Mental disturbance. Poor drainage |
| 32 | Labor | 101 | 1 | Fibrin absorption |
| 41 | 4 | 100.2 | 1 | Breasts, inflamed hemorrhoids |
| 46 | 3 | 100.6 | 4 | Breasts |
| 49 | 7 | 102.4 | 1 | Constipation |
| 71 | 9 | 101.2 | 1 | Constipation |
| 75 | 5 | 102.6 | 1 | Erysipelas of breast |
| 84 | 2 | 102.6 | 1 | Indigestion |
| 86 | 3 | 100.4 | 1 | Retained secundines |
| 89 | 9 | 99.2 | 2 | Erysipelas of breast |
| 92 | 3 | 101.6 | 1 | Constipation |
| 95 | 3 | 101.2 | 3 | Poor drainage |
| 104 | Antepartum and 1st | 102.8 | 3 | Preexisting pyelitis |
| 112 | 5 | 105.4 | 7 | Unknown general infection. Not genital |
| 115 | 3 | 100 | 1 | Breasts |
| 132 | 4 | 102.6 | 1 | Poor drainage |
| 141 | 4 | 100 | 1 | Excitement. Sore nipples |
| 148 | 7 | 100 | 4 | Grippe |
| 150 | 3 | 100.6 | 2 | Muscular rheumatism. Autointoxication |
| 165 | 7 | 100 | 1 | Breasts |
| 179 | 1 | 103.4 | 2 | Constipation |
| 192 | 4 | 101.4 | 1 | Breasts |
| 194 | 8 | 101 | 2 | Mastitis |
| 211 | 4 | 104 | 4 wks. | Puerperal sepsis |
| 215 | 4 | 100.4 | 3 | Poor drainage |
| 216 | 12 | 104 | 2 | Erysipelas of breast |
| 229 | 1 | 100.6 | Throughout puerperium | Preexisting tuberculosis |
| 236 | 9 | 100.2 | 1 | Mental excitement |
| 243 | 3 | 101 | 1 | Constipation |
| 251 | 4 | 100.2 | 2 | Breasts |
| 256 | 2 | 100.2 | 4 | Breasts. Poor drainage |
| 272 | Labor | 100.4 | 1 | Fibrin absorption |
| 279 | 2 | 101.2 | 3 | Preexisting pyelitis |
| 303 | 4 | 100.8 | 1 | Drainage |

†Died.

I believe the commonest cause of disturbance is constipation, relative or absolute. Some patients have a hold-over appetite which they do not curb, and with the intestinal sluggishness which comes with a relaxed abdominal wall and lying in bed, they get attacks of autointoxication even though the bowels are said to move.

Defective drainage probably comes next. Possibly it should rank first. It will be remembered that in the supine position the axis of the vagina extends upward and forward, causing a pool of lochial discharge to accumulate in the upper part of the vagina, bathing the bruised and torn cervix, and discharging only the overflow. To my mind it is a great wonder that not two cases in three "go septic" under the circumstances. My personal impression from a very limited number of cases is that the better the nurse the more apt is the patient to have toxic absorption, probably because the good nurse does for her patient many things which the poorer kind of patient must sit up to do for herself. Since case No. 256, where the point was forcibly impressed upon my mind in consultation, I have made it a rule to keep the patient in Fowler's position as much as possible, raising her up on pillows beneath the shoulders, or a washboard inserted between springs and mattress, and blocked up. Edgar has tried to improve drainage by ordering a diurnal revolution in bed, the patient lying successively upon back, side, belly, other side, and back. Few of the less intelligent women can see the sense of this; besides, lying on the side alone will not materially improve drainage, since the axis of the pelvis is apt to be tilted upward in the lateral posture.

Engorgement of the breasts seems at times the only assignable cause for febrile movement. It may be controlled by moderation in the use of fluids, saline cathartics, firm bandaging, the breast-pump, and massage. I never permit an untrained nurse to massage or "rub" the breasts. There is too great danger of mastitis or abscess from infection of the lacteal ducts.

Other causes of pathological puerperium can be determined by patient investigation. It must be borne in mind that serious complications may arise without alarming temperature. Thus in case No. 15, phlebitis had appeared two days before the temperature reached 100°.

Finally, there is one point of very great importance in the management of deviations from the normal puerperium—early consultation. When you watch a disturbance grow from its earliest beginnings you may very easily mistake it for something either less or more serious than is really the case; and a consultant coming in with a fresh, unprejudiced mind, free from anxiety, will be of enormous advantage to you. There is something paralyzing in the gradually settling conviction that your case is "going septic," and that you *may* have been the one at fault; your ideas of treatment become fogged, and you need help to clarify them and give definite direction to your efforts.

On the other hand, it is very easy and tempting to gloss over and minimize disturbances which are apparently not septic. I have in mind a patient who called me four days after labor, after discharging in despair the man who had confined her. Her history was as follows: She had her eighth child after a short normal labor on a Sunday afternoon. Two hours later she began to suffer from severe griping pain about the umbilicus. The abdomen began to swell; at present it has the size of a full term pregnancy. Vomited all ingesta from the first. The bowels moved yesterday after calomel and citrated magnesia ordered by the physician. Since yesterday she has had frequent scanty stools, with much griping and tenesmus. No blood in the stools. Patient has been annoyed all day by a metallic tinkling sound in the lower abdomen. Temperature, 99°; pulse, 102, fairly good in quality. Heart and lungs normal. Abdomen immensely distended and tympanitic. No peristalsis heard on auscultation. Liver dulness diminished. At two-minute intervals a metallic tinkling is distinctly audible at the bedside. Uterus—Fundus not found. Cervix firm, slightly tender. Bilateral laceration. Rectum empty. Lavage accomplished nothing in relieving distention. Stomach empty. Diagnosis Intestinal obstruction, probably from volvulus.

She was at once removed to hospital. Repeated enemas failed to affect the distention, and a laparotomy was done the next day. Peritonitis, enormous general intestinal distention, and a ruptured duodenum were found. The patient died shortly after leaving the table. The seat of obstruction was not found at operation. No autopsy.

In this case no credit can be claimed for the diagnosis, nor do I feel that the physician was severely blamable. I fear the same errors of interpretation might be made had the case been mine from the beginning. Let us analyze the

Symptoms with Their Obvious Explanations.

| | |
|---|---|
| Abdominal pain | Afterpains |
| Constipation | Normal for 2 or 3 days |
| Vomiting | Indigestion. Sunday dinner |
| Diarrhea and tenesmus | Calomel and magnesia |
| Distention | Indigestion |
| Reports of patient's distress | Officiousness of nurse, who had no confidence in attendant |

The physician informed me later that temperature and pulse had at no time during his observation exceeded normal limits.

To recapitulate, the points I wish to emphasize are:

1. Fowler position in every case from the first.
2. Early consultation when complications, all but the very simplest, occur.

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## EARLY DIAGNOSIS OF TUBERCULOSIS WITH NOTES ON INTERNAL ANTISEPSIS.

By C. AM ENDE, M.D.,

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The following observations were suggested by a case which supports my previously reported results in tuberculosis. The most salient points in the patient's illness are as follows:

Mrs. S., aged 66 years, after a protracted prodromal period, during which in 1903 no tubercle bacilli were found in her sputum, had in May, 1905, her first pulmonary hemorrhage. Three more followed at lengthy intervals. The last one, on Christmas day in 1910, left her so low that her children induced her to give up her position as janitress in the tenement house in which she lived. Partly owing probably to the effects of previous medication, taken in pill form, consisting of one grain of quinine with one-fifth of a grain of iodoform, and creosote, which was taken on and off, which medication was now continued steadily, she recovered to the extent that in August, 1912, her expectoration became reduced in the morning to the hawking up some glairy mucus. Four successive examinations by the Board of Health showed this mucus free from the tubercle bacilli. There was no reaction to tuberculin.

The idea that recognition of her actual trouble, tuberculosis, during especially the earlier parts of her protracted prodromal period, when her sputum was free from bacilli, might have saved her very much trouble, led to the following experiments. These were conducted with the Moro salve in preference to tuberculin injections. This salve, which contains equal parts of tuberculin and lanolin, when rubbed in at the pit of the stomach produces within two days characteristic efflorescence.

Designating this case of Mrs. S. as Case I of our series, one may state that the absence of a reaction to the Moro salve, supported by the bacteriological findings and physical symptoms, indicated the absence of any active tuberculous process.

Case II.—A very fine granular eruption, disappearing in a few days, was the type of reaction in a man, aged 45. He had been treated off and on for some time for a laryngitis involving the cords and for pulmonary catarrhal conditions. Two months ago he had a light pulmonary hemorrhage.

Case III.—A much more distinct miliary reaction appeared in Mr. S., aged 22. He called October, 1910, for increasing emaciation and debility. He had a short, hacking cough without expectoration, and except a slight distant voice on the left side there were no other positive tuberculous symptoms. He was given the pills, but the emaciation yielded but little, and only after about one year could he begin to work again. When it appeared safe because of a supposedly sufficient immunization, and perhaps of dislodgement of bacilli, the d'Arsonval current was used for production of pumonary hyperemia with a most agreeable effect on the patient.

Case IV.—A slight but distinct reaction was also given by K., aged 15, who shortly before had been declared healthy in a physical examination.

Case V.—A very distinct, almost pustular reaction was given by a young lady who came for treatment because of increasing emaciation and debility. There was bad family history. She reported an improvement after taking the first lot of pills.

Case VI.—Another distinct reaction was observed in a young lady, also with a bad family history. She came because of a short, dry, hacking cough. Immediately she was treated with the pills. Considerable euphoria was reported and also the disappearance of the cough. She has not returned.

Case VII.—P. S., aged 7, was seen because of arrest of growth and increasing apathy. He gave a slight but distinct reaction. He had a bilateral cervical adenitis, the chain of enlarged glands extending on the left side to, and on the right below, the clavicle. He received pills having half the strength of those prescribed for the adult, creosote in 1-grain pills. The *x*-rays were also used. The glands disappeared with the exception of one on the right side, which felt like a soft compressed pea. Under continued treatment there occurred a considerable increase in growth, strength, etc.

Case VIII.—E. M., aged 7, was brought November 6, 1912, because of a short, dry, hacking cough, lasting for as much as two hours at bedtime. She was apathetic and there were dark rings under the eyes, which disappeared soon under treatment. In contrast to the injections the rubbing in of the salve amused her greatly and produced an intense, nearly pustular reaction. She was immediately given the pills, two-thirds the strength of the adult dose. Two weeks later the father reported what he thought was a remarkable improvement. A repeated inunction in January, 1913, was followed by a much finer reaction. There was a decided improvement in the patient's physique.

Case IX.—A faded macular dermatitis appeared in Mrs. K., who was treated three years ago out West, but not as long as directed. She believes she has been healthy since then. She has no cough, etc., but is again taking the pills, although reluctantly.

Case X.—Her 8-year-old daughter gave no reaction.

Case XI.—Mrs. M. R., reported in my previous paper, gave two rather pale little macula. She continues treatment. There is no cough. This permanent absence of cough in all kinds of weather seemed singular, although already observed in the case of A. D., reported in the previous paper. He positively denies having coughed during the long time since his recovery.

Case XII.—No reaction was obtained from Mr. R., who feared tuberculosis because of a severe bronchitis, his poor build, and a bad family history. His fears could thus be allayed.

Reviewing these cases it should first be said that their number is far too small for the establishment of any definite principle, but as they all indicate an improvement, in some cases even permanent cure, in high percentage, five out of six, now their brief analysis seems in order.

In its earliest stage the disease was probably detected in Case VIII. The rapidly disappearing, fine granular reaction of Case II denotes also a very early detected infection, but one that already had gained a foothold, as evidenced by the rupture of a probably small blood vessel under a strain ordinarily sustained without injury. The pronounced euphoria soon following combined tuberculin absorption and drug administration has suggested a repetition of this course of treatment. Cases V and VI indicate the influence of wise friends and the necessity of the physician keeping these patients strictly under control. Cases III and VII, already for some time under treatment, although their physical symptoms are as yet uncertain, demonstrate the value of the Moro reaction in the absence of bacilli carrying sputum. The rather rapid and apparently complete cure of Mrs. S. so soon after her nearly fatal hemorrhage at Christmas, 1910, may depend upon the development of considerable immunizing substance from the earlier medication. The faded or very light reactions of Cases IX and XI suggest an as yet incomplete cure, while in the apparently completely cured patient Case I as well as in two healthy subjects, Cases X and XII, no reaction appeared.

Thus the Moro reaction enabled one to detect in this small series of cases the presence of tuberculosis in its earliest incipient stages as well as in its obscure and latest stages; it demonstrated the absence of the disease; and to a degree the intensity of the reaction seemed proportionte to the intensity of the disease. Children did not resist. Except in a case of early developing hip joint disease the reaction has revealed the enemy at a time when his destruction is not so very difficult.

An arrested normal development, emaciation, a general laxity, and a short dry hacking cough were the principal, though rather obscure, symptoms that suggested the use of the salve. Some but not all these patients could be made to comprehend that a person may have "consumption" entirely unknown to themselves or friends, and that at this earlier stage the disease is more easily curable than when further advanced in its destructive course. If these observations are corroborated, considerable control over tuberculosis may develop.

It may be noted that the active agent in the production of the Moro reaction is tuberculin, which, according to the most plausible theory, is a substance elaborated by body cells upon stimulation by a toxic material occurring in the bodies of dead tubercle bacilli, which substance is inimical to, and destructive of these bacilli when living. The basic element then in this process is the dead bacilli; without them immunizing tuberculin does not develop. With our chemicals the process must differ. In the usually slowly advancing disease effective bacilli are absent. Therefore their presence can only have been brought about by the chemicals which kills them. After that the two processes may well go on, so to speak, hand in hand, immunization predominating over the killing, and vice versa. If correct this may explain the reported unusual results. In this connection the much disputed and neglected internal antisepsis should appear as capable of utilization in proper occasions. Its condemnation probably has resulted from its use in insufficient dosage.

It may be stated that Binz[2 3 4] demonstrated as early as 1867 a general antiseptic effect for quinine and later the specific effect upon the plasmodium malariæ. The established rational basis for internal antisepsis may permit an answer to the statement by F. J. Watkins:[5] "As yet no remedies are known that directly limit the growth or destroy the bacteria of puerperal infection." With the exception of one case, in which the infection met with had been carried directly into the abdominal cavity, all the other cases yielded to the following treatment. In a case of this condition with temperature 104° 5-grain quinine pills were given every four hours until temperature fell to about 102°. In addition there was given local treatment. With the pills there were ordered one dram of iodoform, one dram of quinine, one ounce of glycerin, and one yard of 10 per cent. iodoform gauze, which was cut into strips ½ inch wide and tapering toward one end. Two such strips were tied together to make one of double length. Then according to the temperature 20 or 30 grains of iodoform were rubbed up with some glycerin, to which was added about 10 to 15 grains of quinine, and this mixture was rubbed into the gauze strip. After proper toilet of the parts as much as convenient of this gauze strip was packed into the offending uterus, and the rest was packed around the cervix, forming a tampon supporting the uterus. The patient soon began to experience comfort. With a very high temperature the packing should be repeated the next day. Irrigations may follow. In one bad case several full packings were necessary and these were followed by some erosion of the outer mucous membrane of the uterus.

Doses of quinine that may appear dangerously excessive were employed in a sufficient number of severe infectious diseases to establish that when that drug is given with sweet spirits of niter in large doses, no other undesirable results followed than some passing auditory disturbances. In one desperate case, declared hopeless by two consultants, about two and a quarter ounces of quinine were given to a little girl aged 9 years in the course of six weeks with the best result. This warranted the employment of this drug in full doses in typhoid fever.[6] When used as below it reduced the duration of the disease to twenty-four days in my most protracted case and to ten days in the case of shortest duration. The dangerous cold baths that are productive of pneumonic complications were not needed; the delirium was light; in the twenty-four days case the consumption of food, which was liberal on the sixth, rose on the eighth day to two quarts of milk, two eggs and a roll; a week later oysters, soups, and the like could be added. The patient left his bed on the eighth day and stayed up

a little longer each day; thus he was quite strong when he went out on the twenty-fourth day. This should justify the medication, which consisted of administering, seven times a day at first, a capsule containing 5 grains each of muriate of quinine and subnitrate of bismuth, with one drop of creosote; with any less at the beginning the temperature would rise, index like. After four to six or seven days less could be given. The dose of the sweet spirits of niter was from ½ to 1 dram daily. The rapid improvement of the patient, the simplification of treatment, and the shortening of the disease would seem to justify this treatment in suitable cases. If not used alone it may well supplement vaccines, which are satisfactory only as a prophylactic. Of course large single doses of quinine were often given in typhoid[7] fever, but apparently not every day, as this method seems necessary to destroy the myriads of Eberth bacilli. Quite likely an antitoxin develops during the treatment, as in tuberculosis, both the antitoxin and the quinine working in unison.

The pitiable conditions ultimately occurring in tuberculous ostitis may warrant recalling that in the previously reported case of N. H.[1] a rather rapid recovery ensued upon the use of the *x*-rays, which supplemented the internal immunizing processes. The presence of these seems essential because in their absence the *x*-rays increase the discharge as in two cases of purulent otitis media. As long as such patients are able to walk one or more trials of this method are easy and at any rate not harmful.

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319 WEST FORTY-FIFTH STREET.

## Medicolegal Notes.

**Malpractice—Acts Constituting.**—In an action for malpractice in the treatment of a girl of seven, the plaintiff alleged that the girl was suffering from an injury to the sciatic nerve due to a fall from a porch. The defendant was called in three days after this occurrence and at first diagnosed the case as appendicitis and afterwards as typhoid fever, for which he treated her for about 21 days. The patient had been playing about as usual during the two days after her fall. Medical experts for the plaintiff answered a number of hypothetical questions tending to sustain the contention that the child was suffering from an injury to the sciatic nerve, caused by the fall. But these physicians also testified that the history of the case during the two days after the fall would exclude any injury to the sciatic nerve. There was therefore no evidence in the case to substantiate the plaintiff's theory of an injury to the sciatic nerve caused by the fall. The defendant, on the other hand, now contended that the child had been from the beginning afflicted with infantile paralysis. The plaintiff's medical witnesses testified that the child's symptoms might have been diagnosed by men of ordinary skill in the medical profession as typhoid fever, multiple neuritis, or infantile paralysis, and that the treatment given by the defendant in no way contributed to the subsequent condition of the child. It was held that there was, therefore, no evidence in the case that the treatment by the defendant was negligent or unskillful. The most that could be said was that he did not discover the infantile paralysis. From the evidence he could not have cured it if he had. It could not therefore be said that his failure to discover its presence, or his subsequent treatment, was responsible for the child's subsequent condition.—Brydges v. Cunningham, Washington Supreme Court, 124 Pac. 131.

**Accidental Death—Wound Causing Disease.**—In an action upon an accident policy where the assured died of erysipelas, the question was whether the death was caused solely by actual, violent and accidental means. The plaintiff, his widow, contended that the assured received a slight accidental injury to his left cheek, causing an abrasion of the skin, and that this injury resulted in "traumatic erysipelas." The attending physician of the assured testified to the discovery of the abrasion of the skin. He also testified to his opinion that the disease from which the assured died was wholly infectious, and could not have resulted, except through infection of some wound or abrasion of the skin. He also testified that it made its first appearance at the edges of the alleged wound, and that in his opinion it resulted solely from the infection of such wound. His evidence was corroborated by other medical testimony and was held to be sufficient to sustain a finding that the death of the assured was the proximate result of the wound or abrasion. No direct evidence was introduced to show any of the circumstances which caused the abrasion. It was apparently very slight, and how or when it was inflicted did not appear. Its appearance was held to support the finding of the jury that the cause of the wound was violent and external.

In the absence of direct evidence, the presumption arose that the wound was not intentionally inflicted either by the assured or by another. That presumption was almost equivalent to a presumption that it was inflicted through accidental means, although the authorities stop short of announcing the presumption in the latter form. They do hold, however, that an inference may be drawn from the presumption first stated by the triers of fact that the wound was caused by accidental means as the only other alternative.—Caldwell v. Iowa State Traveling Men's Assn., Iowa Supreme Court, 136 N. W. 678.

**Medical Examiner as Insurance Company's Agent.**—In an action upon a mutual benefit certificate it appeared that the insured had stated in his application that he was a farmer, when he was in fact a saloonkeeper. It was contended, however, that the physician who took the medical examination was the insurance company's agent and knew the falsity of the statement, and on that account the company was estopped from forfeiting the policy by reason of the false statement. It was held, however, that while a medical examiner is regarded as the agent of the company issuing the certificate of insurance for which he makes the medical examination, and that the company will be chargeable with knowledge of information possessed by him contrary to disclosures made in such medical examination by the applicant, the medical examiner is not the agent of the insurer for anything more than is contained in the medical examination and his certificate thereto, and the insurer cannot be charged with any knowledge of information had by him outside of that agency. In this case the statement was made in the application and not in the medical examination. The application was signed by the applicant and acted upon by the local judge before the examination was made. The examining physician, as such, had no duty to perform relative to the application, and did not in any manner represent the company in making or accepting the application.—Sovereign Camp Woodmen v. Hall, Arkansas Supreme Court, 148 S. W. 326.

**Instructions to Jury—Malpractice.**—In an action for malpractice, which resulted in a verdict for the defendants, it was held on appeal that an instruction which simply called the attention of the jury to the inquiry whether, under the evidence, the defendants were negligent in failing to anticipate and provide against the occurrence was held not to be harmful to the plaintiff, where the court also told the jury that it did not intend to indicate to them any opinion as to the facts in the case or that it had any opinion as to what facts were proven or disproven.—Steele v. Stanhurst, Indiana Appellate Court, 98 N. E. 733.

**Examination of Expert by Court.**—In an action for personal injuries a medical expert was asked by the court what he meant by a relaxed sacro-iliac joint and whether the witness would be surprised if certain other surgeons had said that such cases were extremely rare and that they had only known two or three cases of movement of the sacro-iliac joint. It was held the questions were not improper, in view of the judge's caution to the jury not to consider the matter.—Beebe v. Greene, Rhode Island Supreme Court, 82 Atl. 780.

# MEDICAL RECORD.

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## THE PATH FOR PROGRESS IN MEDICAL EDUCATION

EFFORTS in recent years to raise the standard of medical education have proved very illuminating to all who are striving to better education no matter in what particular field, so P. P. Claxton, U. S. Commissioner of Education, states in the introduction to Bulletin No. 4 of the U. S. Bureau of Education, a monograph by Dr. George E. MacLean on "Present Standards of Higher Education in the United States," just issued. Dr. MacLean, in reviewing the history of the progress of standards in education, convinces one of their necessity. It is to be hoped that this publication will aid in a quicker appreciation of right standards on the part of all. But while public opinion is not educated enough to discern what is needed, and while educators lack insight into what constitutes medical education, it will remain the duty of the profession itself to determine a general practical standard. A physician who has made mistakes—who has diagnosed pleurisy as appendicitis, or who has failed to recognize ectopic pregnancy—truly knows wherein our present system of medical education is weak. A great diversity of opinions might be expressed as to just in which direction the path for progress lay. Two things, however, are apparent as obstacles to progress, the non-recognition of two types of medical schools and the effect of the present examinations for license on medical education.

The movement for standardizing medical education in this country needs careful guidance. In this movement it has been lost sight of that there are two phases of medical education, that which is university in character and that which is technical. University teaching aims to give a broad vision of problems from a philosophical standpoint, while technical teaching aims only to give practical training. In our country our few universities excel in giving good practical training while the smaller schools, which should have no other excuse for existing, fail, for the most part, to train their students in practical work. The university professors, desirous of raising the plane of their teaching above that of practical instruction, have realized the necessity of the students coming to them better prepared in the sciences and languages because the advanced instruction, that they wish to give, bewilders the ill-prepared student. This, then, is where the movement for raising the standard of entrance requirements to our medical schools began. The lesser schools, instead of recognizing their proper aim, have, in some instances, tried to give university teaching when they were even unable to give adequate practical instruction. These schools are a necessity and would play an important and valuable part in our system of medical education if they would realize their limitations and aim to graduate skilled practitioners, men well trained in physical diagnosis, laboratory technique, and bedside experience. The university, on the other hand, should give all this and more. They have a much higher calling. Their teaching should be of such a character and such far-reaching influence as to attract special students, and to develop an investigating turn of mind which would lead them into research and finally prepare them for teaching. It must be understood that unusual work is not for every man and it is the especial duty of universities to develop the exceptional student. To do this their whole teaching must be on a high educational plane else they will fail to fulfil their mission. Of late there has been some talk of adding a fifth year to the medical curriculum. In the case of the universities which require their matriculates to be well grounded in the sciences, this is unnecessary, while in the lesser schools it would be wiser to make the present four years of some value in practical training and experience. It would be greater progress to bring about four strong rather than five weak years.

In this matter of a standard for medical education, the State sooner or later is called upon to make some ruling in connection with the granting of licenses. In doing so it has usually been guided by medical school authorities instead of heeding what is best for the student and the public. The State is rightly concerned only with practical knowledge. It should seek to protect the public by refusing to license as practitioners of medicine, men who have not had the requisite training and experience. It should determine whether the candidate for license has the skill to diagnose a case of incipient pulmonary tuberculosis, not whether he knows the latest immunity theory. If the State were to abandon its previous policy of holding only written examinations on text-book subjects and were to conduct a practical examination like that of the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England, it would immediately cause all medical schools to give practical medical training. It would also stimulate the students to seek practical experience wherever they might find it. At present it is to their interest only to cram the contents of a quiz-compend. By introducing a sound method of giving thorough practical examinations the interests of the public would be better safeguarded. No one thinks of entrusting lives to locomotive engineers simply on bookish requirements. Practical experience is the criterion. In medicine it should be the same. The present method of examining has served its purpose in bringing the medical schools up to a certain standard, but now it only hampers further progress by its untoward effect on practical instruction.

## PELLAGRA IN THE UNITED STATES.

It is only within recent years that pellagra has been heard of in this country. When reported first in Alabama, the disease was practically unknown to most of the medical profession of the United States. Now it occurs frequently in the practice of a large number of practitioners. It appears to have spread with great rapidity and has been reported from at least forty States and the District of Columbia. In the Annual Report of the Surgeon General of the Public Health Service of the United States for the fiscal year 1912, it is stated that complete and accurate statistics for the entire United States are lacking, but from an extensive inquiry begun by the service some months ago, and soon to be completed, it is conservatively estimated that since 1907 there have occurred not less than 30,000 with an average case mortality of about 38 per cent. computed on exact figures for eight States studied. In many sections of the country, the disease now prevails in epidemic form and is menacing the life and health of the entire population. The report goes on to say that "When consideration is given to the nature of the disease, its chronicity and termination often in invalidism, insanity, or death, the lack of definite knowledge as to its causation and transmission, the unsatisfactory results of treatment, its rapid and continuous spread, the class of people affected and the uneasy state of the public mind in many places, then the thorough investigation of this mysterious disease assumes immediate importance." In another part of the report, it is pointed out that whether the disease is increasing or not, cannot be told in the absence of a record of the occurrence of cases. The disease, at any rate, is being recognized more frequently than in former years, owing to the greater familiarity of physicians with the symptoms. It is suggested that the disease should be made notifiable in all States, so that its relative prevalence may be known, as information as to its relative frequency of occurrence in different localities and under varying conditions will undoubtedly aid materially in determining the cause of the disease.

So far as the Public Health Service is concerned, work is being pushed as rapidly and adequately as funds will allow in the direction of ascertaining the causation of pellagra, and other necessary facts in connection with the disease. A fairly complete laboratory is now in working order, and investigations have been made along the following lines: Clinical and laboratory studies on pellagrins received in the wards of the marine hospital at Savannah, Ga., which has been made the chief base for the study of pellagra by the Service; the collection of statistics on the geographical distribution and prevalence of pellagra in the United States; and epidemiological studies of the disease in the field. Passed Asst. Surg. C. H. Lavinder and Asst. Surg. R. M. Grimm are in charge of the work at Savannah. However, the work is as yet only in its infancy in this country, and more money by far is needed ere the problem can be grappled with as effectively as the gravity of the situation demands. The progress of the work is hampered by lack of money and as pointed out in the report, while studies have been carried on as actively as possible, the want of sufficient money and the necessary facilities have prevented investigation on a scale commensurate with the problems involved. These problems cannot be adequately met by the bacteriologist or clinician or pathologist alone. To hope for satisfactory results, complete and extensive studies must be made from all sides, and in order to do so larger appropriations will be required.

The point must be emphasized that in certain parts of this country pellagra is a distinct menace to health, that it is increasing, and that the only way possible to check its spread is by thoroughly investigating the disease from all angles. So long as its causation, distribution, and other essential details are unknown, it is impossible to devise steps for its prevention. Parsimony in a matter which directly relates to the health of a goodly proportion of the population would be extremely unwise policy.

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## TUBERCULIN.

During the past few years tuberculin has come again into favor, and it is generally allowed that this substance is useful as a therapeutic agent. So far as is yet known tuberculin is hardly deserving of the praise lavished upon it by some of its enthusiastic advocates, nor is it so valueless as some of its opponents assert. Perhaps its therapeutic value lies between these two extreme views and to designate it as useful is to say the proper thing. However, while the majority are practically agreed as to its use, there is no agreement whatever with respect to the form in which tuberculin is best employed nor as to the most satisfactory system of dosage. Alexander Fleming, writing on the subject in the *Practitioner*, March, 1913, points out that the discrepancy between the views of various authorities regarding the form and dosage of tuberculin is wide. Tuberculins are made from the human and the bovine types of bacillus. The most recent communications as to the relative frequency of these two types of tuberculosis in man appear to point to the fact that almost all the infections in adults have been caused by the human type. Park, indeed (*Journal of Medical Research*, December, 1911), concluded that bovine tuberculosis is practically a negligible quantity in adults. In children it caused a marked percentage of cases of abdominal tubercle and cervical adenitis.

Fleming draws attention to the fact that in all other forms of infection one aims at using as a vaccine an organism as nearly as possible identical with the infecting organism. Consequently, in employing tuberculin for adults we ought to use tuberculin made from the human type of tubercle, except in the few cases where the bovine type is found. Of the forms of the human tuberculin employed there are still two main groups, old tuberculins and new tuberculins. Old tuberculins are made from the filtrates of tubercle broth-cultures, and the new are prepared from the bodies of the bacilli of such cultures. Wright and his followers use exclusively the bacillary emulsion, an emulsion of the ground-up bacilli. The doses of this are always small.

Latham using the same preparation, begins with similar doses, but before pronouncing a patient cured very largely increases the dose. Speaking in a discussion of the Royal Society of Medicine, March, 1912, he divided his cases into two groups, chronic nonfebrile and febrile. In the febrile cases he commenced with a small dose and increased it very gradually, repeating the dose every two or three days. Emery considered the old tuberculin the most potent for good or evil. Wilkinson has urged the use of a sequence of different tuberculins. The doses of these he rapidly increases, so that the reaction which he obtains becomes progressively less and tolerance to tuberculin is obtained. Thus it will be gathered that although tuberculin is useful there is too much divergence of opinion with regard to the best form to be used and the dosage to render it a wholly reliable or satisfactory remedy.

## CZERNY ON THE ORIGIN AND TREATMENT OF CANCER.

Czerny of Heidelberg, who has for many years devoted his life to cancer research, delivered a semipopular lecture on this subject before a scientific body (Urania Society) of Berlin on March 5, a report of which appears in the *Münchener medizinische Wochenschrift* of April 1. The distinguished lecturer had at the same time completed his fortieth year of cancer research. The subject first considered was the percentage of operative or knife cures. This amounts in the skin and superficial localities to 80 or 90, in the female breast the corresponding figure is 40, the observation period occupying five years. In cancer of the gastroenteric tract the percentage of cures amounts to from 20 to 30. The proportion of lifesaving for cancer in general when treated with the knife is about 40 per cent.

Experiments upon hundreds of thousands of animals of many species, chiefly in the form of inoculations, not only between members of the same species but between unlike species (mice and rabbits) were discussed. It was recalled that the first one to study mouse cancer in its spontaneous transference—Morau—was of the opinion that the affection was communicated by bedbugs. A step in advance was marked by Rous's discovery that the inoculable virus passes through a bacteria-tight filter. It is also probable, the speaker said, from the studies of Fischer and others, that various microorganisms are able to secrete a toxin which can set up cancer.

Czerny then took up *x*-ray cancer. We now have notes of 65 cases of this genesis and the author believes that *x*-ray dermatitis acts simply as a port of entry for a cancer generating organism. Knowledge of the precancerous state is highly important because opportunity is afforded to extirpate these disease foci (gastric ulcer, mastitis, moles, etc.). It is of course possible from analogy that an ultra microscopic organism may transmit the disease through sensible parasites, whether these be stinging insects or tics or intestinal parasites injected with uncooked food. Whatever may be the causal agent, relative virulence must be a marked factor.

Nonoperative resources must find a wide field in inoperable cases and in the prevention of relapses. Statistics show that bad cases may be improved and that a considerable proportion of doubtful cases may actually be cured by intensive and prolonged therapy. In conclusion Czerny hopes for much good in the future through the establishment of cancer retreats, which shall be similar in nature and object to leproseries and tuberculosis sanatoria. It is rather discouraging to learn that a man of Czerny's ability, after forty years of study of this subject, can discuss the present status of the problem only in such vague and general terms, without revealing a single new fact or even the suggestion of one.

### Occupation for Convalescents.

A very great advance in the management of the insane in recent years has been the providing of useful occupation for them, whereby their minds are diverted and a useful channel is found for their motor restlessness. But the blessing of work is not for the insane alone, and a movement has been started for the teaching of handicraft to chronic invalids and convalescents whereby the ennui inseparable from enforced idleness is markedly relieved. In the initial number of the *Clifton Medical Bulletin* (April, 1913) Miss Mary Irving Husted, Director of the Industrial Department at the Clifton Sanatorium, writes entertainingly of what has been done in that direction at Clifton Springs and elsewhere. There are two classes of patients especially to whom the opportunity for light work is a boon. Surgical patients who are so far convalescent that they no longer need the constant attendance of a nurse have many weary hours whose tedium is greatly relieved by the following of a handicraft such as basket weaving, which gives an outlet for the imagination in varying the patterns and puts no strain on the eyes. Chronic invalids also, whose confinement to bed for weeks at a time is most wearisome, find relief and entertainment in the same or a like occupation. Those able to leave the bed are taught leather carving or rug weaving. These handicrafts not only give occupation for the hands but also direct the thoughts and keep the mind from dwelling unprofitably or injuriously on the physical condition. The department at Clifton Springs was opened in December of last year, and already, Miss Husted says, the good effects upon the physical and mental condition of the patients have been most gratifying.

## News of the Week.

**Examination for Public Health Service.**—The United States Treasury Department announces that Boards of commissioned medical officers will be convened on May 5, and again on June 9, 1913, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and of good moral standing. After four years of service, assistant surgeons are entitled to examination for promotion. Assistant surgeons receive $2,000; passed assistant surgeons, $2,400; surgeons, $3,000; senior surgeons, $3,500; and assistant surgeon generals, $4,000 a year. Further information or invitation to appear before the board of examiners may be obtained from "The

Surgeon General, Public Health Service, Washington, D. C."

**For Women Physicians.**—Governor Sulzer of New York on April 18, signed the Tudor bill recently passed by the Legislature, providing that where women are required to undergo physical examinations in order to obtain employment, the examinations shall be made by women physicians.

**City Death Rate.**—During the week ending April 12, there occurred in New York City 1,460 deaths, giving a death rate of 14.18 per thousand, as compared with a total of 1,600 deaths and a death rate of 16.14 for the corresponding week of last year.

**Island Site Rejected.**—At a meeting of the Board of Estimate of New York City last week, the proposal to build on North Brother Island a hospital for contagious diseases to receive cases from the Borough of the Bronx was rejected by the Board. The island site was favored by certain of the residents of the Bronx who have objected to the placing of the hospital nearer home, and who have heretofore blocked its erection on any of the sites so far considered in the borough. Owing to the lack of such a hospital, the death rate from contagious diseases among children is now higher in the Bronx than elsewhere in the city.

**Smallpox on Steamship.**—The *Pannonia,* which arrived in New York last week from Mediterranean ports, reported one steerage passenger ill with smallpox. The patient was removed to Swinburne Island, and the other passengers, who had occupied the same compartment, were taken to Hoffman Island for observation.

**Saturday and Sunday Association.**—At a recent meeting in New York of the Hospital Saturday and Sunday Association the treasurer reported collections during the current year of $117,707, an increase of $11,719 over last year, and by far the largest amount collected in the thirty-three years of the association. The number of associated hospitals is now forty-seven.

**Oppose Hospital Site.**—The New York Merchants' Association has asked Governor Sulzer to withhold approval of the plans for the Mohansic State Hospital for the Insane and for the New York State Training School for Boys, both of which it was proposed to erect at Yorktown Heights in Westchester County. This action has been requested pending the enactment of a bill prohibiting the establishment of such institutions within the Croton and Catskill watersheds from which the water supply of New York City is derived.

**Dr. Friedmann in New York.**—After a prolonged stay in Providence, R. I., where he was permitted to treat private patients, Dr. Friedmann returned to New York on April 18 in response to the request of the Public Health Service officials, taking him to task for the neglect of the experiments undertaken in this city. During his visit to Washington last week, Dr. Friedmann treated fifty patients at the George Washington University Medical School. An attempt was made to receive permission for him to practise in the District of Columbia without the formality of a license, but it was blocked in the Senate by Senators Gallinger, Penrose, and others, some of whom were far from complimentary in their remarks.

**Fire in Laboratory.**—Ether fumes escaping from a still in the chemical laboratory on the third floor of the Cornell University Medical College, New York, on April 19, ignited and started a fire. Fortunately, the flames were extinguished before much damage was done.

**Trouble at Bellevue.**—The internes became the patients at Bellevue Hospital one day last week when chicken salad served in the doctors' dining-room at luncheon temporarily incapacitated almost the entire staff. All of the victims recovered, but the integrity of the chicken in the salad was doubted.

**Camden, S. C., Hospital.**—Work has been begun on the new Camden Hospital in Camden, S. C., which is the gift to his native town of Mr. Bernard Baruch of New York. The hospital will cost about $35,000 and will contain twenty beds. Its support will be derived from a fund of $75,000 left by the late Mr. John Burdell of the town for the purpose of treating the sick poor of Kershaw County.

**New York State Board of Medical Examiners.**—Dr. Lewis Stephen Pilcher, 145 Gates Avenue, Brooklyn, has been appointed examiner in diagnosis on the State Board of Medical Examiners in place of Dr. Glentworth R. Butler, who has resigned on account of temporary illness. Dr. Pilcher was graduated from the University of Michigan in 1862 with the degree of A.B., later with the degree A.M., and in 1866 with the degree M.D. Dr. Pilcher served for a time in the Medical Corps of the U. S. Navy and then settled in Brooklyn. He has served either as surgeon or consulting surgeon on the attending staffs of most of the hospitals in Brooklyn. For many years he has been the Editor of the *Annals of Surgery.*

Dr. Herbert U. Williams, Dean and Professor of Pathology of the Buffalo Medical School, has been appointed examiner in bacteriology on the State Board of Medical Examiners in place of the late Dr. Hiss. Dr. Williams was graduated from the University of Pennsylvania in 1891. He is President of the American Association of Pathologists and Bacteriologists. He is pathologist to the Buffalo General Hospital and the County and Sisters' Hospitals.

**Personals.**—Sir William Osler, who arrived in New York on April 14, and left at once for Baltimore to attend the opening of the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital, was accompanied by Dr. W. McDougall of Oxford and Dr. F. W. Mott of London. The party will spend six weeks visiting the large cities of the East before returning to England.

Dr. Simon Baruch of New York was the guest of honor at a reception on March 31, in Camden, S. C., where he at one time resided.

**Hall of Health.**—The spring cleaning campaign in New York City received fresh support at a meeting held at the Museum of Natural History on April 16, when the new Hall of Health, under the direction of Prof. C. E. A. Winslow, was formally opened. Over a thousand persons attended the meeting and listened with enthusiasm to Commissioner Lederle's plans for improving the health of the city.

**Gifts to Charities.**—By the will of the late Moses Weinman of New York bequests of $5,000 each are made to Mount Sinai Hospital, Beth Israel Hospital, the Presbyterian Hospital, St. Vincent's Hospital, and the Montefiore Home for Chronic Invalids.

The Presbyterian Hospital, New York, receives $1,000, and the Roosevelt Hospital $1,500, by the will of the late Miss Margaret E. Mitchell.

Bequests of $500 to Beth Israel Hospital and $300 to Lebanon Hospital were made in the will of the late Wolf Cohen of New York.

The Brooklyn Homeopathic Hospital receives $3,000 by the will of the late James C. Atwater of Brooklyn.

The House of Rest for Consumptives, New York, is the only charitable institution receiving a direct bequest by the will of the late J. Pierpont Morgan. For this institution, a fund of $100,000 is created to be used for corporate purposes and to be known as the "Amelia Sturges Morgan Memorial Fund." The will, however, also contains a clause requesting the residuary legatee, Mr. Morgan's son, to continue as long as it may seem necessary, the same assistance given by Mr. Morgan during his lifetime to the Society of the Lying-In Hospital, New York. This is said to have amounted to $100,000 a year.

**Medical Society Elections.**—Tennessee State Medical Association.—At the annual meeting, held in Nashville on April 10, the following officers were elected: *President,* Dr. William D. Haggard, Nashville; *Vice-Presidents,* Dr. E. M. Holmes, Murfreesboro; Dr. Robert Mann, Memphis, and Dr. Hiller P. Larimore, Chattanooga; *Secretary,* Dr. Perry Bromberg, Nashville.

Hampden District (Mass.) Medical Society.—The following officers were elected at the annual meeting in Springfield on April 15: *President,* Dr. George D. Weston, Springfield; *Vice-President,* Dr. Abbott L. Cooley, Chicopee Falls; *Secretary-Treasurer,* Dr. Hervey L. Smith, Springfield.

Tolland County (Conn.) Medical Society.—The 121st annual meeting of this society was held at Rockville on April 15, when the following officers were elected: *President,* Dr. Wright B. Bean, Rockville; *Vice-President,* Dr. Cyrus B. Newton, Stafford Springs; *Secretary-Treasurer,* Dr. E. P. Flint, Rockville.

Twelfth District (Ind.) Medical Society.—The following officers were elected at the annual meeting held at Fort Wayne on April 9: *President,* Dr. James W. McKinney, Bluffton; *Vice-Presidents,* Dr. Thomas J. Creel, Angola, and Dr. W. E. Smith, Decatur; *Secretary-Treasurer,* Dr. L. T. Rawles, Fort Wayne.

Rock Island County (Ill.) Medical Society.—At the annual meeting at Rock Island on April 8, the following officers were elected: *President,* Dr. W. D. Snively, Rock Island; *Vice-Presidents,* Dr. John W. Seids, Moline, and Dr. Henry J. Love, East Moline; *Secretary,* Dr. W. D. Chapman, East Moline; *Treasurer,* Dr. A. T. Leipold, Moline.

Springfield (Mass.) Academy of Medicine.—The annual meeting was held on April 8, when officers were elected as follows: *President,* Dr. Walter R. Weiser; *Vice-Presidents,* Dr. E. A. Bates and Dr. A. O. Squier; *Secretary,* Dr. John M. Birnie; *Treasurer,* Dr. George L. Schadt.

New London County (Conn.) Medical Society.—At the annual meeting held in Norwich, officers were elected as follows: *President,* Dr. William H. Gray, Mystic; *Vice-President,* Dr. Anthony Peck, Norwich; *Secretary,* Dr. E. O. Winship, New London.

**The Late Dr. Prince A. Morrow.**—At a recent meeting of the Society of Sanitary and Moral Prophylaxis, the following minute was adopted: "The death of our honored President, Dr. Prince A. Morrow, has come to the members of this Society as a deep personal sorrow, and is an irreparable loss to the cause which he so ably and so heroically led. Almost single-handed he inaugurated in 1905 a movement in this country which is already nation-wide, and which promises to be the first successful attempt, by means of public enlightenment, to reach the root of an evil of the ages and a curse of mankind. A man of great intellectual force, of strong personality, and of unflinching courage, he entered upon the task against unusual odds, inspired others with his own enthusiasm, and founded this, the first Society of its kind in America, which has already become the parent of over thirty similar Societies in as many different states. In the guidance of this movement which had to deal not only with a delicate subject, but also with a false public sentiment, the greatest wisdom was required. Dr. Morrow led the way with unerring judgment and tact. To-day there are arrayed in the ranks of his followers many of the foremost and conservative men and women of the country. To those who came more intimately in contact with him as his personal associates on committees, his death comes as a personal bereavement; to all of us it is a loss which will be deeply felt for a long time to come. All knew him as a man of great ability, of the highest character, courageous, and true; and as a Society, we place upon our records this brief testimony of our love and high esteem. We extend to his family our deep sympathy in their great bereavement and irreparable loss. *Signed:* Edward L. Keyes, Jr., M.D., Thomas M. Balliet, M.D., Henry P. de Forest, M.D."

It was also resolved to hold a memorial meeting of the Society on May 22, at the Academy of Medicine.

**The Late Dr. Bristow.**—The following Resolutions were passed by the Council and adopted by the New York Academy of Medicine; *Whereas,* The Council of The New York Academy of Medicine has learned with profound sorrow of the death of Dr. Algernon Thomas Bristow, therefore be it *Resolved,* that the Council hereby records its appreciation of Dr. Bristow, the man and the physician. He became a Fellow in 1901, and served as Vice-President from 1906 to 1909. As an officer, as a member, and in his private practice he exemplified all that is best in the medical profession. He combined to an unusual degree the practical and the ideal in his work. Dr. Bristow was a man of great public spirit and much interested in all the activities of the Academy. His wise judgment and genial personality will be greatly missed. Therefore be it *Resolved,* that a copy of these resolutions be sent to the family and to the medical journals. Signed: William M. Polk, M.D., President; Charles F. Adams, M.D., Recording Secretary; Wisner R. Townsend, M.D., L. Emmett Holt, M.D., Committee of the Council.

**Obituary Notes.**—Dr. Edward Sawyer Bacon of Providence, R. I., a graduate of the Harvard Medical School, Boston, in 1889, consulting aural surgeon to the Butler and Providence City Hospitals, and surgeon to the Rhode Island Hospital, and a member of the American Medical Association, the Rhode Island State and Providence District Medical Societies, the New England Otological and Laryngological Society, and the Rhode Island Ophthalmological and Otological Society, died at his home after a long illness, on April 8, aged 50 years.

Dr. Frederick Clift of Kaysville, Utah, a graduate of the University of Cambridge, England, in

1870, and of the Keokuk Medical College, Keokuk, Ia., in 1891, editor of the *Utah Medical Journal*, and a member of the Utah State and Davis County Medical Societies, being secretary of the latter, died at his home, from pneumonia, on March 28, aged 66 years.

Dr. John H. Winch of Northfield, Vt., a graduate of the University of Vermont College of Medicine, Burlington, in 1880, a former member of the Vermont State Legislature, moderator of the town of Northfield, and a member of the Vermont State and Washington County Medical Societies, died at the Heaton Hospital, Montpelier, on March 28, aged 57 years.

Dr. George Martin of Montreal, Quebec, a graduate of Laval University Medical Department, Montreal, died at his home, from diphtheria, after a short illness, on April 1, aged 31 years.

Dr. John Jay Craig died at Columbia, Pa., on April 11 at the age of 33 years. He was graduated from Jefferson Medical College in the class of 1901, subsequently becoming resident physician in the Philadelphia Polyclinic Hospital and later serving in the same capacity at Dr. Trudeau's sanitarium at Saranac. He was a member of the Lancaster County Medical Society, of the Medical Society of the State of Pennsylvania and of the American Medical Association.

Dr. Egbert D. Doolittle died at Easton, Pa., on April 12 at the age of 67 years. He was graduated from the Bellevue Hospital Medical College in the class of 1870 and he was at one time President of the Lehigh Valley Homeopathic Medical Society.

Dr. James Strong Cameron of Red Bluff, Cal., a graduate of the University of California, Medical Department, San Francisco, in 1868, and a member of the California State and Tehama County Medical Societies, died at his home on March 24, aged 67 years.

Dr. Clara J. Alexander of Boston, a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, in 1889, and formerly a member of the staff of the New England Hospital for Women and Children, died recently in Mysore, South India, where she had gone to study Eastern diseases.

Dr. Robert Lindsey Carter of Gloucester, Mass, a graduate of the Hahnemann Medical College and Hopital, Chicago, in 1894, died at his home suddenly on April 10, aged 41 years

Dr. William T. Shelton of Umatilla, Fla., a graduate of the Louisville Medical College, Louisville, Ky., in 1872, died at his home on March 30, aged 76 years.

Dr. Franklin A. Shurtleff of Somerset, Mass., a graduate of the Albany Medical College, Albany, N. Y., in 1864, and a member of the school committee of Somerset for over forty years, died at his home on April 9, aged 75 years.

Dr. Parley H. Johnson of Adams, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1865, and a member of the New York State and Jefferson County Medical Societies, died suddenly in Watertown, from heart disease, on April 16, aged 73 years.

Dr. Henry G. Addy of St. John, N. B., a graduate of the University of Vermont College of Medicine, Burlington, in 1862, a medical officer in the United States Army during the Civil War, a commissioner of the General Public Hospital, St. John, and formerly on the Council of Physicians and Surgeons of New Brunswick, died at his home recently, aged 78 years.

# Correspondence.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

ADMINISTRATION OF THE INSURANCE ACT—LONDON MEDICAL BENEFIT COMMITTEE—VENTROFIXATION OF THE UTERUS—A HOSPITAL DEADLOCK—VERONAL—OBITUARY.

London, April 4, 1913

The working of the Insurance Act continues to give rise to excited discussions, some of them almost justifying the gibe that the law seems to have imbibed much of the provocative character of its author. At the London Committee for its administration yesterday a proposal was made to ask the Medical Benefit Sub-Committee to report as to whether the present system can be improved and if so to submit recommendations. The proposers said they all knew how the patients were being "fobbed off at the end of the day" at a surgery far away from their homes and so on. Prior to January he said they had not less than 1,500 doctors in contract practice in London and to-day far fewer. The chairman interposed—1,258—on which a rather unseemly contention arose, the speaker saying the chairman had misled those as to the number who would be on the panel and the chairman indignantly denying the charge. The exact number is not much to the point at issue and the effervescence subsided. The speaker added that the clubs and doctors had both cooled down and if there were 1,300 on the panels he believed 3,000 might become available for the insured under proper arrangements. He suggested a conference between doctors on and off the panels and the sub-committee might lead to good results. Dr. Turner seconded, as he thought the time had come to consider how, within the four corners of the act, they could modify the service so as to succeed in working it whole-heartedly. He had fought the act from the first because, while approving thrift and insurance, conditions were such that men of his profession ought not to be asked to submit to them. He had obtained replies to a specific question to medical men, whether the insured were getting as good attendance as under the old contract practice. The answers showed they were not, many being from those in favor of the act. He had, too, a despatch-box full of complaints.

Dr. H. H. Mills supported the motion but from a different point of view. Highly respected men informed him that they thought things satisfactory. The act emphasized the needs of the East End of London for the first time he declared. But surely every one who knew the East End would contradict him on this point for the need had been published freely for many years. A full discussion followed and the resolution was eventually carried by a large majority. So now one must await the report of the Medical Benefit Sub-Committee which it is to be hoped will be founded on extensive and impartial enquiry.

The gynecologists assembled in full force at the Royal Society of Medicine for the debate which had been arranged for them on "Ventrifixation of the Uterus," a proceeding which has been adopted in so many cases as to give rise to a good deal of comment, not a little of it adverse. The general practitioners who watch the cases before and after operation seem less enamoured of it than the specialists so that the discussion was well worth attending.

It was opened by no less than three carefully prepared papers on different points. The first was by Dr. W. S. A. Griffith, who laid down the indications which he considered called for suspension in consequence of failure of the supports to maintain the position necessary for the comfort of the patient and to enable her to perform laborious duties. The cases are twofold. (1) When the uterus is at or nearly at the normal level but retroversion or retroflexion of the body and broad ligaments causes prolapse of the ovaries. (2) When prolapse of uterus, ligaments, and ovaries is considerable and associated with varying degrees of vaginal, vesical, and rectal protrusion. In both these groups many cases are sufficiently relieved by pessaries, though some women prefer operations to their prolonged use with the associated douchings, etc. He did not support the practice of those who operate on patients in poor general health which they attribute to the retroversion but which is a symptom rather than a cause of ill health.

The second paper was on the technique and by Professor Briggs of the Liverpool University. He advocated a purely peritoneal direct ventrofixation over a limited appropriately chosen area, *i.e.* a site immediately adjacent to the pelvic floor. This operation he defended as the outcome of his personal experience of 600 cases.

The third paper, on "After Results," was by Dr. A. E. Giles. He confined his remarks to the specific operation which he terms hysteropexy and of which he has previously published results down to July, 1909. He has since done 199 cases, making his total 508. The general health was reported to be improved in over 90 per cent., the position of the uterus to remain good in over 95 per cent. Pregnancy following hysteropexy did not disturb the position and there were no complications in labor.

Dr. Herbert Spencer was the first speaker after the three papers were read. He at once expressed surprise at the frequency with which the operations were performed in these cases. He had himself only done it 27 times in 1,000 abdominal sections, for he considered it unscientific and by no means free from danger. He was influenced further by the many cases which he had seen of failure of the operation to relieve the symptoms. He saw that in Dr. Giles's valuable investigation into the after-results 42.2 per cent. had pain afterward though it was less than previously in 32.5 per cent. In his opinion both ventrosuspension and -fixation, as usually performed were dangerous, unscientific operations, which often give rise to peritoneal bands, and these on many occasions had caused strangulation of intestine. For procidentia after the menopause he admitted fixation might be a useful adjunct to colporrhaphy and perineorrhaphy, care being taken to perfectly close the peritoneum over the bladder.

Dr. A. Donald confined his remarks to cases of mobile retroversion for which many operations were done in the hope of removing symptoms attributed to congestion induced by the displacement. But he held that we have no reliable evidence that congestion is so induced nor that it could give rise to such changes in the endometrium as would cause menorrhagia, metrorrhagia, and leucorrhea. Stitching up the uterus in these symptoms was therefore unscientific. Endometritis was often the cause—never the result of retroversion. His practice was to curette these cases and pay no regard to the position of the uterus.

Dr. Macnaughton-Jones said he had never performed hysteropexy and did not think fixation should be done during the child-bearing period.

Miss Ivens said her experience was confined to Gilliam's operation—in some cases with Mays' modification. One case complicated by chronic appendicitis had been fatal; 93 per cent. followed up were satisfactory. Dr. Handfield Jones had seen much distress from the fixation having been done at too high a level and had given immediate relief by setting the uterus free again. The patient should be prepared by ten days' treatment in bed with hot douches and glycerin tampons. Dr. Arnold Lea said pessaries were seldom of any use except in simple retroflexion following confinement. He had done the operation 75 times, mostly for backward displacement. Dr. Hubert Roberts said retroversion needed no operation or if in any case it did it should be directed to improve the pelvic floor. Dr. H. B. Whitehouse did not approve the increasing tendency to fix the uterus which often failed to relieve. Cases should be carefully selected. He had seen one of intestinal obstruction brought about by a band resulting from fixation. Dr. Fairbairn thought those who did hundreds of fixations must be living in the mid-Victorian period when displacements were regarded as of supreme importance. Dr. Farquhar Murray reported observations made with Mr. Glendining on the capacity of the bladder before and after ventrofixation—half the cases showing increase and half decrease after operation. Dr. Walter Tate had done 44 ventrifixations in St. Thomas's Hospital between 1900 and 1910. He only advised it, when pessaries and other methods failed, for women in the prime of life who had to earn their living. He had found it of some use in distressing cases of incontinence of urine from weakness of the sphincter. Fixing the uterus seemed to support the neck of the bladder.

The president, Dr. A. Routh, said ventrofixation was often a useful addition to laparotomy for removal of appendicitis, but he hardly thought it necessary in other cases. His primary cases did not exceed 3 per cent. of his abdominal sections and comprised cases in which prolapse of one or both ovaries complicated retroversion. In such ventrofixation had its chief use. Curettage, plastic operations, etc., often gave more relief than fixation. If all minor proceedings failed then ventrofixation might be performed.

A curious deadlock has arisen over Marlow Cottage Hospital. The position of the building is unsuitable and for two years a scheme for a new hospital has been arranged to cost £2,000, for which over £1,300 has been subscribed and the charity commissioners have sanctioned a loan. Mr. Langley has offered to give a site and grant the loan on easy terms. At a public meeting yesterday in support of the scheme and pledging to assist the committee in raising the funds after some discussion a division resulted in a tie, 43 votes for and 43 against. The chairman, who is Vicar of Marlow and a trustee of the hospital, declined to give a casting vote.

Death from veronal is getting a common heading in the newspapers. At an inquest on a widow of 36 the other day an open verdict was returned, the only evidence being that she had taken different medicines for insomnia without advice. Probably she read about this in the papers.

Yesterday an inquest was held concerning Capt. Stacey, late I.M.S., who was found dead in his bedroom with a partly smoked cigarette in his fingers and veronal tabloids strewed on the floor. It

was known he had been in the habit of taking them for sleeplessness. In a letter to a brother he had said: "I shall be going away to-night," but had never threatened suicide and the brother did not understand the phrase about going away. Death from veronal was proved by medical evidence. Verdict, suicide under temporary mental derangement.

Surgeon-Lieutenant-Colonel A. Brebner has died at the age of 72. He graduated at Aberdeen, M.B. and C.M. in 1862, took also L.R.C.G. Edinburgh and next year joined the Army Medical Service. He served in the Bhootan expedition of 1865, was at the recapture of Dewangiri and received the medal with clasp. He proceeded to the M.D. degree at his university in 1873 and retired in 1888.

Dr. G. Templeton, of whose death you will have heard as the tourist in Norway who was lost in the snow, practised in London for some years. A telegram yesterday announced that his body had been found by a private expedition, eight miles from Finse. He had been lost exactly a week, during which various expeditions had searched for him without success. He was fond of traveling, a clever linguist and accomplished musician, 42 years of age, and graduated at Edinburgh.

## OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

YAWS MISTAKEN FOR LEPROSY—SEGREGATION OF LEPERS—OPENING OF THE CEBU HOSPITAL—NEW HOSPITAL AT ZAMBOANGA—TAX ON POLISHED RICE—PERSONAL.

MANILA, P. I., February 28, 1913.

THE Bureau of Health has undertaken a second collection of lepers in the Moro Province, and this time, has reached considerable territory that has heretofore not been covered. At the Port of Davao, sixty-nine persons that were suspected of having leprosy were assembled who had been collected from various places in the province that bears the same name. On careful examination, practically all of them were found to be cases of yaws in the third stage. This again demonstrates in a forceful manner the unreliability of the average lay reports with regard to leprosy. The Bureau of Health has been receiving information for many years that large numbers of lepers were presumably at large in Davao Province. Yaws does however result, when untreated, in horrible deformities and extensive ulcerations, and unless careful microscopical examinations are made, it is not an infrequent error even for medical men to mistae them for lepers. Persons being presented who had other diseases accords with the experience which the Bureau of Health has had in the early collections of lepers which were made in 1906, it being not an infrequent occurrence to find one hundred or more persons collected as lepers, who on careful examination, were found to be sufferers from syphilis, yaws, paralytic deformities, elephantiasis, madura foot, and other diseases.

So far as known, with this collection of lepers, with the exception of a few who have escaped, all lepers throughout the Philippine Islands have now been segregated and transferred to the leper island of Culion or are undergoing special treatment at the San Lazaro Hospital at Manila.

The Legislature, which has just closed, has finally provided funds for opening and maintaining the Southern Island Hospital at Cebu. It will perhaps be remembered that this seventy-bed institution was completed last year. This hospital is second only to the Philippine General Hospital of Manila, and is modern in every respect and prepared to handle medical, surgical, obstetrical, and tubercular cases in wards or private rooms. Owing to Cebu being tributary to a large amount of territory in the Southern Islands, the hospital will no doubt relieve a large amount of distress and suffering and prevent many deaths from surgical and other diseases that can be saved with hospital facilities.

Under the auspices of the Episcopal Church, with the aid of the citizens of Zamboanga, the construction of a thirty-bed hospital is about to be begun at that place. An institution of this kind will also be capable of doing a large amount of good, because at the present time in the entire Moro Province, with the exception of the military hospitals, there is no place where civilians can receive adequate medical relief.

The bill which the Bureau of Health introduced into the Legislature, which had for its object the reduction in the use of unpolished or decorticated rice, failed of passage, but there are good prospects that at the next session it may become a law. Under the provisions of the bill it was proposed to bring about the desired object by placing a tax of two cents a kilo upon polished rice and no tax upon the unpolished rice. The legal determination as to whether a rice was polished or unpolished was to rest upon the amount of phosphorus pentoxide which it contained. All of that which upon analysis was found to contain 4 per cent. or more of phosphorus pentoxide was to be regarded as unpolished rice, and that which contained less was to be regarded as polished rice. In other words, the amount of the beriberi preventing principle was to be determined in terms of phosphorus pentoxide. This test would have been capable of easy application by the mere appearance of the rice or by staining it with methylene blue. The polished rice stains very deeply while the unpolished rice only takes a small amount of stain.

The Bureau of Health is now preparing to inaugurate a very extensive campaign of education, both by the distribution of printed literature and by public lectures as to the origin, manner of spread and prevention of beriberi.

Dr. Herbert Coe, of the Washington State Board of Health, is at present making an extended tour of the Philippines for the purpose of acquainting himself with the health work conducted in the Islands.

## Progress of Medical Science.

Boston Medical and Surgical Journal.

*April* 10, 1913

1. The Conduct of Labor without Vaginal Examinations. C. M. Green.
2. Diabetes in Infancy and Childhood. J. L. Morse.
3. Bilateral Subclavian Aneurysms. H. A. Lothrop.
4. Follow-up Work as an Element of Effective Treatment in an Out-Patient Clinic for Eye Diseases. E. Hartshorn and M. M. Davis, Jr.
5. Progress in the Diagnosis and Treatment of Intussusception. W. E. Ladd.
6. A Case of Seemingly Hopeless Peritonitis Apparently Cured by Hypodermic Injections of "Marine Plasma." H. Packard.
7. A Convenient Anatomical Device. R. M. Green.

**1. Conduct of Labor without Vaginal Examinations.**—C. M. Green concludes that the common custom of making frequent vaginal examinations during labor is a bad one and deserves to be classed as "meddlesome." These examinations disturb and often hurt the patient, they add to the risks of infection, they give no informa-

tion that cannot generally be obtained by external examination, except as to the condition of the cervix, and the possibility of prolapse of the cord or a fetal extremity. Except in hospitals, to which naturally many abnormal cases are sent, the greater majority of cases are normal as far as the fetal passenger and the maternal passage are concerned, and when delay occurs it is much more generally due to defective pains. Frequent vaginal examinations do not remedy this difficulty, and the obstetrician's efforts can be more profitably employed than in making them. The author considers the conditions which would warrant or necessitate vaginal examinations during labor. Pathological conditions usually call for operative procedure, from low forceps to abdominal section. Most of these procedures necessitate vaginal invasion; but every vaginal examination shadows the prognosis, if Cesarean section is finally decided on. Antepartum hemorrhage, pregnancy toxemias with convulsions, compound or other abnormal presentations, minor relative disproportion between pelvis and fetal head, complicating neoplasms, prolapse of the funis, and evidence of impending fetal asphyxia, surely necessitate treatment involving invasion of the vagina But in the absence of these more or less grave complications, the only indications for vaginal examination in cases which at the beginning of parturition bid fair to be normal seem to the author to be only the prolongation of labor beyond reasonably normal limits of time, that is, ineffectiveness of the maternal powers, and suspected prolapse of the cord or a fetal extremity.

2. **Diabetes in Infancy and Childhood.**—J. L. Morse notes that diabetes occurs in childhood more frequently than is generally supposed. The frequency of diabetes increases directly with age. A possible explanation for the lesser incidence of diabetes in childhood may be the somewhat greater sugar capacity at this age than in adult life. The symptoms in children are, of course, in the main the same as in the adult—polyuria, polydypsia, emaciation and constipation. Polyphagia is, perhaps, more common. Symptoms of gastric disturbance are said to be more common in the child (Stern). Disturbances of the skin, eye and nervous system are less frequent. Marked changes in the disposition are, however, very common, the child often becoming quiet, morose and sad. Enuresis is often the first symptom to call attention to the trouble, while in others the first thing noticed is the presence of flecks of sugar on the clothing, vessel or floor. Another early and suspicious symptom is irritation of the external genitals.

5. **Progress in Diagnosis and Treatment of Intussusception.**—W. E. Ladd states that the time has passed when a recovery from intussusception following laparotomy and reduction is to be considered a surgical curiosity. In the last five years there have been successfully treated at the Children's Hospital in Boston ten times as many cases of intussusception as in a period of five years previous to 1908. The medical practitioner deserves part of the credit for this gratifying improvement for having brought the cases earlier to the hospital. In the future if he will bring still earlier and doubtful cases one can hope to determine the diagnosis with the aid of the *x*-rays in time to cause another marked reduction in mortality. Patients with intussusception operated on within thirty-six hours from the onset of symptoms may be expected to recover.

## New York Medical Journal.

*April* 12, 1913.

1. Poliomyelitis and Variola. F. Proescher.
2. The Pathology of Neuralgia. C. McConnell.
3. How Much of Eugenics Is Scientific? C. E. Nammack.
4. Atypical Children. S. P. Goodhart.
5. Hemorrhoid Operations. L. Watson.
6. Improvements in the Speculum. P. Z. Herbert.
7. Exercise and Diet in Relation to Growth. R. H. Dennett.
8. The Treatment of Pneumonia. M. Packard.
9. Jequirity in Ophthalmic Work. J. Allan.
10. Heart Block (Adams-Stokes Syndrome). I. W. Held.
11. Suitable Amusements for the Growing Child. P. M. Van Voast.
12. Diseases Influencing Growth. B. R. Hoobler.
13. Acute Anterior Poliomyelitis. H. B. Haywood, Jr
14. The Injection of Salvarsan. R. Ormsby.

1. **Poliomyelitis and Variola.**—F. Proescher describes the microorganisms which he has detected in smears made from emulsified brain and spinal cord of monkeys that had been affected with the experimental form of poliomyelitis. These microorganisms included the following: Extremely small cocci stained pale blue, deep blue, or metachromatic violet. These were on the limit of visibility (0.1 micron), appearing single or in chains or groups. Deep blue diplococci shaped like gonococci, approximately 0.2 micron in diameter; short, thick, oval bacilli, about 0.1 micron long, in form of diplobacilli, and single ones, one to two microns long, stained deep blue; slender bacilli, about two microns long, stained pale blue; a spirochete form, from three to five microns long, slightly curved, and stained pale blue. The bacilli are the predominating form. The virus is extracellular, intracellular, and intranuclear Smears from sterile pustular contents of cases of small pox stained with methylene azure carbonate showed many microorganisms, their size ranging less than 0.2 micron to one micron. There were isolated or diplobacilli; chains or groups of short oval bacilli; very small diplococciform pneumococci and bean shaped diplococci, all divided by a small, pale stained zone; large, round cocci, sometimes divided into four parts like tetragenus. The majority of these microorganisms were intracellular and quite often intranuclear. Some of the epithelial cells were entirely filled with these microorganisms. Extracellular, they were few in number. These were also found in different strains of glycerinated vaccine and in the filtrate of greatly diluted vaccine filtered through Berkefeld filter V.

2. **Pathology of Neuralgia.**—C. McConnell believes that at the present time the question of the pathology of neuralgia resolves itself into the histological changes that are found in the nerves and which one understands as indicating neuritis. The difficulty that arises may be somewhat obviated if the term neuritis is not restricted to those changes alone that are purely inflammatory. It is next to impossible for such alterations to be present without indications of some degenerative conditions of the parenchymatous portions of the nerve fibers.

8. **Treatment of Pneumonia.**—M. Packard outlines the general rules and indications in the treatment of pneumonia. It is well to recall that each patient is a law unto himself, and each individual patient's blood pressure and vascular state probably differs in some degree. Some cases demand vasoconstrictors, such as camphor, caffeine, or suprarenal extract. Others demand only cardiac stimulation, and even a few demand venesection and vasodilatation. The combination of all methods may be required, but it is only by means of the intelligent study of the blood pressure and vascular state that better results can be realized in the treatment of pneumonia.

9. **Jequirity in Ophthalmic Work.**—J. Allan, in making use of this drug in ophthalmic practice has employed the infusion of jequirity in the strength of one in 12.5. The cases in which it has been prescribed were cases of granular conjunctivitis and corneal opacities. A requisite knowledge of what is expected to occur is very desirable, for to the uninitiated the intense reaction frequently provoked is somewhat alarming. It is also but right to inform the patients that in all probability the eye condition will temporarily become worse. Such a precaution will avoid much needless mental anxiety. The effect of the instillation of infusion of jequirity into the eye is to produce a marked inflammatory reaction of greater or less severity—the so-called "jequirity ophthalmia." There is generally severe conjunctival chemosis and there may be considerable edema of the lids. Such symptoms as intolerance to light, lacrymation, pain, etc., which are common to all acute in-

flammatory affections of the eye, are present. The acme of the inflammatory reaction is, as a rule, reached in from twelve to eighteen hours after the instillation, and the acute symptoms will have generally subsided in three or four days' time. The infusion of jequirity may have to be exhibited several times, but it is inadvisable to repeat the instillation until the acute symptoms have subsided. The interval between applications naturally depends to a large extent on the intensity of the reaction produced. Very often a further instillation of jequirity may be permissible after four days; in other cases an interval of a week or ten days must be allowed to elapse.

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## Journal of the American Medical Association.

*April* 12, 1913.

1. Ligature and Suture Material. Also an Account of the Introduction of Gloves, Gutta-Percha Tissue and Silver Foil. W. S. Halsted.
2. The Conservative Treatment of Diabetic Gangrene of the Lower Extremity. DeW. Stetten.
3. Advice to Patients on Leaving the Hospital after Surgical Operations. L. Freeman.
4. The Purity of Commercial Sodium Salicylate. W. S. Hilpert.
5. The Wassermann Reaction in Diabetes Mellitus with Special Reference to Acidosis. J. H. Richards.
6. Induced Variations in the Agglutinability of Bacillus Typhosus. F. P. Gay and E. J. Claypole.
7. Sporotrichum Schenckii. K. Taylor.
8. Pyelotomy for the Removal of Renal Calculi. D. N. Eisendr..
9. A Case of Pulmonary Insufficiency. R. Abrahams.
10. The "New Ileel" with a Pathognomonic Sign for Detecting Inflammatory Lesions in the Anterior Arch of the Foot. M. Strunsky.
11. A New Operation for Hemorrhoids. R. A. Bachmann.
12. Hemorrhagic Disease of the Newborn Infant Treated by Horse-Serum. W. B. Jennings.

1. **Ligature and Suture Material.**—W. S. Halsted describes the use of silk sutures in the surgical clinic at Johns Hopkins University and points out the advantages of silk over catgut. Kocher has employed silk sutures to the exclusion of catgut for a number of years, it is true, but his example has not been generally followed. The author has given fair trial to sterilized catgut from time to time, but has found the ordinary black silk suture used by him much safer. The silk is finer than that used by Kocher (and black spool silk is selected in preference to white, because it is more easily seen, both on the bobbins and in the healed wounds), and the author relies on transfixion to prevent the ligature from slipping. With the finest silk and needles one can perform feats in hemostasis which would be very difficult if not impossible with catgut. The surgeon who has not tested the method will be surprised to find how large a vessel can be entrusted to a transfixion ligature of the finest silk. As regards later trouble from buried silk, the author believes the wound would not be infected once in a hundred cases when the technique is perfect. If fine silk is used and the infection is slight it is not probable that any of the buried threads will be extruded or the healing be delayed. At Johns Hopkins they find themselves more and more frequently employing the interrupted suture; a granny knot is adequate if fine silk is used, and in some cases even better than the reef knot. Fine silk often permits the closing of a wound that would require drainage if catgut were used. One should not use silk in the presence of infection. In many of their operations, and always when indicated, they paste to the skin over a wide field, a fine batiste dipped in celloidin. Since 1894 they have covered fresh wounds with silver foil and believe that it has an appreciable chemical effect, antiseptic, and not irritating. Three or four layers are usually placed on the closed incision and over this the thin paper between which the leaves are packed. Gutta-percha tissue is also found to be very useful. For thirty-three years gutta-percha tissue, usually referred to as rubber tissue or protective, has been one of the most prized and inexpensive articles of the author's surgical armamentarium. A moist scab under such tissue is better than a dry one, a fact of which any layman or surgeon can convince himself, and it is gratifying to see how generally gutta-percha tissue has come into use by American surgeons.

2. **Treatment of Diabetic Gangrene.**—De W. Stetten has evolved a method of conservative therapy based on the three following principles: (1) Systemic treatment of the diabetes and prophylaxis against the development of dangerous complications, especially coma. (2) An attempt to improve the circulation in the extremity. (3) The treatment of the local infection on rational general surgical and aseptic principles. Seventeen cases treated by this method during the past two and a half years are reported and analyzed: eleven of the patients were cured, five died, and one is reported not improved. The average duration of treatment was two and three-quarters months. The causes of death in the fatal cases were pneumonia, sepsis, and diabetic coma, either one of these alone or coma following the two others. Of the eleven patients who recovered, the routine treatment included in nine cases either no operative procedure at all, or such minor operations as opening an abscess or removal of a gangrenous toe. In the other two, on account of a rapidly advancing gangrene, amputation of the leg at the junction of the upper and middle thirds had to be performed. Each of these patients has a useful stump and a movable knee. While the number is not sufficient from which to draw a broad general conclusion, the author says that the cases were not selected ones and some of them were very severe and all of them would probably have been subjected to amputation under the former methods of treatment. The routine conservative treatment consisted of an antidiabetic regimen guided by daily examinations of the twenty-four-hour urine, the diet being relaxed only when coma was impending. The author regularly administers sodium bicarbonate in large doses (not, however, sufficiently large to derange the stomach), and codeine, and morphine to relieve pain. If anesthesia is required for operation chloroform should never be employed and ether should be used seldom if ever. Nitrous oxide or nitrous-oxide oxygen anesthesia is chosen instead. The attempt to improve the circulation of the extremities narrows itself down to the production of hyperemia by Bier's method which is of positive value. Passive hyperemia is contraindicated. On general principles the author administers sodium or potasium iodide for their absorbent qualities and nitroglycerin as an arterial dilator. There should be the strictest asepsis and the greatest attention to the needs of the individual case; antiseptics should be avoided as devitalizing, as well as tight bandaging, and the retention of pus must not be permitted to occur. As regards amputation when required, the author never uses an Esmarch bandage and the operation should be done as simply and rapidly as possible and with a minimum amount of traumatism.

3. **Advice to Surgical Patients.**—L. Freeman discusses the necessity for and the general character of advice which should be given patients on leaving the hospital after surgical operations. He notes the advantages of shortening the time that the patient is kept in the hospital after operation and the disadvantages which result from the passing of these patients from under the observation of the operator to follow their own ideas or the usually unreliable advice of those around them. The general instructions of the surgeon should explain the postoperative conditions to the patient in such manner as to remove all occasions for worry. Abdominal supporters, it should be explained, are of little service except to give a sense of security and comfort, and dressings are simply to protect the scar. The author gives special directions for overcoming constipation without becoming dependent on cathartics, and explains that the ordinary diet can, except in special cases, usually be resumed. With regard to exercise, going up and down stairs, returning to work, etc., he says that the tendency has been to keep the patient inactive and idle too long. But

the importance of rest and sleep and of not indulging in exhausting social duties, particularly in conversations about the operation, he emphasizes strongly. Explanation of several postoperative conditions which are to be expected will relieve the patient of much physical and mental strain and hasten complete recovery.

8. **Pyelotomy for the Removal of Renal Calculi.**—By D. N. Eisendrath. (See MEDICAL RECORD, February 22, 1913, page 360.)

## The Lancet.

*April* 5, 1913.

1. The Genital Functions of the Ductless Glands in the Female. W. B. Bell.
2. Intrathoracic Aneurysm. F. de Havilland Hall.
3. Non-Parasitic Cysts of the Liver. S. Boyd.
4. The Pathology of Tuberculosis in Infancy and Childhood. C. P. Lapage and W. Mair.
5. Acute Tuberculous Pneumonia; Recovery. S. N. Galbraith.
6. The Technique of Excision of Cervical Ribs. A. S. B. Bankart.
7. Case of Epithelioma of the Auricle and Cervical Glands; Removal of Auricle and Glands. N. Patterson.

1. **Genital Functions of Ductless Glands in the Female.**—W. B. Bell states that any influence the ovary has over the general metabolism is related to and dependent on its primary reproductive function. The author does not believe that it influences the metabolism except in so far as this special function is concerned. Of course, removal of the ovaries may produce a temporary disturbance, but this does not invalidate the view just mentioned. On the other hand, the rest of the ductless gland system is related to the genital functions in various ways. Firstly, some of the members—the thyroid, pituitary, and suprarenals—influence the development and subsequently preserve the integrity and activity of the genitalia. Others—the thymus, and possibly the pineal—appear to prevent sexual precocity. Secondly, all the ductless glands control the metabolism in response to the necessities of the genital functions. But, in addition, they adapt the whole organism to the possibility of the situation, and regulate the secondary characteristics, both physical and psychical, to suit the needs of the individual. Once, however, the reproductive organs are removed or undergo atrophy, the primary genital functions of the rest of the ductless glands cease, and the rearrangement of the metabolism that follows produces what are known as the symptoms of the menopause. Contrariwise, insufficiency of the thyroid, pituitary, or suprarenals causes the cessation of the genital functions with atrophy of the uterus.

2. **Intrathoracic Aneurysm.**—F. de Havilland Hall concludes his lectures on this subject. The medical treatment comprises the use of one of the following methods: The Tufnell plan of treatment by means of a restricted diet consisting of ten ounces of solid and eight ounces of fluid food in the twenty-four hours. This diet is kept up for six or eight weeks, during which time the patient is kept at complete rest. The diet is then relaxed somewhat, but the absolute rest is continued for the next four months. This method of treatment relieves the symptoms of aneurysm, but it rarely produces a cure. The administration of iodide of potassium produces striking effects, chiefly in the relief of the pain of aneurysm. The gelatine plan of treatment was introduced by Lancereaux, who stated that among 1000 injections of a solution of gelatine he had not observed any mishaps. The solution he advised consists of 25 parts of gelatine and 7 parts of chloride of sodium dissolved in 1000 parts of water. He injected 200 grams at a time, and the process was repeated every four or five days. If the gelatine be of good quality and thoroughly sterilized at a high temperature Lancereaux maintained that the treatment is in no way dangerous, and yields very favorable results. The author next discusses the expectant and symptomatic methods of treatment. For the relief of the agonizing pain no remedy has a more remarkable effect than bleeding. The surgical treatment of intrathoracic aneurysm may be considered under five heads: (1) the ligature of the great vessels arising from the innominate artery or arch of the aorta; (2) the passing of wire—filipuncture—into the aneurysmal sac, with or without the passage of a galvanic current through the wire; (3) galvanopuncture; (4) Macewen's method of needling; and (5) the ligature of the neck of the aneurysmal sac.

4. **Tuberculosis in Infancy and Childhood.**—C. P. Lapage and W. Main state that the mortality from tuberculosis in children rises during the first year, reaches its maximum in the second year, and then falls rapidly. Statistics compiled from post-mortem examinations show that in childhood glandular tuberculosis is very common and in a fair proportion of the cases the disease is limited to the lymphatic glands (17 per cent. of the 150 cases). At the Manchester Children's Hospital the abdominal glands are more often affected than the thoracic glands in the ratio of 71 to 55. Though the abdominal glands are more often enlarged than the thoracic the most common condition is that in which both sets of glands are enlarged. Tuberculosis of the thoracic glands (28.1 per cent.) and of the abdominal (32 per cent.) may occur without any accompanying lesion of the lungs or intestine respectively. There may be disease of one part, such as the intestine or lung, with accompanying disease of both thoracic and abdominal glands. Apical tuberculosis is not very rare even in infants, and the form of pulmonary tuberculosis usually designated as chronic phthisis, though not very common, does occur in young children. Chronic cavitation is found even in young children, although in cases dying from chronic pulmonary tuberculosis there is usually a tendency for the disease to spread in the lungs and to become generalized to other parts of the body. Tuberculous meningitis most often follows generalized or miliary tuberculosis, but it not uncommonly occurs as a complication of glandular or bony tuberculous lesions.

## British Medical Journal.

***April* 5, 1913.**

1. Cancer of the Tongue. C. Ryall.
2. Enucleation of Tonsils and Removal of Adenoids under Gas Anesthesia. J. F. O'Malley.
3. A Case of Vaquez's Disease (Polycythemia with Plethora and Splenomegaly). H. L. Watson-Wemyss.
4. Tuberculoma of the Larynx. W. Sanderson.
5. An Account of a Teratoma of Unusual Size Affecting the Testicle of a Horse. H. Blakeway.
6. Distilled Water versus Salvarsan in the Treatment of Syphilis. G. A. Stephens.
7. The Genital Functions of the Ductless Glands in the Female. W. Bell.

1. **Cancer of the Tongue and Its Relation to Syphilis.**—C. Ryall concludes on the basis of extensive observation that lingual cancer is a common sequela of syphilis, more common than locomotor ataxia and much more selective than the latter of the male sex. Its frequency with regard to sex is as 8 to 1, whilst the incidence of syphilis alone, judging from the author's experience at the London-Lock Hospital might roughly be considered as ten times more common in males than in females. The author lays down the following basic principles with reference to the treatment of lingual cancer: Wide removal in definite epithelioma; microscopic examination of suspicious lesions; the avoidance of tobacco by those who have syphilitic lesions of the tongue; and radical treatment of all syphilitics till serologically they are pronounced free. The thorough treatment of syphilis would wellnigh abolish cancer of the tongue.

6. **Distilled Water in the Treatment of Syphilis.**—G. A. Stephens recommends a simple treatment for syphilis that consists in the hypodermic injection of 6 to 10 centimeters of distilled water every three days for from two to four weeks. The rationale of this treatment is based upon the changes in surface tension of the body fluids produced by the injection of distilled water. The

lowering of surface tension is associated with a more rapid production of catalytic products in the cells, but the injection of vaccines is associated with the production of antibodies; therefore it seems to the author but right to infer that the production of antibodies is closely associated with a lowering of the surface tension. The addition of distilled water to blood corpuscles so affects the osmotic pressure as to cause a passage of water into the cell, which gets larger and eventually scatters its contents. In disease the rapid catalytic changes and the rapid production of antibodies are interdependent, and if one can induce these marked catalytic changes with or without a vaccine, one stands the chance of setting free a number of very useful and remedial antibodies. The marked effect produced by the injection of distilled water in two cases of cancer suggested to the author that in any similar disease of less malignancy their effect ought to be still better. The distilled water injections were given in six cases of syphilis with apparently remarkable results.

### Berliner klinische Wochenschrift.

*March* 31, 1913.

**Present Status of the Treatment of Syphilis.**—Touton goes back fifty years, when the Berliner klinische Wochenschrift was first established. At that period Lorinser and Hermann, two Viennese syphilographers, were loudly proclaiming that tertiary syphilis was a myth and that that which passed as such was only the pernicious effects of mercury. Even the great von Zeissl was infected by these views to the extent of claiming that the worst forms of tertiary syphilis resulted from early intensive mercurial treatment. He depended chiefly on small doses of iodides and Zittmann's decoction, using mercury only as a last resort. At the same period Boeck of Norway was treating his syphilitics by syphilization so-called, the supposed syphilis virus, with which he inoculated his patients consisting chiefly of the discharges from chancroids. Hunger cures were also practical. In great detail the author brings down his subject to date and says in conclusion that to-day the treatment of syphilis stands under favorable auspices. We have specifics and supporting remedies in abundance which may be varied indefinitely to meet the demands of the individual case. We must, however, fight a little shy of laboratory medicine in its direct transference to the clinic. Our greatest tasks are the prevention of latent focus formation and of mobilization of such foci once they have formed. We also have to antagonize vigorously the untoward collateral activities of our specifics.

**Present and Future of Spinal Cord Surgery.**—Rothmann concludes a serial article on this subject as follows: In addition to the older extramedullary spinal operations which have proved their worth, our resources will become enriched with the results of intramedullary operative intervention. This resource will have for its leading aim the extirpation of tumors of the cord whether generated from within or from without. When sufficiently small and circumscribed central tumors may be extirpated in one or two stages through the posterior columns, and lateral tumors through the lateral columns. The columns themselves are naturally sacrificed. The same technique may be used in foreign bodies (bullets, etc.), hemorrhages, foci of softening, cysts and abscesses. The author terms this pathologic intervention. What is termed by him physiologic intervention is also employed in the same connection. This is indicated to cut off the transmission of painful sensations and comprises division of the crossed anterolateral columns. The resource is indicated especially in inoperable tumors. Division of the posterior columns for spastic states is inferior to Foerster's nerve root division, but is of benefit in athetosis.

**Ulcus Duodeni in the Nursling.**—Schmidt states that this subject has been much neglected. This cannot be due to the rarity of incidence for the association is one relatively common and is recognized as an occasional associate of pedatrophy. The author reports a number of cases and his conclusions are as follows: Round ulcer of the duodenum occurs with greater frequency during the first year of life than is commonly assumed. Of 3,824 autopsies made during the past seven years under Professor Ponfick this lesion is shown to occur more frequently during this year than in any subsequent one. Of 1,109 autopsies during the period of childhood 20 cases (1.8 per cent.) were examples of ulcus duodemi in the nursling. It appears to be due to any condition which greatly weakens the vitality—prolonged suppuration, sepsis, rachitis, nephritis, and primary marasmus.

### Münchener medizinische Wochenschrift.

*April* 1, 1913.

**Serodiagnosis of Pregnancy, etc.**—No less than five communications on this subject are published in this number. Schlimpert and Hendry at Krönig's Freiburg clinic relate their experience with the dialysis procedure and ninhydrin reaction. Their conclusions are in the highest degree corroborative of those of Abderhalden himself. There was not a single negative find. Unfavorable results reported by others are referred to defective technique and failure to study controls. The ninhydrin reaction is a specific one almost without exception. Freund and Brahm discuss the optical and dialysis methods which they have tested in Charité Hospital, Berlin. They write at much length and submit numerous tabulated results. The conclusions are not so optimistic as to what has actually been done, although they are hopeful of ultimate success. Negative results occur with the most perfect technique and from positive finds we cannot yet with certainty diagnosticate pregnancy. The discovery of these reactions marks, however, a notable biologic advance. Professor Freund gives a brief outline of the history of the serodiagnosis of pregnancy. The first step in this direction was the discovery of a precipitin reaction by Liepmann in 1902 in which placental serum was employed. The latter, while prepared by treating animals with placental extract, gave positive results in gravidæ, negative in nonpregnant women and males. Other labors resulted in this field and Abderhalden's methods published in 1909 were the direct outgrowth of these antecedent studies. Freund does not write in the interest of a priority claim, but simply to demonstrate the evolution of serodiagnosis. Abderhalden, however, answers him at length, denying that his discoveries came about in the manner stated. He goes back further to the publication by Schmorl and Veit of the discovery that placental tissue finds its way into the blood of the gravida. This alone is the foundation of his studies.

**Advances in Our Knowledge of Beriberi.**—Wieland, at the close of a collective review of recent papers on this subject, expresses himself as follows: Let us suppose that people who subsist chiefly on polished rice are deprived in part of some substance necessary to their vitality, and that the nutritive defects may be corrected by eating whole rice, or by the simple injection of the more or less hypothetical protein substance "vitamin," "oryzarin," "antiberiberin," or whatever else we may term it. Animal experiment gives strong evidence in favor of this view, and numerous clinical results also point in the same direction. It is, however, quite probable that the carbohydrates may be similarly defective. Table sugar is practically chemically pure and cooking starch not less so. Again we know that prolonged boiling quickly destroys vitamin. What the author seeks to bring out is that beriberi is not a unique affection, but simply a member of a group disease which is due to defective nutriment.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

*The Reserve.*—It may be accepted that no part of the subject of the principles of life insurance is more generally misunderstood by the public and by the policyholders than that of the purpose of the reserve fund. Certain uninformed policyholders have become agitated over the proportions of this fund, even to the extent of appealing to the courts for an order to compel the companies to distribute immediately to them that part of the reserve fund which they believed to belong to them as individuals. It is apparent to the initiated, however, that the stability of the companies and the certainty that they will be able to carry out their contracts to the very end depend upon the maintenance of an adequate reserve, the matter being such an important one in fact, that the laws of the different states require the companies to keep a specified reserve on hand at all times.

It would be possible to effect insurance at lower rates increasing year by year, if this were a convenient and practical plan; but it has proved eminently more satisfactory to charge a uniform level premium throughout life. The disadvantages of the plan of insuring with increasing rates is demonstrated by the experience of the assessment companies, which shows that men dislike the idea of rates which, though low in the beginning, gradually become so high in advanced age as to be prohibitive. This unsatisfactory feature would also upset the calculations based on mortality tables and result in an impairment of the financial condition of the companies, as it would lead to the withdrawal of good risks, while those with impairments would surely remain.

The level premium plan, then, is the only one which can be carried out on a certain and scientific basis. In order to accomplish this end, the net premiums charged in the early years must be greater than are necessary to cover the risks in these years, and the excess derived in this way must be reserved for the later years when the advancing age of the insured will bring with it a rate of mortality higher than could be met by the net premiums payable at this time.

To the uninitiated the reserve accumulated as a result of the low early mortality seems enormous and uncalled for, but it must always be understood that it is put by purely for the purpose of paying death claims for which it will positively be needed later on. Another point to be borne in mind is the influence of modern conditions of living which tends to the lowering of the mortality among insurers in early and middle life and to a decidedly increasing mortality among those in older ages. The saving in mortality may therefore be expected to be smaller in the advanced ages when the death rate will more nearly approach that indicated in the table.

The insurance fund is created solely from and, moreover, includes the entire amount of the net premium receipts with the interest thereon at the assumed rate, and the reserve is the balance of this fund on hand at any given time. It belongs to the policyholders as a body, not as individuals, for it has been put by solely for the payment of death claims and it must constantly be drawn upon for that purpose up to the consummation of the last contracts, when none of it will remain. Technically speaking, the reserve which the company must have on hand to meet the future claims as they become due is the difference between the present value of the claims which under the existing policies the company will have to meet and the present value of the payments under the existing policies which the company is going to receive.

The source and purpose of the reserve may be made more clear by a few extracts from the standard tables compiled by the companies for ready reference. In the first place it must be explained that the net premium of $19.91 already referred to is the amount actually collected in practice, but that the exact net premium is $19.90726. In calculating the reserve, the fractional part of a cent must be taken into consideration on account of the great size of the total fund. In this way, a larger amount is collected than is absolutely necessary but the difference gained by the companies will be returned subsequently to the policyholders in the form of dividends.

If the 81,822 members, age thirty-five, of the hypothetical company insuring for $1,000 on the ordinary life plan, pay $19.90726 at the beginning of the first year, the net premium income for the first year will be $1,628,851.83. To this is added twelve months' interest at three and one-half per cent. ($57,009.81), making a total income in the first year of $1,685,861.64. The mortality table shows that 732 deaths may be expected during this year calling for the payment of claims amounting to $732,000. Deducting these claims from the total income, leaves a balance of $953,861.64, the total insurance fund or reserve for this year.

There will be 81,090 persons living at the age of thirty-six at the beginning of the second policy year. Each again pays a premium of $19.90726, making the total premium income for this year amount to $1,614,279.71. Adding to this the reserve from the first year ($953,861.64) there will be a balance of $2,568,141.35 at the beginning of the second year, and the interest ($89,884.95) will bring the total insurance fund at the end of the second year to $2,658,026.30. Deducting the death losses expected this year to the amount of $737,000, there remains a balance of $1,921,026.30.

It is seen, then, that the reserve increases during the early years of the policies, but if these calculations are followed out year by year, it will be found that by the time the age of fifty-seven is reached, the death claims begin to exceed the premium receipts, and that eight years later at the age of sixty-five the yearly mortality is twice the premium income. Finally, if the computation is carried on until the three surviving policyholders at age ninety-five are reached, it will be found that the net premium income in that year is only $59.72. To this, however, is added the reserve carried from the previous year ($2,838.85) and also the interest of one year ($101.43), so that the total fund on hand at the end of the year amounts to $3,000, just enough to pay the last three claims. With the last three payments the hypothetical company may terminate, having fulfilled the requirements of every contract through the accumulation of an adequate reserve and without depending upon the taking in of new members, that is to say, the so-called infusion of "new blood."

# Book Reviews.

Diet and Hygiene in Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital; Consulting Dermatologist to Randall's Island Hospital, to the Hospital for Ruptured and Crippled, and to the Manhattan Eye and Ear Hospital. Price, $2.00 net. New York: Paul B. Hoeber, 1913.

The subject of metabolism is looming large in medical thought and practice in these days, threatening even to outrank that of bacteriology, which so overshadowed every other idea but a few years ago. The disease was simply a struggle between toxin and antitoxin, the body and tissues being merely the battlefield; but now it is coming to be recognized that the nature of this field is of the utmost importance. If the invading hosts of bacteria find therein sustenance for even a brief period, the battle is lost. Whether the body does or does not offer a favorable soil for the growth of pathogenic bacteria depends largely upon wherewithal it is nourished and how it assimilates its nourishment. And other diseases and conditions predisposing to disease depend likewise upon the processes of metabolism. Obesity, gout, diabetes, blood pressure, Bright's disease are all largely diseases of metabolism. It is believed by an increasing number that the problem of cancer will be solved through the study of metabolism, and in the book before us Dr. Bulkley argues most convincingly that the origin and cause of very many of the common diseases of the skin are dependent upon or largely influenced by the nature of the food taken. The author's statements are based upon his personal experience in a long series of cases and it is difficult to see how one, after reading this book, can doubt that a purim-free diet is best suited for the nourishment of man, or at least that many of the physical ills that afflict mankind are caused by an excessive intake of proteins. Dr. Bulkley's book will be hailed by the followers of Haig as one more, and a strong argument in support of their contentions.

Lectures on Clinical Psychiatry. By Dr. Emil Kraepelin, Professor of Psychiatry in the University of Munich. Authorized Translation from the Second German Edition. Revised and Edited by Thomas Johnstone, M.D., Edin. M.R., C.P., Lond.; Member of the Medico-Psychological Association of Great Britain and Ireland; Fellow of the Royal Medical Society; Fellow of the Incorporated Society of Medical Officers of Health, and Member of the Leeds and West Riding Medico-Chirurgical Society. Third English Edition. Price $3.50 net. New York: William Wood & Company, 1913.

Kraepelin is recognized as the greatest authority in psychiatry at the present day. Everything he writes is read by psychiaters in this country with avidity. His clinical lectures on psychiatry have passed through two editions in German and the present is the third edition in English. These lectures are practical for the general practitioner as well as for the specialist. In them the question of diagnosis occupies, to be sure, the first place; but the subject of treatment is nowhere ignored. The latter statement is especially true respecting the acute exhaustive conditions. The author remarks, however, in his preface, that the lectures must not be looked upon as a text-book. Their aim, he says, will be far better attained if they prove of some value as a guide to the clinical investigation of the insane. In his opinion, "what the student ought to learn in the hospital, besides the examination of patients, is not text-book knowledge, which he can acquire just as well or better at home, but how to turn his observations to account, and the careful judgment of any given case." So, while the present work is lacking in the actual presentation of patients, such as one can only get in hospital experience, yet the material utilized in the author's descriptions is worked up in a manner which only the master can carry out. The descriptions are brief and yet fairly complete; and they are systematic. There are thirty-two lectures, in the present edition, embracing a great variety of the psychoses of the Kraepelin classification, or pertaining to the various forms. The editor has also brought the subject matter up to date as far as he could, by appendices. The translation is in pleasing style and seems to have been well performed. Some corrections have been made to the former English editions. Chapters which might be cited as of especial interest to the general practitioner are those on epileptic insanity, alcoholic mental disturbances, insanity in acute diseases, varieties of delirium, puerperal insanity, morphinism and cocainism, morbid personalities, morbid criminals and vagabonds. But there are so many others of equal interest, such as hysterical insanity, insanity after injuries to the head, irrepressible ideas and irresistible fears, that one is tempted to quote the entire list of chapter headings to cover those which will be found of real interest and value in the book.

The Treatment of Infantile Paralysis. By Oskar Vulpius, M.D., Professor Extraordinary at the University of Heidelberg. Translated by Alan H. Todd, M.B., B.S., B.Sc. (Lond.), House Surgeon, Grey's Hospital; Late Resident Surgical Officer, Royal National Orthopedic Hospital. With Introduction by J. Jackson Clarke, M.B., (Lond.), F.R.C.S. Price $4.00 net. New York: William Wood & Company, 1912.

The rapid increase and wide dissemination of poliomyelitis during the past few years has increased the responsibility of the physician and especially of the orthopedic surgeon in the treatment of this disease and its aftermath. In spite of the most painstaking care in the management of the initial phase of this disease, in the majority of cases the skill of the orthopedic surgeon is ultimately taxed in the management of the resulting paralyses and deformities. The attitude toward the latter in the past has been one rather of passive resignation, with the application of plaster-of-Paris dressings or of braces, with the object of preventing contractures or strengthening weak limbs. Within recent years the resources of active surgical intervention have been freely drawn upon, and the methods of tendon transplantation and shortening, of arthrodesis, etc., have enabled the orthopedic surgeon to accomplish a great deal for the unfortunate victim of infantile paralysis. The utility of these methods has been abundantly tested in the University Clinic of Professor Vulpius at Heidelberg, who brings to the writing of this book the credentials of authority and of experience. The volume deals almost exclusively with the orthopedic aspects of infantile paralysis. Nevertheless, an introductory chapter discusses the symptomatology, etiology, and pathological anatomy of this disease. Part I takes up the general principles of the orthopedic management of cases of poliomyelitis under the following subdivisions: (1) General treatment in the acute stage, and stage of repair during the first year of illness. (2) Orthopedic apparatus. (3) The surgery of paralysis, including the treatment of paralytic contractures and deformities by means of "redressement," tendon lengthening, and tenotomy, and the restoration of function, by means of muscle implantation, arthrodesis, tendon shortening or transplantation, and nerve transplantation. Part II deals with the special regions of the body with their paralyses, such as the neck with its paralytic torticollis, the back, with its paralytic kyphosis, lordosis, scoliosis, etc. One is impressed in reading this volume with the wealth of clinical material upon which it is based. This material is clearly mirrored in the large number of photographic illustrations which form a valuable and most striking feature of this work. The surgery of paralysis is discussed with that wonderful elaboration and regard for details which is characteristic of German authors. This is a part of the work in which the orthopedic surgeon will find many valuable suggestions. There are many diagrams showing the modes of dividing and uniting tendons. The use of silk ligaments and the technique of making them are discussed in detail. The author, however, does not favor the systematic employment of silk ligaments, except as a means of facilitating the periosteal fixation of natural tendons. The subject of nerve transplantation is thoroughly discussed in a section of thirty-three pages. The author believes that nerve transplantation attacks the disease at its actual site, and if successful is an ideal method of treatment, for it brings about functional recovery without anatomical disturbance of the musculature. But neuroplasty is not of such practical value as tendon transplantation for the large run of hospital patients, and is less certain in its results. In presenting this book to English readers, the translator has performed his task with a sympathetic appreciation of the importance of the subject matter and a command of clear and elegant diction. The volume is one which may be regarded as a landmark in the literature of poliomyelitis.

The Story of a Doctor's Telephone—Told by His Wife. By Ellen M. Firebaugh. Author of "The Physician's Wife." Price $1.25. Boston, Mass.: The Roxbury Publishing Company, 1912.

This story gives in a bright and original way all sorts of incidents that go to make up human existence. They are all so typical and so true to life that they can be duplicated in any physician's household. It is worth an hour of the busy doctor's time to be able to laugh at his own little annoyances and troubles, as this story will compel him to do. The author has a keen sense of humor and the more serious incidents are treated with the truly sympathetic touch. Whether or not the doctor reads the story may not be important, but it is to be hoped that all his patients will do so.

# Society Reports.

## THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Stated Meeting, Held March 24, 1913.*

The President, Dr. Brooks H. Wells, in the Chair.

**The Problem of Cancer.**—Dr. Francis Carter Wood read this paper. He said that the cancer problem was still absolutely baffling despite the work of clinicians for generations and there was little hope of an immediate solution. From whatever direction the question of cancer was approached the fundamental problem was simple; it was only why one cell grew without obeying the observed rules limiting tissue proliferation in adults, while others did not. Inversely, an equally important and difficult question was why the normal adult cells did not grow wild, but remained within very fixed anatomical regions. The final etiological question was, therefore, why a cell grew—a problem at the present time insoluble, and likely to remain so. A survey of the results of morphological investigation of human cancer showed that the classification of the different types of cancer had been perfected and elaborated until but little more could be expected. This had enabled them to determine rapidly and accurately the nature of tumors removed at operation and even to assist the surgeon in determining the nature of the growth before deciding as to the extent of any operative procedure. The questions as to whether cancer was hereditary and whether it was on the increase were impossible to answer at present as even in a great city like New York the imperfect forms of registration did not permit of an accurate classification of the nature of the tumor reported, of the organ involved, the sex of the patient, or other necessary data for any practical cordination of statistics. The limits of research in this direction had been reached until health records were much improved. The author said that it seemed to him that the only way in which the problem could be solved was by studying the cell and the influences which acted upon it and then endeavoring to elucidate the conditions by which cells could be modified so that they grew beyond their natural anatomical bounds and became cancers, the human race being considered as only one animal type and its cancers as a special variety of mammalian cancer. But centuries might elapse before an insight was gained into these obscure phases of life and it would be unwise to center wholly upon this purely biological phase of the question because they cared little for the cancers of mice and rats except as they helped to interpret the cancers of man. Hence observers should try out on inoperable cancers in human beings every hint which analogy might offer as suggesting a possible means of obtaining immunity against cells, using the knowledge now available as to the way in which bacteria attacked the organism. If the discovery of fundamental principles lay in the direction of human experimentation rather than along lines of clinical observation, it might be interesting to review the results of experimental work during the last twenty years. But in doing this it was important to remember several facts which were usually not taken into consideration. First, distinct biological differences were apparent between carcinoma and sarcoma and in all discussions of the cancer problem sharp distinctions should be made between results obtained on the different groups, and, second, most of the work that had been done had been on transplanted tumors which were much more susceptible to external agents than were primary tumors. With these restrictions it might be regarded as proved: 1. That carcinoma in animals was not contagious. 2. That carcinoma in animals was not due to a parasite. 3. That the morphology of carcinoma throughout a long series of propagations remained much the same. 4. That in the transplantation of carcinoma from one animal to another the new tumor was produced entirely from the cells transplanted and no transplantation would occur if the cells were crushed or their individuality in any way destroyed. 5. That occasionally in the course of transplantation of a carcinoma change might be induced in the connective tissue elements of either the stroma of the tumor or what was more likely, the connective tissue of the animal in which the new tumor developed, so that a sarcoma was produced that might overgrow the carcinomatous portion and the resulting tumor continue as a pure sarcoma. This coincided with the phenomenon occasionally seen in human beings where a mixed carcinoma and sarcoma existed together. It was suggestive that in metastases from some of the teratoma both the sarcomatous and carcinomatous elements or either formed alone might metastasize. 6. That the microscopical structure of a tumor was no certain guide to its malignancy. With certain reservations this applied quite as well to human beings. Mechanical conditions seemed to play just as important a part in the malignancy of a tumor as its purely morphological cell structure. 7. That there was a very marked difference in susceptibility to tumor inoculation in animals of the same species under different conditions of stock, climate, and nutrition. This showed how delicate was the balance between the tumor and the host and gave a reasonable basis for hope that by modifications of living the incidence of carcinoma might be somewhat diminished. 8. That it was impossible to transfer tumors from one species of animal to another. 9. That apparently no general immune reaction to carcinoma was procured in the fluids of the body, that was, when live cancer cells were introduced into an animal they did not act as did bacterial or foreign proteins, by the production of antibodies, but that healing, if it occurred, was due to local tissue resistance. 10. Finally it had been shown that autolytic products or the expressed juices or crushed or ground cells of tumors had no capacity to induce immunity to carcinoma in an animal, but, on the contrary, such material might often produce an increased sensitiveness to tumor growth. Only growing uninjured cells had the capacity to induce immunity and this immunizing power was inherent not only in the tumor cells but also in the normal tissue cells, such as blood corpuscles or the cells of the skin, liver, kidney, or spleen, from animals of the same species. The remarkable effect of radium on transplanted mouse tumors had led to the abuse of this form of treatment. Animal experiments had also justified the criticism of the cures reported from the use of vaccines, from the employment of bacterial products, and from certain chemotherapeutic attempts. It seemed that the lines of attack for the future were for the biologist to learn as much as possible of the methods of influencing the growth of the normal cell. Work of the character which Jacques Loeb had carried on for years on the eggs of sea-urchins pointed clearly to the mastery of the question. The experimental pathologist had before him the somewhat appalling task of repeating the experiments of Murray in breeding tumor mice for six or eight years, through hundreds of generations, in order to determine whether the slight hereditary liability which Murray observed was generally applicable in different strains of these animals and in other animals, provided they could obtain a sufficient number of spontaneous tumors. Veterinary surgeons could do much to help out the pathologist if they would make a more thorough study of tumors in dogs so that they could get an inoculable carcinoma of these animals, the larger size and longer life of which would be much more suitable for certain types of experiments than were mice and rats. The question of the nature of immunity following the inoculation of living cells must be re-examined with the greatest care. The serologist must be called in to settle the disputed question of serum reactions following the inoculation of living cells and the question of the presence or absence of immune substances in the blood. The discovery by Rous that a type of sarcoma in one animal alone seemed to possess a filterable virus pointed to an extensive line of work on the sarcomata, for while carcinoma was, according to their present knowledge, not due to any parasitic agent, yet a certain group of sarcomata had always been considered by pathologists as probably of parasitic nature. The chemists had still much to do in the study of the nature and activities of the ferments, not only of the healthy normal cell, but also of the cancer cell, and even the fundamental problem of whether the metabolism of the cancer cell was different from that of the normal cell could not yet be regarded as finally settled, though many suggestive observations pointed to a distinct difference in this respect. The pharmacologist might well take up the hint of Ehrlich's salvarsan and Wassermann's selenium-eosin, and attempt to produce some substance which would have a direct chemical action on the cells of the carcinoma without destroying the life of the host. Even the physicist might help by separating for use some of the special products of the disintegration of the radiocative bodies so that they might be applied directly to tumors in a concentration much greater than hitherto available. The clinical pathologist and the practitioner of surgery had an important field in that methods of diagnosis were still too imperfect in the determination of internal tumors. The field of the surgeon would be greatly increased if the clinical laboratory man could present him with a means for early and certain diagnosis. The knowledge should be spread that at the present time the surgeon had the only efficient means of treating carcinoma.

**The Surgical Pathology of Cancer.**—Dr. Thomas S.

Cullen of Baltimore, Md., read this paper. He emphasized the importance of cooperation between the laboratory man and the surgeon and believed that in the future all surgeons would be trained laboratory man. In abdominal surgey, if the surgeon was familiar with his pathology, it would give him a clew to the work he was called upon to do. While many investigators were trying to discover the cause of cancer, there were many others who were trying to get at an early diagnosis because no matter what the cause might be the cure of the patient depended to a large extent upon the early diagnosis. After briefly reviewing some of the chief varieties of cancer, Dr. Cullen said that in regard to cancer of the tongue it had been pointed out that the milky patches on the tongues of smokers, if removed at once, would result in no further trouble; if one waited without interference carcinoma would develop. In carcinoma of the lip, if the radical operation was performed, the chances of complete cure were good. In carcinoma of the stomach pathology did not aid one a great deal. If one waited for the stomach washings of the characteristic lesions to make a diagnosis of cancer of the stomach it would be so late in the course of the disease that little could be done for the patient. The only thing to do was to make an exploratory operation in order to learn with what kind of a cancer one had to deal. The surgeon as well as the pathologist was aided by a fluoroscopic examination and this was destined to play a large rôle in the making of early diagnoses. If one were dealing with a carcinoma of the intestine, signs of obstruction appeared fairly early and more and more cases were now apparently cured by early operation. The pathology here was quite characteristic. Cancer of the rectum and lower sigmoid could be detected by the proctoscope, and by its use many early diagnoses were now made. In fact, with the proctoscope in the majority of cases a diagnosis was relatively easy. There were two chief growths of cancer which were very important, cancer of the breast and cancer of the uterus. Cancer of the breast in the early stages might be beneath the skin and there might not be any adhesions or puckerings, but as the disease advanced this characteristic puckering of the skin occurred. If one cut into the growth and removed a local area, the portion could be immediately recognized; if it proved to be cancerous, the complete and radical operation should be done together with the removal of the axillary glands. Dr. Cullen discussed the surgical pathology of the uterus and exhibited histological pictures on the screen showing what was normal and what was pathological. In cases of cancer of the uterus the pathologist acted as the Supreme Court and decided whether or not cancer existed, and it depended upon him whether or not the patient was to be subjected to a dangerous operation. There was the closest relation between the laboratory man and the surgeon, as had been pointed out, and it was fortunate if the two were combined in one man. Pictures were shown of normal and pathological conditions of the cervix and uterine mucosa. In connection with the differential diagnosis between carcinoma and other conditions of the uterine mucosa Dr. Cullen showed pictures of hypertrophy of the uterine gland in both the pregnant and non-pregnant uterus, the manner in which new glands were formed in adenocarcinoma, atypical proliferation of the gland epithelium, commencing carcinoma of the body, etc.

**The General Principles of the Surgical Treatment of Cancer.**—Dr. John A. Hartwell presented this paper. He said that the hope that the experimental studies now being so extensively carried on would result in some means other than surgical for the treatment of cancer must not be permitted to obscure the fact that at the present time the only treatment which was effective was an operative procedure. The degree of effectiveness which this treatment yielded was based on well-defined principles and it was with these that they were concerned. The fact of prime importance was that, in its incipiency, cancer was a local lesion. In the early stages the growth was entirely by continuity. Hence there must be a time in the life history of every cancer when it was amenable to complete eradication, unless it was located in a region where its inaccessibility rendered this technically impossible. It followed sooner or later when the disease ceased to be a localized lesion that its eradication was not a possibility. Fortunately cancer attacked with the greatest frequency the stomach, the uterus, the rectum, the large and small intestines, the female breast, and the structures in and around the mouth, and in about the order named as regarded frequency. Cancer was comparatively rare as a primary lesion in the pancreas, liver, brain, and lung. Thus in the majority of cases cancer occurred in an accessible region, and patients suffering from it had been sucessfully cured when the lesions had been located in any of these regions. While surgery afforded a cure in a large number of cases, the death rate from this disease was enormous and apparently on the increase. The reasons for this were ignorance, carelessness on the part of the medical profession and the laity, the inherent difficulties in diagnosis, and the fact that surgery had as yet much to learn concerning the overcoming of the difficulties which surrounded the complete eradication of the disease even in the early stages. The Pennsylvania Cancer Commission in an investigation of four hundred cases reported from individual physicians throughout the State, found that superficial cancer had been apparent on an average of eighteen months before the case came to the surgeon. Eleven months had elapsed between the time that a surgeon had been consulted and the date of the operation. In deep cancers this time was one year. About one case in thirty of breast cancer was not even examined by the first physician consulted, and in one case in six, salves, ointments, etc., were prescribed with advice to temporize. Sixty-eight per cent. only of superficial cancers were operable when they came to the surgeon. Only 48 per cent. of deep-seated cancers were operable when first seen by the surgeon. Data from the large hospitals of New York City showed that this community was equally open to criticism. In a series of cases covering five years in one hospital over 63 per cent. were found totally inoperable. Of 102 cases of pyloric cancer admitted to the hospital during a period of five years, only three were successfully treated by the radical removal of the disease, and what was worse only ten were in condition to attempt such treatment. Dr. Hartwell related several cases that illustrated the direful results of a waiting policy in cases of cancer of the pylorus. He related one instance that had come under his personal observation in which the patient showed symptoms of serious gastric disturbance with loss of weight; these symptoms were assigned to a gastric neurosis due to overwork. He was advised to take a long rest, preferably taveling abroad. Less than a week later, just prior to his expected sailing, he developed acute abdominal symptoms for which an immediate operation was necessary. An inoperable carcinoma of the pylorus was found. There was no justification in thus temporizing with a disease that inevitably proved fatal if left alone. Every patient presenting symptoms which made the diagnosis of a deep-seated cancer seriously to be considered was entitled to and should have urged upon him an exploratory operation. Dr. Hartwell gave the results of gastrectomy in the hands of different operators which showed that the mortality and percentage of recurrences were such as to make it little less than criminal that in this city only one patient out of thirty having gastric cancer, admitted to a general hospital, reached the surgeon's care early enough to allow of his being permanently helped. The causes at work to produce such a state of affairs were the difficulties in diagnosis, carelessness and a spirit of *laissez faire*, which meant that laziness and possibly ignorance were potent factors in maintaining the high mortality of cancer. The campaign against cancer must be energetic and continuous and directed toward an improved condition of affairs in their own ranks. The principle of all importance was based on the fact that cancer was at first a local disease and was then curable, while later it was neither. Therefore he made an emphatic appeal for the exercise of every diagnostic aid, including exploratory operation if need be, for its early recognition. A second principle of hardly less importance rested on the fact that certain lesions might be transformed from a benign to a malignant character. The Pennsylvania Commission found that 40 per cent. of the deep-seated and 39 per cent. of superficial cancer could be so considered. Notable examples of these were seen in the leucoplakia of the tongue, the chronic ulcer on the lip, the pigmented mole, the chronic pyloric ulcer, the clonic diverticulum, and possibly most important of all the chronic cystic mastitis. The experience of every surgeon and pathologist proved to his own satisfaction that these conditions had changed from a benign to a malignant growth. Why, then, were they persistently treated as the former until the latter had developed? If the physican would learn this pathological lesson and explain to the patient that surgery in a much more dreadful form was the outcome of the waiting policy, the affirmation might be ventured that a much larger number than at present would elect to have the early operation. In many instances a precancerous condition existed and the term, with a definite knowledge of its significance, should become one in general daily use by the clinician. The knowledge of the relative frequency of the different varieties of cancer was meager and this paucity could be remedied by properly organized study. Cancer cells were active entities with great potential evil, and hence should be

treated in such a way as to limit their extent when once they had found a place in the human body. The operative principles which must guide the surgeon in the management of cancer were based on the fact that the tumor followed in individual localities definite lines, and on the fact that cancer cells had an inherent vitality which made them capable of independent growth when planted in a favorable environment. Experience had taught what directions would be taken, but there was still a dearth of knowledge as to which type of tumor was most active in rapid and wide dissemination.

**How We May Reduce the Mortality from Cancer of the Uterus.**—Dr. Herman J. Boldt presented this paper. He concluded that nothing definite was known as to the cause of cancer and that there were no symptoms which alone were characteristic of cancer of the uterus. The onset of the disease was so insidious that sometimes the neoplasm had progressed to a stage beyond the hope of cure by any kind of operation before the appearance of a symptom sufficiently marked to cause the patient to seek advice. As to the question of publicity, the general sentiment had been that knowledge of the early symptoms of cancer of the uterus should be disseminated through the medium of the newspapers and magazines. So strongly was this emphasized on a number of occasions that at the Congress of Surgeons of North America, recently held in this city, a committee was appointed to devise a method of securing such publicity. If publications were to appear in the lay press, the method recommended by the committee of the American Medical Association was the only one that was strictly ethical. The printing of articles with the name of the medical writer attached was reprehensible. In the publicity undertaking they were following in the steps of Germany where the dissemination of knowledge by similar means was begun by Dührssen of Berlin many years ago. While abroad during the past summer the writer had consulted with a number of men who were connected with university hospitals and who had studied carefully the question of publicity. They stated that they had seen no larger percentage of operable cases since circular letters had been sent out but what they had observed was that a goodly number of neurasthenic women were made more nervous and consulted physicians in the fear of cancer. They were not likely to get under observation a larger number of cases of incipient cancer of the uterus by giving the cancer symptoms to the public through the medium of the lay press. On the contrary, it was more than likely that of the large number of women suffering from leucorrhea, those of the neurasthenic type would simply acquire an aggravation of their nervousness with the result that they would rush to the physicians for examination, and if told that they had no malignant disease would be distrustful and seek the advice of others. The only rational way was to impress on the profession the importance of being conscientious in the manner of examination, and never superficial. Let the teaching to the laity on this particular subject come from the family physician and not through newspapers and magazines. To bring about a lower mortality from cancer of the uterus it was only necessary that members of the medical profession should use in practice what they so well knew in theory concerning the occurrence of the first symptoms of this dread disease. The physician must be urged to realize that in all instances in which there was the slightest suspicion of cancer his obligation was to ascertain by all diagnostic means at his command that cancer was not present rather than to affirm a cancer diagnosis. Of every curetting scrapings should be examined. From every cervix that appeared suspicious of cancer enough should be excised for a microscopic examination. When the diagnosis of cancer had not been positively excluded such a patient should be constantly under the supervision of her physician. Where a diagnosis of cancer had been made the writer favored the extended abdominal operation for the greater number of patients. The exceptions to this rule were patients who were very obese; cases of cancer of the body of the uterus, where the uterus was freely movable, and cases of incipient epithelioma of the vaginal part of the cervix. Patients who had passed what the writer had designated as the incipient stage of cancer should be operated on by the abdominal route, and the operation should be done extensively; the parametrium and enlarged glands should also be removed. The ordinary panhysterectomy was inadequate. On women who were so obese that an abdominal operation was undesirable, the vaginal operation devised by Schauta in connection with the paravaginal section described by Schuscardt, should be the method of choice. Borderline cases, those in which it was very doubtful whether it would be found possible to extirpate all the cancerous tissue although it might be possible to extirpate the uterus, were not suitable for the extended abdominal operation since the primary mortality was necessarily great and the remote results were comparatively still more unfavorable. In these patients a palliative operation with an actual cautery was better. Dr. Boldt stated that, although he had subjected a number of patients to *x*-ray treatment for cancer of the uterus, he had not seen an instance of marked benefit. He reviewed the case reported by Bumm of a woman with an absolutely inoperable cancer who was much improved by the *x*-ray treatment, the cancer showing such a degree of retrogression that operation became possible. This case was interesting because in spite of the excellent clinical result microscopical examination showed the cervical wound cavity lined everywhere by a thin, not visibly changed, layer of proliferating cancerous tissue, then by a layer of strongly celled infiltrated tissue and finally by a voluminous layer of sclerosed connective tissue which almost entirely superseded the muscle lamellæ. In the parametrium and even outside the callous cancer nests were found. Frequently reports had been published of inoperable cases of cancer which had been rendered operable by *x*-ray therapy. Why were these patients operated upon when improvement was evident? Might it not have been that a continuance of the treatment would have resulted in a cure? Dr. Boldt urged that in this class of patients when an inoperable cancer became operable that the treatment be continued and the results noted.

**The Problem in Local Recurrent Breast Cancer.**—Dr. Carl M. Strobell of Rutland, Vt., read this paper. He said that this contribution to the present symposium was based on a contribution to the *American Journal of Surgery*, November 19, 1912, entitled, "A New Method of Treatment of Cancer of the Breast Based on the Nature and Causes of Recurrence." Little appeared in the literature on the subject of recurrence except the reports of unsuccessful cases. Dr. Strobell showed that the embryonic theory of the etiology of cancer was untenable and expressed the conviction that cancer was due to a pathogenic germ infection. Whenever a metastasis to any part of the abdominal or pelvic viscera manifested itself prior to or coincident with the recurrence it was evident that the primary operation was too late. Today for the first time in medical history there was apparently something tangible upon which to hang one's hopes, and this consisted mainly of the very obvious fact of infection by a specific pathogenic cancer germ, and the apparently corroborative results of the new chemic surgery. By the employment of the technique described in the article above referred to, recurrence unaccompanied by internal metastasis, was a curable condition. As an object lesson of what the method would do the author reported the case of a patient and presented illustrative photographs taken at different times during the progress of the operation and afterward showing the excellent results obtained. The patient had a very extensive recurrent cancer of the breast, one in which a surgeon would be loathe to attempt a re-excision. A radical standard extirpation of the breast had been performed in 1910 and at the end of a year and three months recurrence was noted. Two months later the case was referred to Dr. Strobell for operation by the chemic method. The tissues lying within the circumscribed area, down to, but not involving, the periosteum of the ribs, together with an enlarged node, were removed by the chemic method and skin grafts placed on the granulating surface. Every graft took and the skin was now normal in color, quite freely movable, and possessed of normal glandular secretions. The operation was done in November, 1912, and at this reading the patient was in fine condition.

**Resection of the Esophagus for Carcinoma; Recovery.**—Dr. Franz J. A. Torek reported a case of resection of the middle portion of the esophagus for carcinoma, the first case that had ever been successfully operated. The operation was performed by him on March 14, 1913. The patient was sixty-seven years old. The tumor was just below the arch of the aorta. His incision was carried through the whole length of the seventh intercostal space from the posterior end of which it was continued upward, cutting through the seventh, sixth and fourth ribs at their angles; this method was simpler and gave a better exposure than any of the other methods of access To reach the part behind the arch of the aorta, a number of its thoracic branches were divided and the aorta was lifted forward. To do away with the danger of leakage from the upper stump of the esophagus, which had been the cause of many deaths, he dissected the

whole esophagus free and brought it out through an incision at the anterior border of the left sternocleidomastoid muscle. The patient made a satisfactory recovery. Dr. Torek called attention to the fact that success depended largely upon early diagnosis.

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

*Stated Meeting, Held March 18, 1913.*

DR. LINSLY R. WILLIAMS IN THE CHAIR.

**A Case of Crossed Paralysis and Right Hemiplegia with Aphasia Occurring Five Days Post-Partum.**—Dr. HENRY W. BERG reported this case which occurred in a woman thirty-three years of age whose family history was negative. She had been married five years and had three children. The first delivery, three years ago, was instrumental; the second was difficult; and the third, six days previous to the onset of her symptoms here related, was complicated by an adherent placenta which was extracted manually. She had a headache three days before and weakness of the right upper extremity. Inability to talk or understand speech developed on November 7, six days after the labor. Physical examination showed a right hemiplegia; abdominal reflexes were not obtained and there was flaccid paralysis of the right upper and right lower extremities. There was no Babinski sign present on the right side. She did not respond to questions or appreciate what was said. She had a lactating breast. On November 8 the right lower extremity was spastic, the knee jerks very lively, and the patient more apathetic and stuporous. In the evening the breathing was of the Cheyne-Stokes type and the right eye was turned outward and downward. There was right facial weakness, ankle clonus on the right side and Babinski's sign on both sides. The Wassermann test, blood culture, and cerebrospinal fluid were all negative. On November 9, Dr. Brettauer thought the condition was one of sepsis. On November 11, Dr. Sachs thought she had an infectious thrombus involving the pial veins, chiefly with exudate. On November 14, the general condition of the patient was better; she responded more readily when asked to hold up her hand, but had scarcely any power in the right hand or leg. There was complete recovery of the right eye muscle. There was left ptosis and internal strabismus and the pupil was dilated. On November 25, Dr. Friedenberg diagnosed a double optic neuritis. On December 6, the hemiplegia and reflexes were unchanged and the ptosis was clearing, but the patient was still having involuntary discharges. On December 30, the patient was up and in a chair but complained of painful contraction of the right upper extremity. There were right hemiplegia, knee jerks, right clonus, Babinski and Oppenheim signs. There was no longer any ocular palsy but the patient was still aphasic. By January 30, the general condition and most of the symptoms had improved though there were still marked right ankle clonus and Babinski. The urine was practically negative. The patient continued to improve and by March 14 could utter a few words. The sensory aphasia was slightly improved and she was slowly recovering the power to use her limbs. Of special interest was the fact that there was no cardiac lesion. Cardiac lesions or advanced cardiac diseases were not infrequently accompanied with hemiplegias during confinements; it was the excitement either before or after that caused in many cases of mitral disease an embolic deposit in the capsule with typical right or left hemiplegia. In the case reported the blood pressure was between 115 and 130. The question arose, what was the pathological cause in this case? Was there a thrombus of the veins of the pia with a deposit around the veins? Was there a thrombus of the large veins? Was there an embolus of the left side of the brain? Or was there a metastatic infarct complicating general sepsis? All these points had been thought of. Metastatic infarcts were not rare in such cases, and they came from the uterine sinus. An embolus in the pulmonary circulation was not rare and was due to an embolic deposit in the arteries or veins. In considering a thrombus of one of the veins one should consider the general circulation and the fact that in about 15 per cent. of the cases there was present a patent foramen ovale; therefore, an embolus would pass from the right or pulmonic side to the left or systemic side and so one could account for the resulting hemiplegia. Dr. Berg said he had seen cases of embolism in which four at least showed an embolus originating from a thrombus in the veins. On the seventh or eighth day Dr. Meyer discovered in this case a small nodule on the inner side of the leg; of course it was possible that this was present before it reached a size which would enable them to palpate it. From this there might have been thrown off an embolus which was carried in the circulation and deposited in the brain. It was also possible that Dr. Sachs's diagnosis was correct, a thrombus of the left side of the brain causing the symptoms. As to the location of the lesion in the left half of the brain, the symptoms indicated a crossed paralysis involving left ptosis and right hemiplegia with sensory and motor aphasia. There were both word blindness and word deafness; therefore, the trouble must have been located in the left cerebral hemisphere, to the inner side of the crux cerebri at or above the point where the third nerve left the hemisphere and would have to involve the motor tract fibers and the point of junction of the associated paths from the temporal and occipital lobe with the fibers from the third frontal convolution and island of Reil to account for the complete motor and sensor aphasia.

**A Case of Extreme Cardiac Hypertrophy.**—Dr. ALFRED MEYER presented this case. The patient was a woman, twenty-two years of age, an embroiderer. A point of special interest was that when twelve years of age, ten years ago, she was admitted to the old Mt. Sinai Hospital because of cardiac disease. She had measles at the age of one year, scarlet fever at the age of six, general edema lasting five months at the age of ten. On admission in October, 1903, she had an endocarditis. This patient had a mitral stenosis and insufficiency, and aortic stenosis and insufficiency, with edema of the eyelids and legs. The submaxillary, the post-cervical, and axillary glands were enlarged as were also those in the groin. The liver was much enlarged. She had cardiac palpitation, precordial distress, daily pains in the left shoulder, and slight dyspnea. There was no cough or expectoration. She had no appetite and was nauseated at times. There was no vomiting, no edema of the legs, no headache, or other symptoms. A second point of special interest was the excessive size of the heart. In the second interspace it extended two fingrs to the left of the sternum; the left border was two fingers breadth beyond the nipple line; the right border was one and one-half fingers outside the right border of sternum; the apex was seen and felt in the sixth space one and one-half fingers outside the nipple line. There was a double thrill at the apex, a double murmur at the apex, a double murmur at the base with systolic nodding of the head. A third point of special interest pertained to the diagnosis, comparison of the old and the newer methods, that was, the old method by percussion and the modern ones by fluoroscopy and skiagraphy. This was about the largest area of dullness due to mitral hypertrophy Dr. Meyer had ever encountered. The heart was enormously enlarged and especially on the right where it was increased beyond the right nipple. This case showed how easily compensation occurred; there was only a suggestion of dyspnea, practically no edema, and only a slight hepatic enlargement. Dr. Meyer called attention to the fact that the patient had scarlet fever when six years old and also a dropsy which lasted four months, and whether at this time there was an endocarditis or not, no one could say. There were fully developed lesions of both valves.

**Three Cases of Patent Ductus Arteriosus.**—Dr. MORRIS MANGES reported these cases.

CASE I.—This patient was thirty-five years of age and both her family and personal history were negative until four months before admission to Mount Sinai Hospital, when she noticed a progressive enlargement of the abdomen. She had no pain and complained of no other symptoms except that her urine was very scanty. A physical examination showed redness of the skin above and to the left and below and to the right of the umbilicus. At these situations the skin was hard, brawny, and infiltrated. This condition also obtained immediately around the umbilicus. Behind the left ear there was a cystic mass the size of a lemon over which the skin was adherent. There were hard shot-like glands above the clavicle, in both axillæ, and in both groins. The lungs gave evidence of fluid at both bases. The right border of the heart was six cm. from the median line in the second and third spaces. The left border was nine cm. to the left of the median line. The apex was in the fourth space in the midclavicular line. There was a short blowing systolic murmur at the apex which was transmitted a short distance to the left and also upward. In the second space it merged into a prolonged rumbling diastolic murmur. Both systolic and diastolic blowing murmurs were heard over the aortic area. In the first and second left interspace there was a prolonged systolic thrill. The veins of the abdomen were distended and there was a hard mass to the left of the umbilicus adherent to the skin and subcutaneous tissue. This mass was three inches in diameter

but there were no intra-abdominal masses palpable. There was edema of the legs. The cervix was adherent posteriorly. There was an irregular hard mass surrounding the rectum chiefly in front, causing an almost complete stenosis. There were cauliflower projections in the mass but no bleeding. An abdominal paracentesis was done and about 10,500 c.c. of fluid removed. The section of a nodule of abdominal wall was removed the pathological examination of which showed colloid carcinoma. An orthodiagram taken about a month later showed the heart pushed up by the diaphragm, pulmonary conus very large, projecting forward and pulsating more than any other structures visible. The left ventricle was overacting and the aorta pulsating excessively. This picture corresponded with that seen in open ductus Botalli. An analysis of the chest fluid showed lymphocytes 76 per cent. and polymorphonuclears 24 per cent. The Wassermann reaction was negative. This patient was readmitted to the hospital three months later complaining of extreme weakness, dyspnea, and swelling of the abdomen. There was marked cachexia. The umbilical mass was larger than at the time of the previous admission and the heart showed dullness in Gerhardt's space, where a systolic thrill could be heard. At the apex there was a systolic murmur transmitted to the left. In the second left intercostal space there was a continuous roaring murmur, transmitted to the left and upward. The patient died suddenly on the day of admission and autopsy revealed carcinoma of the stomach, pylorus, ovaries, ascending, descending, and transverse colon, and rectum. There was a patent ductus arteriosus with a valve-like arrangement leading into the aorta. There was a conical opening into the ductus arteriosus which measured one cm. in diameter at its mouth and halfway surrounding the orifice of which was a shallow atheromatous plaque about three by ten mm. in dimensions. This opening led into the ductus downward and forward, and a probe could be readily inserted which emerged through the irregular orifice of the thrombus which surrounded the opening into the pulmonary artery. Beyond this the thoracic aorta was normal, showing a few irregular fatty streaks in the intima and measuring 42 mm. in circumference.

Case II.—This patient was admitted to Mount Sinai Hospital on June 26 and discharged July 18, 1912. She was fifty years of age and had had cardiac trouble for two years. Six weeks before her admission she suffered from a typical attack of sciatica, and three weeks after this developed headache, nausea, precordial pain, and cardiac palpitation. She had slight edema of the feet and scanty urine. The upper border of the heart was in the third interspace, the right border at the right border of the sternum, and the left border one finger outside the midclavicular line. The apex was in the fifth space in the midclavicular line. At the apex there was a faint systolic thrill and soft systolic murmur which was transmitted to the right and left. Over the second left interspace about two fingers to the left of the left sternal border was seen a marked systolic pulsation which could be followed to the midclavicular line of the left side. Over this area there was a rough systolic thrill transmitted upward to the first space and downward to the third and fourth spaces there was a rough systolic murmur. The heart condition remained the same while the patient was in the hospital. The orthodiagram report showed the heart approximately normal in size. The position was slightly to the left of normal. The pulmonary artery was very large and pulsated excessively.

Case III.—This patient was a woman, thirty years of age, whose family and personal history were negative. Her present illness began five months before her admission to the hospital when she noticed that she was becoming hoarse. Three weeks before admission she noticed extreme nervousness, cardiac palpation, and bulging of the eyes. These symptoms had increased. A diagnosis was made of exophthalmic goiter, patent ductus arteriosus, and chronic endocarditis. The right border of the heart was two fingers to the right of the sternum, the left border in the midclavicular line, and the apex beat in the fourth space. The action was very rapid and regular. There was a loud blowing systolic murmur at the apex transmitted to the left and heard all over the precordium and in the vessels of the neck. There was a loud rumbling systolic thrill present over the apex and over the pulmonic area. The object of this presentation was not to discuss the diagnosis but to show the use of orthodiagraphy, and Dr. Manges referred to Goodman's report, covering a period from 1847 to 1910, in which there were 34 cases with autopsy and 37 without autopsy. If the *x*-ray was used more frequently he believed that more of these cases would be diagnosed. Many diagnoses could now be made by the use of the orthodiagraph that could not be made in former years. In Dr. Meyer's wards at the Mount Sinai Hospital, one man had made a diagnosis of patent ductus arteriosus in five cases (four in children and one in an adult thirty years old), and another man had made such a diagnosis in three adults, 30, 35, and 50 years of age respectively. These diagnoses were made on physical findings and confirmed by the orthodiagrams. The reason for overlooking congenital cases was that most practitioners associated congenital lesions with cyanosis and clubbed fingers. Sometimes it was forgotten that longevity was not incompatible with congenital lesions; when these were absent, the lesions were often overlooked. Furthermore there were discrepancies among writers as to the exact description of the physical signs and the variations of the hypertrophies of the ventricles, the confusing interrelation of various lesions, etc. In the present lesion, the diagnosis ought to be readily made unless there were unusual complications. Dr. Manges' own belief was that some of these cases were mistaken for mitral lesions. The diagnosis was made on (1) murmur and thrill with transmission to interscapular region; (2) accentuation of second pulmonic sound; (3) Gerhardt's zone; this was not constant; (4) absence of cyanosis and hypertrophies unless complications existed; (5) *x*-ray plates, but these were not so good for diagnostic purposes in these cases; (6) orthodiagraph. In differential diagnosis it was noted that in open septum there was no cyanosis; there was a loud rumbling systolic murmur and thrill in the upper precordium over the sternum, not transmitted into the vessels; there was no accentuated second pulmonic sound and no hypertrophy. In aortic stenosis there was no accentuated second sound and the murmur was heard to the right. In mitral disease the mitral murmur was heard loudest over the mitral valves, and not at the apex. Where there were complications, as so frequently occurred, the diagnosis might be very difficult, as a study of some of the reported cases readily showed, for the associated lesions might cause great confusion. Hence the great value of orthodiagraphy when the diagnosis was made by sight and by the interpretation of the accompanying murmurs. The number of cases in which the diagnosis had been confirmed by autopsy was sufficiently large to warrant their trusting the interpretation of the orthodiagraphic picture. Fortunately they were able to obtain an autopsy in the one case that died.

**On the Relation of $O_2$ to Bone Marrow Function.**—Dr. Nathan E. Brill read this paper. He stated that the erythrocytes or red blood discs of mammals ought not to be regarded morphologically as cells since they lacked a nucleus, centosome, and internal signs of cell architecture. Though their stroma contained chemically the nucleoproteids and lipoids, event in about the same relative proportion that was characteristic of protoplasm, they represented a protoplasm which had lost the functions of cellular protoplasm, such as motility, etc., and had become changed into lipoid shells whose chief function was to contain hemoglobin in solution. On the other hand erythroblasts, whether megalo- or normoblasts as they occurred in the bone marrow showed the properties of cells; they contained a nucleus, underwent mitotic division, etc., and were converted finally into erythrocytes, losing their original characteristics and probably some of their early functions. It appeared, therefore, that the red blood discs of mammals were chiefly hemoglobin containers and as such were the most important factor in binding and carrying the most essential of all chemical elements of the body, $O_2$. Without oxygen the activities of every known tissue cell, including the erythrocytes themselves, would fail. The essential feature of the oxygen carried to the tissues for purposes of assimilation and by which they derived the energy for their activities was that it should be carried in its molecular form. The mechanism which supplied the oxygen carriers and maintained an equilibrium between their loss and their supply was supposed to reside in the bone marrow. The author had been teaching for the past six years that the bone marrow was so attuned to the amount of oxygen that was carried to it by the erythrocytes that it immediately responded by throwing out new cells when sufficient oxygen was not supplied. In other words oxygen acted as the hormone which called for the erythroblastic activity of the bone marrow. An analogous process was supplied by some other organs, notably the liver. Just as the needs of the muscles for carbohydrate (sugar) to supply the pabulum for their energy must be announced to the liver, so the needs of all the tissues for oxygen must be announced to the bone marrow through the oxygen carriers, the red blood cells themselves. The red blood cells were the active agents which demanded from the marrow an increase in their number whenever they were insufficient to distribute the necessary amount of oxygen to the other members of the cell communities. The bone marrow re-

sponded to this call when the carriers themselves were deficient in hemoglobin which was considered to be the substance which bound the oxygen or, to be more accurate, the iron containing radicle, hemochromogen, combined with protein compounds forming hemoglobin was responsible for the power of the hemoglobin radicle to form compounds with molecular oxygen. This compound was very unstable. Hence, if for any reason the oxygen carriers were diminished, as by loss of blood, or by molecular, chemical, or other changes in the hemoglobin which would interfere with its power to bind oxygen, the bone marrow would respond by immediately increased activity. The activity followed physical laws and naturally depended on the intensity of the stimulus. If the demand for oxygen was immediate and urgent, the bone marrow threw out embryonic forms in the shape of megaloblasts and normoblasts; if the need was not so urgent, the marrow completed its development of the red cell and supplied the blood with fully formed erythrocytes. The former retained the characteristics of true cells; the latter, in the process of development lost them. The former, cell for cell, contained a much greater amount of hemoglobin and hence, inferentially, were of greater oxygen carrying capacity. It seemed that such erythroblastic activities could be called forth by other local pathological conditions such as direct irritation of the bone marrow, as, for instance, by tumors of the bones, even by certain general causes such as toxines, hemolytic agents in the blood, infectious disease agents, bacteria, and by certain general causes like those in leukemia. Experimentally it had been shown by F. Müller that if the artery to a marrow-containing bone was ligated, the blood returned by the vein from such a bone contained an increase in the number of red cells among which were found a large proportion of nucleated forms. In other words an immediate response was made by the bone marrow to the urgent call for oxygen. It was possible that other unsatisfied nutritional demands of the bone marrow might have been added stimuli to call forth the erythroblastic activity in this experiment. This entire theory was borne out clinically: 1. Where oxygen was diminished by reason of diminished pressure due to high altitude. 2. Where oxygen was displaced by a gas having greater combining power with hemoglobin, as for instance, carbon monoxide poisoning. 3. Where carbon dioxide existed in excess as in pulmonary and cardiac conditions, both congenital and acquired, or by the use of the Kuhn mask. 4. Where large quantities of blood were lost, as in hemorrhages acute and chronic. 5. Hemolytic blood conditions, as Banti's disease, pernicious anemia, chronic splenomegalic acholuric jaundice. 6. In infectious diseases, typhus particularly. 7. In leukemias. 8. Where hemoglobin was molecularly changed as in chlorosis.

In all of these disturbances and disease conditions clinical investigation had shown erythroblastic activity, either by a polycythemia or by the presence of nucleated red blood cells or by both.

The author stated that he was engaged, as he had been for some months, in investigating with Dr. S. Bookman of the chemical laboratory of the Pathological Department of Mount Sinai Hospital the total oxygen capacity of normal blood and of blood obtained from patients with mostly all of the disease conditions just enumerated. Experimental work, however, had shown to them a large percentage error in oxygen determination due to what would appear to be defects in the Barcroft-Haldane instrument, in the difficulty in maintaining an absolute temperature equality in the experiment, and in barometric pressures though the differential instrument was used. Therefore the entire communication should be considered as merely a preliminary one.

Dr. Arthur Bookman said that they had been endeavoring to determine the amount of available oxygen in the blood, as well as the carbon dioxide $CO_2$ therein contained, by means of the differential apparatus of Dr. Barcroft. Unfortunately their results with pathological blood from several cases of anemia varied between rather wide limits showing differences of 30 to 40 per cent., the same blood showing wide variations. The determination of the oxygen liberated from chemically pure solution of hydrogen peroxide showed differences of plus 20 per cent. In four different determinations, however, the average of 5.4, compared with the theoretical quantity of 5.52, showed a rather close agreement, but the limits of 4.6 and 6.3 showing, as above stated, a variable error of plus 20 per cent. made it impossible to apply this apparatus for these determinations. Further investigations, however, might be reported at a later date should they be successful in eliminating these divergent results. The cause for these wide discrepancies lay no doubt in the fact that gases expanded 1/273 of their volume for the rise of each degree centigrade, and as the apparatus had a volume of about 25 c.c. on each side of the manometer, and the manometer tube registered in c.c. differences of only fractions of a degree in temperature, would easily produce these wide divergencies. It might be possible that by using certain controls that this error might be eliminated which he hoped to be able to perform at some future date.

**Acquired Splenomegalic Hemolytic Icterus.**—Dr. Nathan E. Brill reported this case. He said the object of reporting it was to get a case of this very rare disease group on record because he knew of no other reported case outside of those of Dr. L. E. Conner of the New York Hospital. The case reported was distinctly one of the acquired form of this disease. No other member of her family had ever had jaundice. Up to the age of thirteen this girl, now twenty years old, was perfectly well. At thirteen she had an attack of scarlet fever which left her very anemic. A few months thereafter her physician noted that her spleen had enlarged. The anemia persisted and two and a half years ago it was noticed that her skin and sclera became yellow. This icteric hue varied in intensity from a light to a deeper yellow. At times it disappeared. In the past two and a half years she had noted five distinct attacks of deep discoloration of her eyes and skin. Following the beginning of her icteric discoloration she developed on each leg a small round ulcer which at intervals impaired the function of her ankle joints. It was owing to the discoloration of her skin and the unhealed ulcers on her legs that she sought admission to Dr. Brill's service at Mount Sinai Hospital, Oct. 28, 1912.

On admission examination disclosed the following: Female, small stature, brunette, pale, yellowish tinge to conjunctivæ, with skin of a pale yellow hue (tint something like the yellow of pernicious anemia). The body was well nourished. The pupils were equal, regular, central, and reached to light and accommodation. There were no palsies, no patechiæ, and no ecchymoses. The examination of the nose, throat, ears, and mastoids was negative. There was no thyroid enlargement. The lips and buccal mucosa were pale, the teeth good, the tongue moist, the tonsils not enlarged. The submaxillary lymph nodes were palpable, otherwise there were no lymph-node enlargements. The chest was well formed, expansion was good, and there was slight tenderness over sternum. The lungs were negative. The right border of the heart was at midsternum, the upper border at third rib; left border in mid-clavicular line; the apex in fifth space, three and one-half inches from midsternal line. The sounds were clear. There was a systolic murmur over the pulmonary valve. The pulse was regular, with good force and volume. The examination of the abdomen showed the fat preserved, lax, tympanitic, and no tenderness. The liver was enlarged, with upper border at fourth interspace and lower border palpable 3 c.m. below the margin of the ribs in the mid-clavicular line. The surface was smooth, with firm, rounded edge. The spleen was enlarged; the upper border reaching to seventh interspace, and the lower border palpable 3 c.m. below the left costal margin. The surface was smooth and the edge was firm and rounded. There was no tenderness over the liver or the spleen. The extremities showed no tibial tenderness. In the right leg there was some periarticular thickening around the ankle joint with some limitation of motion; there was slight inward rotation of the foot; it was also slightly extended. There was an oval ulcer 2c.m. in diameter posterior to the inner malleolus covered by a scab, very tender and surrounded by an area of indurated, inflamed tissue. The foot of the left leg was extended and everted with similar periarticular thickening; it was also the seat of an ulcer of same size, in front and above external malleolus, covered by unhealthy granulations and surrounded by thickened area of discolored and inflamed skin; the ulcer was adherent to the bone.

*Urine*—Sp. Gr. 1022, acid, no albumin, no casts, no sugar, *no bile*.

*Blood*—Red blood cells, 4,100,000; hgb., 74; color index, 0.9+; normoblasts, 3 to 100 white blood cells; megaloblasts, occasional; polychromasia, definite and general; anisocytosis, well marked; some granular degeneration; white blood cells; total, 15,000.

The percentage count was as follows: Polynuclear, 73½ per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 5 per cent.; basophiles, 1 per cent.; eosinophiles, ½ per cent; white cell count, 200. At no time during the three months of the patient's stay in the hospital did the urine contain bile pigments. The blood serum, while showing a yellowish tint, gave no reaction for bile. Numerous tests for bile in the blood and urine at frequent intervals were made with negative results. The feces always contained bile.

The blood examinations were as follows:

Nov. 1, 1912—R. B. C., 3,800,000; Hgb., 70; color index, 0.9 +.

Nov. 12, 1912—R. B. C., 4,400,000; Hgb., 74; color index, 0.85.

*Smears*—Stain with *vital staining* method showed perfect peripheral granules in about one out of every twelve red blood cells.

*Corpuscular fragility:*

| Saline per cent., 5 drops blood to 5 c.c | Taking |
|---|---|
| 0.3 | Complete. |
| 0.325 | Complete. |
| 0.35 | Complete. |
| 0.375 | Complete. |
| 0.4 | Complete. |
| 0.425 | Complete. |
| 0.45 | Not entirely complete. |
| 0.7 | Begins. |
| 0.75 | Doubtful. |
| 0.8 | Absent. |
| 0.9 | Absent. |

The blood thus showed a definitely increased fragility.

Nov. 21, 1912—R. B. C., 4,100,000; W. B. C., 10,750; anisocytosis; index, 0.6 +; Poly., 69 per cent.; poikilocytosis; S. Lmph, 27 per cent.; polychromasia; L. Lymph., 1 per cent.

Nov. 29, 1912—R. B. C., 3,200,000; Hgb., 80; color index, 1.+. (Few normoblasts). W. B. C., 8,800: Poly, 73 per cent.; lymphocytes, 27 per cent.

Dec. 5—R. B. C., 2,970,000; color index, 0.9; W. B. C., 6,100; poly., 67 per cent.; lymphocytes, 30 per cent.; basophiles, 3 per cent.

Dec. 12, 1912—R. B. C., 3,800,000. (Few normoblasts.) No megaloblasts; definite poikilocytosis, anisocytosis, microcytes, and macrocytes, granular degeneration and polychromasia.

In about one month the leg ulcers healed under the application of scarlet red.

Dec. 13, 1912.—The patient still showed moderate pallor with slight icteric tinge; there was a slight icteric hue of the sclera.

The physical signs were as before. There was no diminution or increase in size of liver or in the size of the spleen.

Dec. 17, 1912—R. B. C., 4,300,000; Hgb., 83 per cent. Normoblasts and macrocytes numerous; W. B. C., 6,800; Poly., 67 per cent.; S. Lymph., 30 per cent.; Basophiles, 2 per cent.; Eosinophiles, 1 per cent.

Dec. 25, 1912—Blood still showed normoblasts, macrocytes with marked vital staining cells, increased corpuscular fragility; hemolysis starting at .75 and ending at .45; granular degeneration, polychromasia, poikilocytosis and anisocytosis definitely marked.

The following examinations were completed in the laboratory of the pathological department.

Dec. 1, 1912—Duodenal contents contained abundant bile secretion, thick and viscid. The pancreatic ferments gave the following reaction: Amylasa, strong; lipasa, moderately strong; trypsin, strong. (Dr. Crohn).

Three blood examinations (Wassermann) were all negative. (Dr. Kaliski).

Urine—Total N = 2.831 grms; ammonia N = 0.271 grms., 9 per cent.; nucleo-protein, small amount. (Dr. S. Bookman).

Blood—Negative for bile. (Dr. B. Crohn).

Dec. 7, 1912—Iron in 24 hour urine; total, 1.2 m. grms.; urobilin strongly present.

Gastric contents showed ferments strongly present, both pepsin and renin.

The increased amount of excreted iron, the urobilin in the urine, the hepato and splenomegaly showed this to be an example of a hemolytic disease. It is very possible that the icterus, if such it might be called, was due to some other products of catabolized hemoglobin such as urobilin. It was certainly not due in this case to bile pigment as such, for no bile pigments existed in the blood or urine, and bile was being continually excreted in the feces. The distinctive signs of erythroblastic activity, such as nucleated forms, vital staining red cells, and the diminished osmotic resistance (fragility) of the red blood cells relegated this case to the group under discussion.

### Philadelphia Neurological Society

At a stated meeting held March 28 Dr. Alfred Gordon presented "A Case of Neurofibromatosis." The patient was a man, 27 or 28 years old, who had noticed tumors of varying size appearing successively in many parts of the body. They were situated in the course of nerve-trunks; some of them were painful at times and many of them the seat of tenderness. There were no other sensory phenomena, while the motor functions were undisturbed and the reflexes preserved. Varied treatment, including radium emanations, had been employed, but without appreciable effect. The case was extraordinary by reason of the large number and wide distribution of the growths.

Dr. Edward A. Shumway read by invitation a communication entitled "Bilateral External Rectus Paralysis Due to Traumatism." The condition was observed in a wagon-driver who was thrown to the ground from his seat, injuring the left side of his head. There was a bloody discharge from one ear, with impairment of hearing on that side, and double vision, with loss of power in the external rectus muscle of each eye. The condition was attributed to a fracture at the base of the skull. Improvement took place under treatment.

Dr. H. Maxwell Langdon read a paper entitled "Bilateral Partial Paralysis of the Third and Sixth Nerves with Optic Atrophy." The patient was a man about 48 years of age, who in addition to loss of vision and impairment of motility on the part of the muscles controlled by the third and sixth nerves on each side, presented loss of knee-jerk on one side with diminution on the other side, polyuria and diminished pupillary reaction to light. The blood yielded a positive Wassermann reaction.

Dr. John H. W. Rhein reported "A Case of Bilateral Facial Paralysis of Peripheral Origin." The patient was a girl about 18 years old who worked at an open window and developed paralysis of the external rectus muscle of one eye, followed after an interval of some weeks by paralysis of the muscles on one side of the face and a few days later by paralysis of the muscles on the opposite side of the face, together with some impairment of the sense of taste on the anterior portion of the tongue. The facial muscles exhibited reactions of degeneration. The blood yielded a negative Wassermann response. Marked improvement ensued upon treatment.

Dr. William G. Spiller presented "A Case of Dystonia Musculorum Deformans." The patient was a man who exhibited a peculiar gait comparable to that of a monkey, and, while quiet at rest, developed incoordinate movements on attempted action. There was some deformity of the pelvis and a certain degree of spasticity. The knee-jerks could not be elicited. Dr. Spiller presented also "Three Cases with Tremor Resembling that of Multiple Sclerosis." All of the patients, of different age, were alcoholics, and each presented coarse, incoordinate movements on attempts at motion, but there was no nystagmus and no alteration in reflexes. Dr. Spiller pointed out the rarity of disseminated sclerosis in the United States as compared with its relatively greater frequency on the continent of Europe. In fact, cases that during life have presented symptoms of disseminated sclerosis have on autopsy proved to be entirely free from the lesions of that disorder.

Dr. James Hendrie Lloyd presented "A Case with Marked Ataxia of the Arms." The patient was a blacksmith, without history or other evidence of syphilis, who presented ataxic movements of the upper extremities, with astereognosis and hypesthesia of the fingers, with exaggerated knee-jerks and slight nystagmus, but without disturbance of speech or derangement of micturition.

Dr. S. D. W. Ludlum reported "A Case of Injury of the Internal Popliteal Nerve Associated with Double Crutch-palsy."

## State Medical Licensing Boards.

### STATE BOARD EXAMINATION QUESTIONS.

Medical Examiners of New Jersey.

*October*, 1912.

ANATOMY.

1. Describe the articulations of the vertebral column.
2. Parotid gland: Give blood and nerve supply; what vessels pass through it?
3. Describe the facial artery; give its relations, name its branches.
4. Describe the third cranial nerve, what would be the result of cutting that nerve?
5. Locate and describe: (*a*) Villi, (*b*) Crypts of Lieberkühn, (*c*) Brunner's glands, (*d*) Peyer's glands.
6. How could you define the course of the femoral artery?
7. Name and describe the two largest ganglia in the body.
8. Describe the nasal fossæ; give blood and nerve supply.
9. Describe the superficial inguinal glands. What lymphatic vessels do they receive?

10. In fracture of the middle of the clavicle, what muscles cause displacement of the fragments?

PHYSIOLOGY.

1. Are the auriculoventricular valves ever open at the same time? Explain.
2. Why is blood pressure in the aorta higher than in the small arteries?
3. Can there be a venous pulse? Explain.
4. Name five factors that influence the lymph circulation.
5. What are the sources of the white and red blood cells, and what are their sepcial functions?
6. Name the properties of a living cell.
7. What is the essential cause of "old sight?"
8. Can the pupil of a blind eye react to light?
9. Compare the path of motor nerve impulse to a voluntary muscle, with that to involuntary muscle.
10. What is the result of injury to the semicircular canals?
11. Name, in order of importance, the heat-producing organs.
12. Name, in order of importance, the organs which dissipate body heat.
13. What nerve centers regulate body temperature?
14. Give composition of protein, starch, carbohydrates, sugar, and fat.
15. What digestive disturbance follows removal of the pancreas?

CHEMISTRY.

1. Of how many elements is matter composed?
2. Give the definition of an element; a compound; a mixture.
3. What chemical tests are most important in the analysis of urine?
4. Give composition of corrosive sublimate, and antidote for poisoning by it.
5. Name the three most important alkaloids derived from opium; give the dose of each.
6. Name some of the compounds of iron.
7. How is arsenic obtained in its metallic state? What are its physical and chemical properties?
8. How would you distinguish carbolic acid from creosote?
9. What is the chemical difference between carbo animalis, U. S. P., and carbo ligni, U. S. P.?
10. Give the best antidote for arsenic poisoning, and how may it be quickly prepared?

MATERIA MEDICA AND THERAPEUTICS.

1. Name active principles, preparations, and doses of nux vomica, antidote for poisoning.
2. Give the official iodine preparations, medicinal properties, dose, and methods of employment.
3. Name specific treatment for diphtheria and state briefly how remedy is obtained, dose and how it is administered.
4. Name the official bromides. Doses of each.
5. Name three drugs that render the urine alkaline; indications, doses and methods of administration.
6. Give the physiological action of ergot and mention its therapeutic uses, preparations, and dosage.
7. What are the most important silver preparations? Indicate therapeutic uses, dose, antidote.
8. In what way does strophanthus differ in physiological action from digitalis? What is dose of each?
9. Name preparations of ammonia, principal indications for its use. Dose.
10. When and under what conditions would you use veratrum viride? Name preparation and dose.

HISTOLOGY.

1. Draw a cross section of the spinal cord and describe your findings.
2. Describe the cerebral cortex.
3. Describe the pineal gland.

## ANSWERS.

ANATOMY.

1. *The articulations of the vertebral column* consist of joints between the bodies of the vertebræ and joints between the neural arches by means of the articular processes. The former are amphiarthroses, the latter diarthroses. The *bodies* are united by the anterior common ligament, the posterior common ligament, and the intervertebral substance. The laminæ are connected by the ligamenta subflava. The articular processes are surrounded by the capsular ligaments. The ligaments of the spinous processes are: The interspinous ligaments, the supraspinous ligament, and the ligamentum nuchæ. The intertransverse ligaments extend between the transverse processes.

2. The *blood supply of the parotid gland* is derived from the branches of the external carotid which pass in or near it: The posterior auricular, internal maxillary, superficial temporal, and transverse facial. The *nerve supply of the parotid gland* is from the sympathetic plexus on the external carotid artery, and the facial, auriculotemporal and great auricular nerves. *Vessels which pass through the parotid glond* are: External carotid, posterior auricular, internal maxillary, superficial temporal, and transverse facial arteries; internal maxillary, temporal, and temporomaxillary veins.

3. *The facial artery* is a branch of the external carotid; it arises near the angle of the lower jaw, passes forward and upward beneath the digastric and stylohyoid muscles. From the base of the jaw it turns up over the face, running anterior to the masseter muscle; it then passes across the cheek to the angle of the mouth, then along the side of the nose to terminate in the angular artery, at the inner canthus of the eye. *Relations:* In the neck it is covered by the skin, platysma, and fascia; next, it is crossed by the posterior belly of the digastric and the stylohyoid; it then passes through the submaxillary gland. In its course on the face it rests on the lower jaw, the buccinator, the levator anguli oris, and the levator labii superioris; it is covered by the skin, platysma, and zygomatic muscles, and is crossed by branches of the facial nerve. *Branches:* Ascending palatine, tonsillar, submaxillary, submental, inferior labial, inferior coronary, superior coronary, lateral nasal, angular, and muscular.

4. The *third cranial nerve* (motor oculi) arises from the inner side of the crus cerebri, in front of the pons, and from the floor of the aqueduct of Sylvius. It enters the cavernous sinus and then passes forward to enter the orbit through the sphenoidal fissure. While in the sphenoidal fissure it divides into two branches. It is the motor nerve for the muscles of the eyeball, and is distributed to all of these muscles except two. It supplies the superior rectus, levator palpebræ superioris, internal rectus, inferior rectus, and inferior oblique muscles. *If the nerve is cut:* The pupil will be dilated and there will be no response to either light or accommodation; ptosis will follow; diplopia will result; external squint will be noticed, and the eyeball will protrude and remain immovable.

5. *Villi* are found throughout the small intestine. They are minute processes projecting from the mucous membrane of the small intestine and are situated on the valvulæ conniventes and also between them. They consist of a lacteal, blood vessels, epithelium, basement membrane, and lymphoid tissues. *Crypts of Lieberkuhn* are minute tubular depressions in the mucous membrane of the small intestine; they run perpendicularly to the surface and open at the base of the villi. They are found throughout the small intestine. *Brunner's glands* are found in the duodenum. They are in the submucous coat and pierce the mucous coat and occur most abundantly near the pylorus. *Peyer's glands* occur chiefly in the ileum; a few are found in the jejunum, and occasionally they may be found in the duodenum. They are patches of solitary follicles, varying in length from a half to four inches.

6. If the thigh is flexed and rotated outward, a line drawn from a point midway between the anterior superior spine of the ilium and the symphysis pubis, to the inner side of the internal condyle of the femur, will indicate the course of the femoral artery.

7. *The two largest ganglia in the body* are the two semilunar ganglia which are situated one on each side of the solar plexus. They are formed by the aggregation of smaller ganglia. They are situated in front of the crura of the diaphragm, near to the suprarenal glands, and take part in the formation of the solar plexus.

8. The *nasal fossæ* are two irregular cavities situated in the middle of the face. They open in front by the anterior nares, and behind into the nasopharynx by the posterior nares. They are separated by the septum, which is generally deviated to one side. The mucous membrane lining the nasal fossæ is called the Schneiderian membrane. Each fossa has a roof, a floor, an inner and an outer wall. From the outer wall there project into each fossa the superior and middle turbinated processes of the ethmoid bone, and the inferior turbinated bone; these bony processes divide each fossa into a superior, middle, and inferior meatus. The nasal fossæ communicate with the sphenoidal sinus, the anterior and posterior ethmoidal cells, the frontal sinus, and the antrum of Highmore.

*Blood supply:* anterior and posterior ethmoidal and sphenopalatine arteries. *Nerves:* Nasal branch of ophthalmic, anterior dental, Vidian, nasopalatine, and anterior palatine. The olfactory is the nerve of special sense of smell.

9. The *superficial inguinal glands* are from ten to twenty in number and are situated just below Poupart's ligament, immediately under the superficial fascia in Scarpa's triangle. They receive the lymphatics from the skin of the penis, scrotum, perineum, buttocks, and lower abdominal wall.

10. In *fracture of the middle of the clavicle:* The *outer fragment* is drawn *downward* by the weight of the limb, the pectorals, and latissimus dorsi; *inward* by the levator anguli scapulæ, trapezius, rhomboids, pectorals, and latissimus dorsi; and is rotated *forward* by the pectorals and serratus magnus.

PHYSIOLOGY.

1. Certainly, the auriculoventricular valves are open at the same time; this occurs during auricular systole and during the latter part of auricular diastole.

2. The blood pressure in the aorta is higher than that in the smaller arteries, because: (1) The resistance in the aorta is higher; and (2) the sectional area of the aorta is smaller than the sectional area of the smaller arteries combined.

3. *Venous pulse.* "Under usual conditions the pulse wave is lost before entering the capillary regions, but as a result of dilatation in the arteries of an organ the pulse may carry through and appear in the veins, in which it may be shown, for instance, by the rhythmical flow of blood from an opened vein. The term *venous pulse,* however, as generally used applies to an entirely different phenomenon—namely, to a pulse seen especially in the external jugular vein. When this vein is prominent or is made prominent by some compression a pulse may be seen and recorded which is synchronous with the heart beat. It is not a wave that has come through the capillary circulation in the head, since if the vein be completely blocked by the finger the wave disappears on the upper side. It is due to the heart beat, and is usually attributed to the auricular contraction. At each contraction of the auricle the venous flow is partially blocked; at each relaxation the flow is suddenly augmented. Under pathological conditions a marked venous pulse of a different origin may be seen in the jugular or may be felt over the liver (liver pulse). This wave is usually described in connection with an insufficiency of the auriculoventricular valves. Under such a condition it is evident that the contraction of the ventricles will be accompanied by a regurgitation toward the auricles and the production of a positive wave in the venæ cavæ and their branches."—(Howell's *Physiology.*)

4. *Five factors that influence the lymph circulation:* (1) The pressure of the blood in the bloodvessels; (2) thoracic aspiration; (3) contractions of the voluntary muscles; (4) contractions of the intestine; (5) the action of the valves in the lacteals and lymphatics.

5. *Source of white blood cells:* Lymph tissues, spleen and bone marrow. *Source of red blood cells:* Red bone marrow. *Function of red blood cells:* To supply the tissues with oxygen. *Function of the white blood cells:* To serve as a protection to the body from the incursions of pathogenic microorganisms; they take some part in the process of the coagulation of the blood; they aid in the absorption of fats and peptones; and they help to maintain the proper proteid content of the blood plasma.

6. *A living cell* has the properties of: Irritability, movement, ingestion, assimilation, excretion, growth, and reproduction.

7. The essential cause of old sight is diminished elasticity of the lens; diminution of the convexity of the cornea may also be a cause.

8. The pupil of a blind eye can react to light; for although the direct reflex is abolished, yet the consensual reflex remains.

9. To a *skeletal muscle* the motor nerve impulses start in the cortex cerebri, and pass through the corona radiata, internal capsule, crus, pons, medulla, crossed and direct pyramidal columns to the motor cells of the anterior horn of the spinal column, thence through the nerve root and motor nerve to the muscle. To *involuntary muscle:* The efferent fibers of the sympathetic nervous system arise in the intermediolateral column of gray cells. They pass out by the anterior root from the spinal cord. From here they go by a white ramus to a sympathetic ganglion. From the sympathetic ganglion they may pass in two directions: (1) they may form synapses about these cells and from these cells new axons may arise and pass outward in the visceral nerves or back through the gray ramus connected to the ganglion, into the spinal or somatic nerve to the bloodvessels as vasomotor nerves, or to sweatglands as secretory nerves, or to hairs as pilomotor nerves; (2) or they may pass through the ganglion on to one situated more toward the periphery, in which they form synapses and are continued onward by new axons.

10. *Injury to the semicircular canals* may cause: Nausea, vertigo, loss of sense of equilibrium, loss or impairment of muscular sense, unsteadiness in gait.

11. The *heat-producing organs* are: The muscles, secreting glands (chiefly the liver), digestive tract during digestion, and the brain.

12. *Heat is lost to the body,* by: The skin, through evaporation, radiation, and conduction; the lungs; and the excretions (urine and feces).

13. *The nerve centers which regulate body temperature* are: The thermotactic, thermogenetic, and thermolytic centers. The location of these centers is not known.

14. *Protein* is composed of carbon, hydrogen, oxygen, nitrogen, and sometimes sulphur, iron, phosphorus or some other element. The composition of *starch* is shown by its formula $(C_6H_{10}O_5)n$. *Corbohydrates* contain carbon, hydrogen, and oxygen, the two latter in the proportions to form water. *Sugar* (like starch) is a carbohydrate, and contains the same elements. *Fats* contain carbon, hydrogen and oxygen, but not in the same proportions as in carbohydrates.

15. There would be a decided diminution in the activity of the digestion of all kinds of foods—particularly of proteids and fats; there would be noticeable carbohydrate indigestion, and starch would be abundant in the stools.

CHEMISTRY.

1. There are about eighty elements.

2. An *element* is a kind of substance which we cannot, by any known means, split up into any two or more other kinds of substance.

A *compound* is a substance made up of two or more elements, chemically united, in definite proportions.

A *mixture* is the product obtained by uniting into a more or less homogeneous whole two or more substances, whether elements or compounds.

3. See below, PRACTICE OF MEDICINE. *Question* 10.

4. Corrosive sublimate has the formula $HgCl_2$, thus showing that each molecule contains one atom of mercury and two atoms of chlorine. The *antidote* is white of egg in moderate quantity, followed by an emetic.

5. Morphine, dose gr. 1/5; codeine, dose gr. ½; thebaine.

6. Ferric oxide, ferric hydroxide, ferrous sulphide, ferric chloride, ferrous sulphate; also the carbonate, citrate, hypophosphite and salicylate of iron.

7. Arsenic is obtained by heating a mixture of arsenic trioxide and charcoal, and then purifying the product by resublimation.

Arsenic is a gray solid, odorless and tasteless, a good conductor of electricity, it may be crystalline or amorphous, its vapor has the odor of garlic. It is insoluble in water; when heated in air it is converted into arsenic trioxide; in the presence of moisture it becomes tarnished.

8. Carbolic acid is soluble in glycerin; creosote is insoluble (or nearly so) in glycerin. With alcohol and ferric chloride, carbolic acid gives a dark brown or yellow color; creosote gives a green color.

9. *Carbo animalis* is charcoal prepared from bone; *carbo ligni* is charcoal prepared from soft wood.

10. The best antidote for arsenic is a freshly prepared solution of ferric hydroxide. The two following solutions should be kept in separate bottles, and when needed mixed and administered.

(1) ℞. Liquoris ferri tersulphatis ℥ij.
Aquæ destillatæ ℥vj.

(2) ℞. Magnesiæ ℥iij.
Aquæ destillatæ ℥iij.

MATERIA MEDICA AND THERAPEUTICS.

1. The *active principles* of nux vomica are strychnine, brucine, and igasuric acid.

*Preparations and doses:* Extractum nucis vomicæ, gr. ¼; fluidextractum nucis vomicæ, ♏jj; tinctura nucis vomicæ, ♏x; strychnine, gr. 1/64; strychninæ sulphas, gr. 1/64; strychninæ nitras, gr. 1/64.

*Treatment of strychnine poisoning:* The convulsions are to be arrested or mitigated by bringing the patient under the influence of chloral or chloroform as rapidly as possible; the stomach is to be washed out, and the patient is to be kept as quiet as possible.

2. The official preparations and doses of iodine and the iodides are: Iodine, one-tenth of a grain; compound solution of iodine, three minims; tincture of iodine, one and a

half minims; potassium iodide, seven and a half grains; sodium iodide, seven and a half grains; ammonium iodide, four grains; strontium iodide, seven and a half grains; zinc iodide, one grain; diluted hydriodic acid, fifteen minims; syrup of hydriodic acid, one dram.

Iodine is used externally (as tincture) as a disinfectant, also as an irritant, counterirritant and parasiticide. Internally it has been used as an antiemetic. The iodides have been used in syphilis (third stage), pleurisy, pericarditis, rheumatoid arthritis, aneurism, asthma, and in hydrargyrism and plumbism. Iodine is used both externally and internally in some cases of goiter.

3. The specific treatment for diphtheria is the diphtheria antitoxin. It is *obtained* as follows: "Diphtheria bacilli are grown in a flask containing some nutrient broth (*e. g.* meat broth), to which 0.5 per cent. of sodium chloride and 2 per cent. of commercial peptone have been added. At the end of some weeks the bacilli are filtered off, and the fluid left contains a large amount of diphtheria toxin, and it should be of such strength that .01 c.c. (1½m.) of it will kill a good-sized guinea-pig. From .02 to 1.00 c.c. (3 to 15 m.) of it is aseptically injected into the jugular vein of a horse; this produces slight symptoms. As soon as they are past a larger dose is injected, and the dose is gradually increased until 100 c.c. (25 fl. dr.) or more are given at each injection. This leads to the formation of a large amount of antitoxin in the blood serum. At the end of some months the horse is bled to 8 liters (quarts) in a sterilized vessel, the blood coagulates, and the antitoxic serum is put into sterilized bottles and hermetically sealed, a little phenol or other antiseptic being added to prevent decomposition." (Wilcox's *Materia Medica*, etc.) The dosage is 3,000 units; the immunizing dose is 500 units. The antitoxin is injected with a syringe on the side of the abdomen or between the shoulders, under strict aseptic precautions.

4. The *official bromides* are: Ammonium bromide, dose gr. v; calcium bromide, dose gr. xv; lithium bromide, dose gr. xv; potassium bromide, dose gr. xv; sodium bromide, dose gr. xv; strontium bromide, dose gr. xv; zinc bromide, dose gr. ij.

5. Potassium acetate and citrate, and lithium citrate are administered to render the urine alkaline. They are given in a large amount of water. The dose of the potassium salts is gr. xxx; of the lithium salt gr. xv. The indications are: Too acid urine; lithemic conditions; rheumatic conditions; and generally when the urine requires to be diluted.

6. Ergot. The *official preparations* with doses are: Ergot, thirty grains; extract of ergot, seven and a half grains; fluidextract of ergot, thirty minims; wine of ergot, two drams.

*Physiological action:* Ergot stimulates and causes contraction of involuntary muscle fibers, hence it is a vasoconstrictor, hemostatic, and oxytocic. It is also a cardiac sedative, it raises the blood pressure, it increases peristalsis, and is an emmenagogue.

*Indications for the therapeutic application:* To promote uterine contractions during third stage of labor; fibroids, menorrhagia, post-partum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headaches, laxity of sphincters, of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

7. *Silver salts, with doses:* Silver nitrate, gr. 1/5; silver oxide, gr. j; silver cyanide, gr. 1/30; unofficial salts, are: Silver iodide, gr. ½; argyrol, gr. vii.

*Therapeutic uses of silver preparations:* As a caustic for septic processes, boils, and phlebitis; for gonorrhea; for bedsores; in gonorrheal ophthalmia; also as a prophylactic; in dysentery or diarrhea; for ulcers of mouth, stomach, or intestines.

Nitrate of silver is used *externally* for: Conjunctivitis; granular lids, pruritus of genitals or anus; inflammations of the mouth, pharynx, fauces; orchitis, and epididymitis; and to prevent the pitting of smallpox; it is also said to abort bedsores and boils. *Internally*, it is used: In chronic gastric catarrh, gastritis, and gastric ulcer; intestinal ulceration, epilepsy, and chorea. The *ontidote* is sodium chloride.

8. *As compared with digitalis, strophanthus* acts quicker, is less enduring in its effects, is less certain, is not cumulative, has less marked vasoconstrictor effects, has greater diuretic power, and is said to be safer for aged patients.

The dose of tincture of strophanthus is ♏viij; of tincture of digitalis, ♏xv.

9. Ammonium preparations.—Externally: Rubefacient, vesicant, for bites of insects. *Internally:* As a gastric, cardiac, or general stimulant; as an expectorant; in hepatic disorders; muscular rheumatism; as a diaphoretic and diuretic.

*Preparations and doses:* Spirit of ammonia, ♏xv; ammonia water, ♏xv; carbonate of ammonia, gr. iv; aromatic spirit of ammonia, ♏xxx; ammonium chloride, gr. vij; solution of ammonium acetate, ʒiv; ammonium benzoate, gr. xv; ammonium iodide, gr. iv; ammonium salicylate, gr. iv; ammonium valerate, gr. vij.

10. Veratrum viride. *Preparations:* Fluidextract of veratrum, dose 1½ minims; tincture of veratrum, dose 15 minims.

*Physiological actions:* "On the skin it causes tingling, numbness, and anesthesia, and, applied to the mucous membrane of the nose and throat, violent sneezing and coughing. Internally it produces gastrointestinal irritation, prolonged relaxation of striped and cardiac muscle, reduction of arterial pressure, depression of respiration, convulsions from stimulation of the spinal cord, free diaphoresis, and reduction of temperature."

*Therapeutical action:* "As a circulatory depressant, given early, in croupous pneumonia, pleurisy, hepatitis, maniacal delirium, etc., with strong, bounding pulse and other sthenic conditions; in puerperal convulsions and the early stage of peritonitis, phlebitis and other inflammatory affections of the puerperal state; also acute rheumatism, tonsillitis, aneurysm, and wounds of the head, pericardium and peritoneum."—(Wilcox, *Materia Medica.*)

HISTOLOGY.

1. "*The spinal cord in transverse section* consists of white matter externally, and gray matter internally. The gray matter consists of a crescent-shaped portion in each lateral half of the cord, united by an intervening process, the posterior or gray commissure. Each crescent has two cornua, an anterior, thick and short, not reaching the surface of the cord; and a posterior, long and slender, reaching to the posterolateral fissure, just before reaching which it becomes enlarged (*caput cornu*), and becomes less opaque (*substantia gelatinosa* of Rolando). The size of the gray crescents varies in different parts of the cord, being largest in the cervical and lumbar enlargements. In the upper dorsal region there is a projection of the gray matter on the outer side of the crescent between the anterior and posterior cornu, called the intermediolateral tract or lateral cornu.

The white matter encloses the gray matter in each lateral half of the cord, except where the posterior cornu comes to the surface. The portion of white matter between the posterior or gray commissure and the anterior median fissure constitutes the anterior or white commissure." (*Aids to Anatomy.*)

2. *Cerebral cortex:* "The gray matter on the external surface of the cerebrum, the cortex, is divisible into five layers, whose distinctness varies in different regions, being perhaps most marked in the parietal lobe; but in the posterior portion of the occipital lobe, in the gray portion of the hippocampus major, in the wall of the fissure of Sylvius, and in the olfactory bulb this arrangement does not exist. These layers are: (1) *Molecular Layer.*—This is the most superficial, and consists of neuroglia, a few small ganglion-cells, and a network of non-medullated and medullated nerve-fibers, the latter forming a delicate white lamina absent in contact with the pia mater. The non-medullated fibers have their origin principally in the small pyramidal cells of the second layer, but also come from the dendrites and axis-cylinder processes of the cells of the first layer. The nerve-cells of this layer have two or three axis-cylinder processes arranged horizontally, which terminate by arborization in this superficial layer. (2) *Small Pyramid-cell Layer.*—The cells of this layer are small and pyramidal, having a diameter of about 10 μ, with their long axes vertical to the surface of the convolutions. Their dendrites pass into the first layer; their axis-cylinder processes passing off from the base give off collaterals and form projection-fibers which go to the corpus striatum. (3) *Large Pyramid-cell Layer.*—This layer is characterized by being made up of pyramidal cells larger than those of the second layer, and increasing in size from above downward, reaching a diameter of 40 μ. The axis-cylinder processes of these cells give off collaterals and pass into the white substance of the brain, where they become medullated. (4) *Polymorphous-cell Layer.*—The cells of this layer are irregular in shape, each giving off several dendrites and an axis-cylinder process. Some of these processes pass into the white center, while others pass to the first layer and are contained in one of its fibers. (5) *Fusiform-cell Layer.*—In this layer are spindle-

shaped or fusiform cells. In the inner half they are numerous and arranged parallel to the surface. The claustrum is made up of this layer, separated by white substance from the other gray matter." (Raymond's *Physiology.*)

3. The *pineal gland* is situated in the brain, behind the posterior commissure and in a depression between the two superior corpora quadrigemina. It is covered by the velum interpositum. It consists of follicles lined by epithelium and connected by connective tissue. The follicles contain brain sand and a viscid fluid. It is considered by some to be an atrophied third eye.

(*To be Continued.*)

## Books Received.

*The* MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading; but this is with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

KRANKHEIT UND SOZIALE LAGE. By Dr. M. MOSSE and Dr. G. TUGENDRICH. Paper; illustrated. J. F. Lehmans, Munchen.

TEXTBOOK OF OPHTHALMOLOGY. By Dr. PAUL ROEMER. Translated by Dr. MATTHIAS LANCKTON FOSTER. Volume III; cloth; illustrated; price $2.50 net; 896 pages. Rebman Company, New York.

THIRTY-SECOND ANNUAL REPORT OF THE STATE DEPARTMENT OF HEALTH OF NEW YORK (For the year ending December 31, 1911). Cloth; 1,232 pages; illustrated. The Argus Company, Albany.

MALARIA, CAUSE AND CONTROL. By WILLIAM B. HERMS, M.A. Illustrated; cloth; price $1.00 net; 163 pages. The Macmillan Company, New York.

DIE LEBERKRANKHEITEN. By C. A. EWALD. Illustrated; paper: price 11 marks; 275 pages. Georg Thieme, Leipzig.

TRAVAUX SUR LA NOUVELLE BACTERIOLOGIE DE LA TUBERCULOSE. By J. FERRAN. Paper; 173 pages. La Renaizensa, Barcelone.

DIE BEHANDLUNG DER LUNGENTUBERKULOSE IN HOCHGEBIRGE. By Dr. O. AMREIN. Paper; 16 pages; price 1 mark. Emil Abigt, Wiesbaden.

VERÖFFENTLICHUNGEN DER ROBERT KOCH-STIFTUNG. Parts V to VII by Prof. Dr. F. SCHIECK. Paper; price 9 marks; illustrated. Georg Thieme, Leipzig.

CHLORIDE OF LIME IN SANITATION. By ALBERT H. HOOKER. Cloth; 231 pages. John Wiley & Sons, New York.

THE CITY THAT WAS. By STEPHEN SMITH, A.M., M.D., LL.D. Illustrated; 211 pages; price $1.25; cloth. Frank Allaben, New York.

HYGIENE OF THE NURSERY. By LOUIS STARR, M.D., LL.D. Eighth edition; illustrated; cloth; 331 pages; price $1.00 net. P. Blakiston's Son & Company, Philadelphia.

THE ILLNESS AND DEATH OF NAPOLEON BONAPARTE. By ARNOLD CHAPLIN, M.D. Illustrated; cloth; price 70 cents; 112 pages. Hirschfeld Brothers, London.

KOMPENDIUM DER RÖNTGEN-THERAPIE. By Dr. H. E. SCHMIDT. Paper; illustrated; price 5 marks; 227 pages. August Hirschwald, Berlin.

DIE SPEZIELLE CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. By Dr. L. KATZ, Dr. H. PREYSING, and Dr. F. BLUMENFELD. Paper; illustrated; price 7 marks. Curt Kabitzsch, Wurzburg.

LA NEVROSI TRAUMATICA. By Prof. ALBERTO SALMON. Paper; 219 pages. Unione Tip.—Editrice Torinese, Torino.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON GENERAL'S OFFICE, UNITED STATES ARMY. Vol. XVII. Second series; 788 pages; cloth. Government Printing Office, Washington.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES. By Various Writers. Cloth; third edition; Vol. I; illustrated; 928 pages; price $4.00 net. William Wood & Company, New York.

MEDICAL LABORATORY METHODS AND TESTS. By HERBERT FRENCH, M.A., M.D., F.R.C.P. Third edition; leather; price $1.50; 202 pages; illustrated. Chicago Medical Book Company, Chicago.

DER EINFLUSS DER ERWERBS UND ARBEITSVERHÄLTNISSE DER TABAKARBEITER AUF IHRE GESUNDHEIT. By Dr. THIELE. 87 pages; paper; price 2.40 marks. August Hirschwald, Berlin.

## Miscellany.

**The Progress of Surgery.**—*Medicus Peregrinus* notes that few professions have so gained in distinction as has that of surgery. Its progress in this respect is something like that of the dog, always an object of the basest contumely in Homeric time, but now risen in caste until recognized as one of the noblest animal friends of man. The barber-surgeon in early days was unceremoniously booted about camp or court, and admitted to the company of his betters only when he was desired to discharge his mystery. Gradually his growing knowledge enabled him to command more respect, but even in the Middle Ages he was only an upper servant. By this time, however, the surgeon divorced himself from the barber and evolved into a separate entity. Anesthesia and bacteriology have completed the emancipation of the surgeon and have placed him on a pedestal of eminence.—"Men, Manners, and Medicine."

**Errors in Practice.**—T. F. Reilly comments upon this subject as follows: "If by any chance you have made an error, either in diagnosis or treatment, do not be overanxious to admit it. Don't say anything; certainly do not volunteer the information that it was your fault. You are infallible to most of your patients. You may think the people applaud your candor and sincerity, but they will always treasure your mistakes up against you. When they become your enemies, you will hear to your mortification of how you yourself admitted such an error. Honesty and candor are not synonymous terms. You should be honest, but honesty does not imply that you must unnecessarily expose your weaknesses to everyone."—"Building a Profitable Practice."

**Some Oddities in Nomenclature.**—In the Section on the History of Medicine of the Royal Society of Medicine, B. Glanville Corney recently read a paper on this subject. He said that in Rio de Janeiro during the epidemics of influenza which occurred in 1777 and 1802-3 the disease was called "zamporinion" and "corcunda." He also cited an epidemic of dengue which ran through Brazil in 1847 and was called "polka" at Rio and "rabo aherto" at Bahia. The term "zamporinion" was adopted from the name of a Venetian singer who was popular at Rio at the time, and has nothing to do with the Portuguese name for measles, "sarampao"—in Spanish, "sarampion"—which is directly derived from the Greek, the bright color of the rash resembling that of a faded vine leaf. "Corcunda" means hunchbacked, and came into popular use because of the bent condition in which patients were left at the end of each paroxysm of cough, which was said to be of a very spasmodic character and closely to resemble whooping-cough. Dengue was called "polka" because of a distinguished court beauty at Rio who was a native of Poland and was in great vogue at Bahia at the time of the epidemic. The same epidemic received the name "rabo aherto" because there chanced to be coincidently an unusual glut of the fish of that name. Glanville Corney advanced the theory that an epidemic of cerebrospinal meningitis was coincident with the Bahia epidemic and that whooping-cough played a part in the "corcunda" attack. He also alluded to the older folk names for influenza—namely, "le tac," "the new delight," and the "jolly rant," which have in turn displaced each other and have themselves been replaced by "the flue."—*British Medical Journal,* February 8, 1913.

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## Original Articles.

### THE PATHOGENESIS OF THE GASTRIC CRISES OF TABES.

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THE unsatisfactory results obtained in the medical treatment of the gastric crises of tabes have induced the neurologist to try surgical treatment. It is certain that the gastric crises constitute very often one of the most serious accidents of tabes; the violence and the repetition of the crises, the abundance of the vomiting, the absolute impossibility of nourishing the patient during the persistence of the crises, the deep denutrition resulting, the morphinism—inevitable consequence, are all causes that justify the surgical attempts, even the most daring ones. The first attempts were made on the stomach itself or on its nervous plexus, but the gastroenterostomy practised at the beginning seems now to be entirely abandoned as inefficient and not rational; the interventions acting on the plexus cæliacus or on the gastric nerves do not seem to have met with better success. Vallas, foreseeing the technique of Taboulay, practised the elongation of the solar plexus. The patient was well during two years, after which the crises reappeared. The operations acting on the pneumogastric are still small in number. Esner proposed the section of the pneumogastric at the level of the cardias. His first operation was a success, and still three months after the patient seemed recovered; the second observation, on the contrary, was followed by death after three weeks following the atonic dilatation of the stomach, accompanied by pains as violent as before but without vomiting. We must add that this operation is not a simple one, because the usual result of the section of the pneumogastric is the paralysis of the stomach with gastric hyperacidity and reflex contracture of the pylorus (Fritch) and very often the production of ulcerations (Ziron, Van Yseren, Ophüls). In order to avoid these troubles Esner is compelled to associate to the resection of the pneumogastric a gastrotomy and the introduction of a drainage through the pylorus reaching the duodenum.

The surgical intervention acting on the posterior roots of the dorsal region seems at present to be the only rational one. These are the surgical interventions which will be the object of our observation. At the present time these are the proceedings used in order to reach the posterior roots: The Foerster, the Guleeke and the Franke operation. Foerster first of all had Kuttner perform the intradural section of the posterior roots in order to interrupt the painful reflex whose sensory route passes without any trouble through the splanchnic fibers and through the dorsal posterior roots. At the beginning the posterior roots cut were the 7th, 8th, 9th and 10th, but following several recurrences Foerster advises at present to pass *above* the *5th dorsal* and *below* the *12th* to avoid the intestinal painful crises.

We can from the beginning be convinced of the manifest danger of the operation. There exist reports of about fifty cases of gastric crises operated upon by this method.

Kuttner: 3 cases; 1 complete recovery, 1 recovery 5 weeks old, 1 death by infection.

Tietze: 1 case; 1 recovery 10 weeks old.

Moskositzy: 1 case; 1 recovery 6 weeks old. The patient has gained 8 kg. since the operation.

Flaerke and Tick: 2 cases; good results.

Baeker and Heule: 1 case followed by paralysis of the inferior limbs, paralysis of the bladder.

Breren de Kan: 1 case; disappearance of crises.

Guleeke: 5 cases; 1 death from pneumonia (operation intradural) 4 cases (operation extradural) with the following results: (a) 1 case with disappearance of the gastric crises; (b) 2 cases in which gastric crises disappeared but intestinal crises followed the operation. (c) 1 case with negative result, notwithstanding the resection of the posterior roots from the 7th to the 11th.

Clairmont: 5 cases; 3 ameliorations.

Groves: 3 cases.

We must add to these a list of cases given by Bruns and Sauertret, Thomas and Nichols, Morinzer, Schlesinger, Schaffer, Federman, Lewandowsky, Nonne, Bornhaupt, Lambert, Leruhe, Cotte, Sothersen, Van Angerer (3 cases), Neile, Rosenstein, Zinn and Meishaw, Byron, Bramwell and Thompson, Anselme Schwartz, Tupper, Labey.

The observations of Hovelacque on 49 cases gives as results 10 cases of rapid death of which 7 resulted from infection; 1 death from shock; 2 from bladder complications. To these results we must add 3 deaths from myelitis in the following month, 5 cases of postoperative paraplegia; several cases of bladder troubles; 3 recurrences of crises; 1 case of recurrence with aggravation; in 1 case the crises disappeared but were followed by atony of the stomach necessitating a gastroenterostomy.

We must add that a certain number of patients disappeared without being kept track of. So, in summing up the cases of death, paraplegia and recurrences, we find 23 unsuccessful results; over 49 operations with a mortality of 26 per cent. This mortality is due to a complex of causes, viz., to the operative shock, to the meningitis, to the bladder

complications, to the loss of cerebrospinal fluid, and also to the state of the cachexia of the patients operated upon. That will explain why the mortality is higher in the operation for gastric crises than in the one practised only by Foerster on the posterior roots of the lumbar region in the cases of spastic paraplegia. So the Foerster operation for gastric crises is a serious one and justified by the gravity of symptoms presented by the patient.

As far as its usefulness is concerned, it may be considered real. In the majority of cases, after the

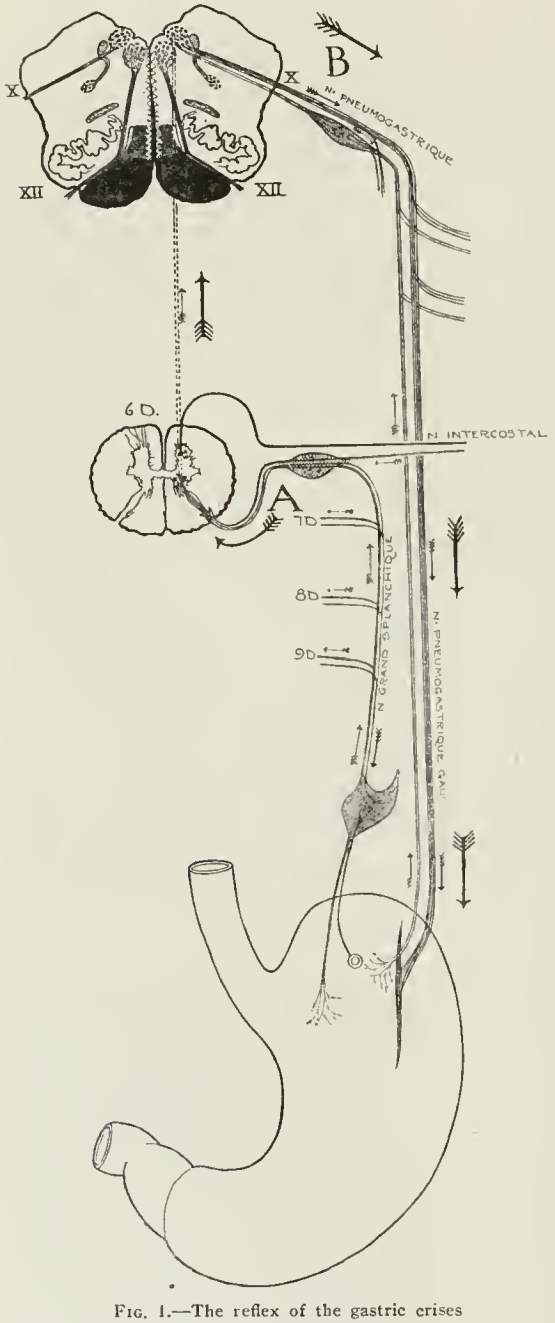


Fig. 1.—The reflex of the gastric crises

operation the gastric crises disappear, nourishment becomes possible, the weight of the patient increases but very often intestinal painful crises persist. The case of recurrence or of negative result seems due to the insufficient number of roots exposed. There is, in fact, a very interesting observation of Guleeke in which the crises returned after the resection of the 7th, 8th, 9th dorsal roots but disappeared after a complementary resection of the 10th and 11th roots.

The gravity of the Foerster operation seems principally due to the opening of the dura mater and to the exit of the cerebrospinal fluid. So it is easy to understand that the first modification brought to the technique of the operation was the one allowing the operator to reach the root per *vias extradurales*.

Guleeke, after a case of death following a Foerster operation proposed and performed the extradural resection of the posterior roots and in so doing he avoided the exit of the cerebrospinal fluid, the collapse following the intervention, and avoided also the secondary meningeal infection. After the resection of the veterbral arches, Guleeke takes hold of the dural sac in the middle and brings it on one side and cuts the roots of the opposite side with a rapid dissection, separates the anterior from the posterior root, opens the conjunctival sac for a length of a few millimeters, cuts the posterior root which retracts immediately towards the medulla, applies a fine ligature at the base of the sheath, and cuts the peripheral segment.

Notwithstanding its undeniable advantage over the Foerster operation and the satisfactory results, the Guleeke operation represents a really difficult operation. Pausset, who studied the technique of intervention, warns against the long duration of the operation and the abundant hemorrhage. It is easy to understand the difficulty of cutting the posterior root in its conjunctival sac, in the midst of the spinal intradural plexus so developed at this point.

Franke, on his part, proposed a very interesting modification. He performed on a patient refusing the Foerster operation, the bloody extirpation of the 6th, 8th, and 9th intercostal nerves; the nerve uncovered near the vertebral column, separated from the muscular masses, taken with a clamp, and gradually detached from its center, rolling its extremity on a clamp; this detachment, according to Franke, must in the meantime pull and dislodge the roots of the splanchnic nerve, viz., the rami communicantes which branch off from the intercostal nerve immediately below the spinal ganglion; in fact, very often the severing detaches, besides the intercostal nerve, a small fragment of the spinal ganglion. In a first case Franke obtained real success complete in appearance because his patient seemed to have entirely recovered from the crises during a period of 18 months after the operation. A certain number of surgeons have since Franke attempted the operation—Clermont, Mario and Pasturie, Cade, Leruhe Mourquod and Cotte—but the results have been very variable. In a case of Clermont, the gastric crises suppressed during a few weeks reappeared afterwards. In the three cases of Mario and Pasturie the crises have disappeared and the patients have been considered recovered. The case of Cade and Leruhe Mourquod are of too recent a date to form an opinion. At the Salpetrière the Franke operation has been performed three times: in one case with recovery in eight months; one with recurrence, a third with death.

The observation of these three cases has been studied by T. Pinel of the Clinic of Professor Déjerine and it is in studying with him the specimen of the autopsy of the one case that we have been able to develop the ideas exposed in this paper.

The Franke operation apparently so benign is not as simple as it seems. It is almost impossible, in fact, in uncovering the intercostal nerve to avoid the formation of a double pneumothorax. It is certain that this pneumothorax is usually endured well, but in a case of death observed at the Clinique

Charcot it seems to have been the cause of the death. We will see now in making use of an autopsy performed on a patient that had been operated with the Franke method that the operation seems at least theoretically incomplete, insufficient, and not rational.

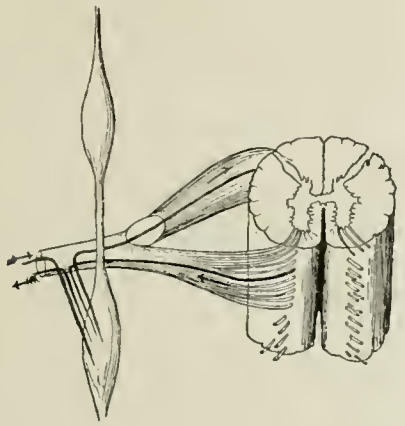

Fig. 2.—Showing the anatomical relations of the anterior and posterior roots

Let us now try to explain the probable mechanism of the tabetic crises and with the help of the pathogenic notions acquired judge of the value of their different operations.

As Foerster has already stated, the gastric crises are essentially constituted by three elements: (a) Pains, (b) vomiting, (c) troubles of secretion.

But these three elements composing the classic syndrome of the gastric crises do not always exist together. The clinic shows that a dissociation of the elements of the syndrome may take place and we may, for instance, have painful gastric crises without vomiting, while we almost never have vomiting without pain.

It is then an ascertained fact that the pains are the essential and initial phenomena, while the vomiting and the troubles of secretion are only the reflex reaction responding to a painful irritation.

Vomiting and the troubles of secretion manifestly originate from the pneumogastric nerve, which is the principal nerve of the stomach and whose irritation, as physiology teaches, determines contraction of the stomach and hypersecretion, the pneumogastric being essentially the nerve presiding in the function of vomiting. The pains instead seem not to originate from the irritation of the pneumogastric, as this nerve takes only a very small part in the sensitive innervation of the stomach; and also the recent works of Muller and Newman have a tendency to put in doubt its rôle as sensitive nerve of the stomach.

Besides, it is easy to conceive that a stimulation of the sensitive branch of the pneumogastric at its point of exit from the skull (at the level of its meningeal sheath) would determine at the same time gastric, esophageal, laryngeal, cardiac, and pharyngeal pains, viz., pains in all the dominion of the irritated nerve. We must then admit a pneumogastric origin of the gastric crises of tabes only in the case in which the pharyngeal and laryngeal apparatus participate in the crises.

The sensory innervation of the stomach is almost essentially given by the splanchnic nerves which are constituted by the rami communicantes of the dorsal roots from the 5th to the 10th as it has already been demonstrated by Head, Newman, Muller, Laignel, Lavastine-Eppinger, and Hess.

The sensory fibers of the splanchnic nerves after having been intercepted in the spinal ganglion reach the medulla through the posterior roots and can consequently participate to the painful irritation of these roots?

If we resume the anatomical data of the great splanchnic we know that it is constituted by two orders of fibers, viz., of thin amyeline fibers in considerable number, and of a small number of large myelinic fibers; and that these two kinds of fibers have two absolutely distinct functions. The small one, without myelin, are centrifugal fibers, coming from the medulla, probably from the peri-ependymal, gray matter or from the base of the anterior cornua; they leave the medulla with the posterior roots, they pass through the ganglion without interrupting their continuity, and they continue their course in the splanchnic.

In fact, it has already been demonstrated by Jean Charles Roux that if we examine the grand splanchnic nerve of the tabetic, we will find a certain number of these fibers degenerated; in the same way if experimentally we cut the posterior roots we will see them degenerate toward the splanchnic. They are consequently centrifugal and have their trophic center in the medulla and not in the ganglion. Their function is not well known; they certainly are not sensitive functions but their experimental stimulation will not give motor phenomena of the stomach. Perhaps they are vasomotor fibers. At any rate, their irritation in the tabetic at the moment in which they pass in the posterior roots cannot be considered the origin of the gastric pains; it may be that their irritation provokes vasomotor troubles; it may perhaps be that their irritation in suppressing their inhibitory rôle makes easier the reflex reaction of the pneumogastric, manifesting itself by the vomiting.

The large myelinic fibers instead do not degenerate after the section of the posterior roots, but they degenerate if the spinal ganglion is excised. They are sensitive fibers and Kölliker experimenting on the mesentery of the cat, has seen these fibers end in the Pacini corpuscules. In the tabetic when we examine the dorsal posterior roots we find these sensory fibers degenerated but if we cut the great splanchnic we find them intact; consequently their

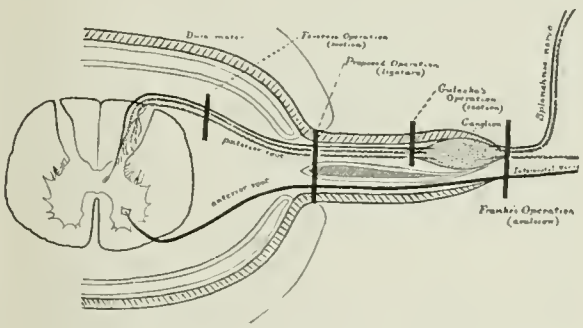


Fig. 3.—Showing the different operations performed for the gastric crisis of tabes.

painful irritation and their destruction takes place between the spinal ganglion from which they originate and the medulla, viz., in the root itself. It is to these fibers that in our estimation we must relate the harmful irritation determining the gastric crises.

But besides the anatomical argument in favor of the dorsal origin of the gastric crises, we have also clinical arguments confirming the anatomical views. We observe in fact during the crises, and sometimes even during the interval between the crises, troubles of sensibility in the domain of the intercostal nerves between the 4th and 10th roots.

We notice either an anesthesia or a hypoesthesia and sometimes a very painful hypoesthesia. It is a phenomenon more or less constant that we have found always and to which Foerster, Guleeke, Mario, Pasturie, Lermier have very often called our attention. And besides we can make a crisis disappear, as Loring has shown in injecting in the muscular masses covering the origin of the intercostal nerves a solution of cocaine.

It seems then demonstrated that the gastric crises are secondary to the painful irritation of the dorsal roots which furnish both the sensibility of the intercostal nerves and the sensitive fibers destined to the gastric mucous membranes. The simultaneous irritation of these fibers results by producing intercostal pains and gastric pains which start the bulbar reflex of vomiting. All interventions, which, taking this point of view as departure, will attempt to approach the dorsal roots, are perfectly legitimate and the only rational ones.

*Recapitulation.*—We have established the splanchnic origin, and consequently the dorsal radicular origin of the tabetic pains which determine the gastric crises. We must now ask at which point are affected and irritated the sensory fibers of the stomach.

The large myelinic fibers of the splanchnic are intact in the nerve and degenerated in the posterior root; if we cut longitudinally a dorsal ganglion and its posterior root we notice that this degeneration goes as far as the superior pole of the ganglion, where it ends; on this point a large fibrous thickening and an accumulation of inflammatory cells exist; it is the process of transverse radicular neuritis to which, after the studies of Nayeotte and Tinel which must connect the tabetic troubles and disturbances. We can see on the microscopical specimen and on the schema, that the meningeal radicular sheath is the seat along all the length of the posterior root of a chronic irritation which is not found in any other place as marked and that consequently seems to be the point of departure of the painful irritations and of the destructive lesions. We can, besides, through the kindness of Professor Déjerine give here the photographic reproductions of the same microscopical section of a very important case of tabetic gastric crises, studied in his laboratory. We see very well that the degenerative lesions are almost entirely situated on the roots of the dorsal region from the 2d to the 6th dorsal; in this case of tabes terrible gastric crises existed. So the dorsal systematization of the gastric crises seems demonstrated.

Let us see now how we can justify in connection with these anatomical and physiological data the different operations proposed.

*Foerster Operation.*—The section of the posterior roots seems the most logical and rational; it certainly severs the reflex connection between the irritated roots and the bulbar centers; perhaps the operation has not until now been practised over a sufficiently large surface. After having counted the operation to the 6th, 7th, 8th, and 9th roots Foerster entered the operation above as far as the 5th below to the three last dorsal; it would be necessary in our estimation to extend the section as far as the fourth, which, in some cases seems to furnish a sufficiently large contingent of fibers to the great splanchnic. It seems, in fact, that the recurrences and the failures of Foerster operations principally are only due to the insufficient number of roots cut.

*Franke Operation.*—It seems less logical and rational, in fact the severing of the intercostal nerves is a blind maneuver which gives only very variable results, because it happens that sometimes the intercostal nerve breaks immediately while at other times it breaks at a point a little further from the starting point; but it is very rare to be able to sever in the meantime the inferior pole of the ganglion; so it is only in this circumstance that, according to Franke himself, we could be sure of the severance of the origin of the splanchnic. We know only one case, the one of Cotte and Leridie, in which the severing of the nerve has brought with it at the same time the spinal ganglion and also the posterior root, and also in this case the fact has only been noticed in one root.

Even admitting, then, that through the Franke proceeding we could extirpate with surety the inferior pole of the spinal ganglion, it is evident if we consider the anatomophysiological data exposed above, that in so doing we do not reach the tabetic lesion—which, as was stated, is not located below but above the spinal ganglion, in the vascular meningeal sheath. It is this location that we must reach. So the Franke operation seems at least therapeutically illogical and blind, and we must add also that notwithstanding the benign appearances the operation is not devoid of danger because of the pneumothorax that almost inevitably follows the operation. Still, it seems already clinically established that the operation has brought a certain number of temporary ameliorations and some recoveries; but we must remember that nothing is more capricious in its evolution than the tabetic gastric crises.

The gastric crises are generally an early symptom in the evolution of tabes and are not a durable symptom. It is not rare to observe cases of tabetic gastric crises having lasted for years suddenly completely disappear without any therapeutic intervention. Their disappearance is without any doubt due to the complete destruction of the posterior dorsal roots, accomplished by the natural evolution of the disease. It is also possible that the traumatism of the Franke operation and the hemorrhage that the operation produces in the ganglion favors the complete destruction of the irritated fibers and is capable of producing the disappearance of the crises; it may be also that the considerable hemorrhage acts as a local revulsif. In fact, all of us have in part seen the painful gastric crises of tabes relieved by the application of cups applied on each side of the vertebral column. The Franke operation shows a statistic of a great number of failures and recurrences which demonstrate the logic of our criticism.

There remains the Guleeke operation. This is evidently less dangerous than the Foerster, being also as logical because it aims to the incision of the posterior roots, above the ganglion, but it is a more difficult one. The section of the posterior roots in the meningeal involucrum is a long and very delicate work, and we may add that it seems to us absolutely useless. In fact, the Franke operation has at least demonstrated that the cutting of the inter-

costal nerves and the severing of the vasi-communicantes is absolutely harmless, consequently there would be no inconvenience in cutting or suppressing at the same time the anterior and the posterior root. This would be the proceeding that Dr. Pinel, and myself would suggest, consisting in the ligature of the two roots, anterior and posterior, as far as possible from the ganglion.

This ligature could be performed very rapidly after laminectomy without any work of dissection; to this ligature we may add the section of the two roots, but this would not be necessary. We reach in this way with certainty the tabetic radicular lesion; we intercept completely the reflex connections between the sensory ganglion and the medullary centers, and we do not expose the patients to the dangers of infection of the meningeal cavities because of our avoiding the exit of the cerebrospinal fluid.

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## NEWER IDEAS CONCERNING THE PROBLEM OF CANCER ETIOLOGY.*

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Although cancer research is being carried out in most communities where the Science of Medicine is studied and practiced, we have as yet, after many years of toil, been unable to find its true cause. Most of our knowledge of its etiology is expressed in the theories of different workers on the subject, supplemented to a certain extent by a mass of more or less important facts gleaned by experimentation.

In presenting this subject for your consideration I propose first very briefly to review and criticize the older theories of neoplasia, and will then call your attention to some of the most recent facts and fancies brought out concerning the causes of new growths, at the same time suggesting some original ideas on the subject.

Throughout this paper, unless otherwise noted, the word "cancer" will be used to cover *malignant* neoplasms in general.

Let us briefly consider the older theories of Cohnheim, Ribbert, von Hansemann, Adami, Hauser, Oertel, and Marchand, and the so-called "parasitic theories."

According to Cohnheim's theory (one of the most popular) a neoplasm originates in displaced embryonic cells or "rests." While this may be true in some cases it cannot explain the origin of all kinds of tumors, a requirement which Adami[14] justly insists upon. Furthermore this theory does not explain the reason for, nor the stimulus to, a sudden division of these supposed cell "rests."

Ribbert believed that a cell displacement is necessary but that a tumor results because of a decrease in the external resistance and forces which oppose the growth of cells. This theory does not meet Adami's requirement and does not reveal the cause for the sudden change from the normal to the abnormal.

Van Hansemann's theory of anaplasia suggests that certain abnormal cells exist which have an increased vegetative activity but are unable to attain normal structure and functions. This he believes is due to an abnormal distribution of nuclear material in the cells. Again this theory is applicable only to malignant tumors, and suggests no stimulus.

Adami[14] tells us that cancer may be due to cells losing their habit of function and acquiring the habit of growth—at which point the neoplasm starts. This gives us no idea of what the force might be that could cause such a changed condition.

Hauser's theory would lead us to believe that certain cells—descendants of the ovum—may show a variation from the normal in a very much more active vegetation than their related cells, just as there may be marked variation in one species of animals, plants, bacteria, etc. The descendants of such cell variables would form a neoplasm. This is too much a question of heredity and predestination and does not explain those tumors which follow, in close association, injuries and irritations.

Oertel states it as his belief that two orders of chromatin exist in the single nucleus, one governing function, the other influencing growth. A cancer cell, he believes, is one which has lost the chromatin governing function, and its descendants have only the power of proliferation. This does not explain why certain cells should proliferate in a *malignant* manner, neither has it ever been proven that two such orders of chromatin are present in a cell nucleus.

Marchand[1] holds that for a malignant tumor to develop there must first be a local cell degeneration and that in some way this abnormal cell has an action on the other cells in the neighborhood causing them to take on a malignant proliferation. Although he describes no detailed forces which might be concerned in such an action, his theory seems to be strengthened by recent investigations.

That cancer is caused by a microorganism or parasite is a view that has many ardent supporters. Practically every form of microorganism, including bacteria, protozoa[18] and animal and vegetable parasites, has at one time or another been accused of being the cause of cancer. Up to the present time no specific parasite has been found, of all those suspected, which could experimentally reproduce a true cancer. Walker[2] of Buffalo has recently published an article in which he believes he has demonstrated that cancer is produced by a parasite of the earthworm. Fibiger[19] of Copenhagen reports that he has induced cancer in rats by feeding with parasites of cockroaches. To me the very multiplicity of parasites "demonstrated" to be the specific cause of cancer is the greatest argument against the theory. On the other hand, we may include any or all of these microorganisms as predisposing causes leading to the precancerous stages of cell degeneration or disordered metabolism, admitting at the same time that many other entirely different forces may lead to the same cell derangement. It is fairly safe to predict that should a specific microorganism eventually be found as the cause of tumors (a finding which at present seems unreasonable) it will belong to the class of ultramicroscopic organisms.

All theories associated with strict morphology, biology, or bacteriology have, up to the present, failed to explain the cause or causes of cancer and other growths. It would seem, then, that the problem should be studied from a different viewpoint.

For the last year and a half the writer has spent much time in a study of the literature on the problem of cancer etiology, and on examinations of

*Read at a meeting of the Syracuse Academy of Medicine, Jan. 21, 1913.

tumor tissue from the standpoints of bacteriology, pathology, biology, and chemistry. As a result of this study he wishes to class himself with those few individuals who believe the factors at the basis of cancer are chemical or biochemical.

Of the older theories that of Marchand seems the most reasonable, and I believe that by imagining chemical or biochemical and physical forces to be applied to this theory we may have an interesting and valuable working hypothesis.

As a *primary* cause of cancer it would seem that some form of cell or tissue degeneration is necessary. Also it appears that this degeneration, which leads to necrobiosis or to necrosis, may be due to one or more causative factors which can be divided into two groups: (1) The interference with the nutrition, or blood supply to a part. (2) Cell or tissue injury, due to the following means: (a) Mechanical (wounds, etc.); (b) chemical (poisons, etc.); (c) physical (heat, light, etc.); (d) parasitical; (e) functional (overactivity, disuse). This may be termed the *primary "precancerous" stage.*

Everyone is familiar with the close association between cancer and a history of previous injury, chronic irritation or chronic inflammation. Because we can obtain no history of previous injury, chronic inflammation, or irritation in a case of cancer may we justly say that none of the above factors, some of which may be unfelt and unseen, has been the cause of a primary cell or tissue degeneration? May not certain things affecting the blood supply, certain protoplasmic poisons, heat or light rays, or bacteria have been at work in the past to cause necrobiosis or necrosis absolutely unrecognized by the diseased person. The importance of "precancerous" lesions cannot be overestimated. We owe much to Bloodgood[16] of Johns Hopkins, and others, for their emphasis of this fact.

As a *secondary* step in the chain of events leading to a malignant proliferation of cells we would mention the affinity of these primary "precancerous" areas of degeneration or necrosis for certain inorganic salts of the blood, as well as a marked change in their chemical structure and metabolic activities. This would constitute a *secondary "precancerous" stage.*

Before proceeding further let me emphasize that years ago Ringer, and later Loeb,[3] discovered that certain inorganic salts are absolutely essential for the proper metabolism, development, and reproduction of the cells and tissues of the body, and that these constituents must exist in the blood, lymph, and tissues in a constant proportion if cell activity and reproduction are to be maintained. Moore,[4] writing in a book edited by Leonard Hill in 1906, on "Recent Advances in Physiology and Biochemistry" suggests that "in an action due to variation in inorganic salts will ultimately be found the secret of the cause of irregular cell division in the body, giving rise to malignant growths." He goes no further, however, in demonstrating how this influence might be brought about.

Moore, with Roaf and Whitley, found "that a mere trace of added sodium hydrate increased markedly the growth and cell division in the fertilized eggs of *Echinus esculentus.*" Additional amounts slowed or stopped the division.

He found also that the addition of alkali caused irregularity in the size and shape of the cell, and *irregular nuclear division.* Acid had practically the opposite effect. He concludes that the living cell is extremely sensitive to variation in concentration of the hydroxl and hydrogen ions, and that a normal reaction of the medium is important for cell growth and division.

More recently Ross and Cropper[5] of Liverpool by an ingenious *"in vitro"* method, have been able to study reproduction normal, augmented, and asymmetrical," of living cells, especially leucocytes. They have been able to watch carefully the diffusion of substances into these cells from the surrounding medium and have drawn up certain laws or factors relating to such diffusion. They believe, and have demonstrated, that diffusion into cells is increased by four chief factors: (1) Concentration of the diffusing substances; (2) time allowed for the process to advance; (3) heat; (4) alkalies and alkali salts. They have also found that increasing these factors within certain limits increases the diffusion of substances into the cells from the surrounding medium. Furthermore they have concluded that the latter factor, the influence of the alkalies and alkali salts, is more important than any of the other three, and that if twice the amount of salts, up to a certain point, is added to the surrounding medium the diffusion of substances into the cells will be twice as fast. With increased diffusion they demonstrate increased growth and division of cells.

As a result of some interesting and valuable experiments done by Carrel of New York on the cultivation and development of certain body tissues in suitable media outside the body, the following conclusions have been reached: "Normal blood plasma is not the best or 'optimum' medium for the growth of tissue or organs, each of which probably has its own optimum medium not attained in the body under normal conditions. Slight modifications of the tension, the alkalinity, or the addition of certain inorganic salts to normal plasma increases the rate of growth of tissues."

If this is true of tissues, must it not be true of the individual cells of tissues? Thus we must assume that an individual epithelial cell or connective tissue cell is in a medium, the blood plasma or lymph, which under normal conditions is not influencing the rapidity of growth of such a cell as much as it really has the power of doing when the surrounding plasma or lymph has been even slightly changed in tension, reaction, and inorganic salt content. May not tumor cells be an "optimum local growth" of cells because of an "optimum local chemical medium" in which they exist? If there is a parasite which causes cancer, or any other tumor, it would seem that the *individual cancer, or tumor, cell is the parasite,* and that an influence is brought to bear on a normal cell which causes it to take on a parasitical existence. As suggested above, this is possibly a *chemical* influence from the neighborhood, or local medium in which the cell exists, and it acts by markedly changing the molecular structure and entire nature and metabolism of the cell itself, a change which is transmitted possibly to the "daughter" cells.

Abderhalden,[20] who has done such excellent and important work in the field of physiological chemistry, has the following to say on the chemical constituents of the cell and its surrounding medium in relation to cell growth and character: "it is possible that a body cell may retain its individual nature *only with difficulty* if for any reason its chemical nature and function become seriously altered, and

the progeny of such a cell will possess the characteristics of the mother cell so that gradually a whole cell complex will develop which is of a nature foreign to the entire organism and to its metabolism, and in fact the metabolic end products of this new cell complex may exert a disturbing influence upon the metabolism of the remaining cells of the body."

"Apparently there is a connection between these cells and the mother soil—we refer especially to sarcoma and carcinoma—for it has been frequently doubted whether such cells can be successfully transmitted to organisms of a different species. We are, in making these suggestions, very far from explaining the formation of these peculiar, atypical tissues. We only wish to bring forth the fact that with the further development of physiological chemical knowledge new tasks will be set, and that even problems of purely morphological investigations will, in the course of time, become closely allied to those of physiological chemistry. If it is once found possible to compare the metabolism of the cells of a cancer, or other malignant growth, with normal cells, we may certainly expect to obtain a more accurate insight into the nature of such mysterious processes."

Some of the most recent work of Carrel[6] is on the "Artificial Activation of the Growth in Vitro of Connective Tissue," an interesting account of which appears in a recent number of *The Journal of Experimental Medicine*. His summary and conclusions are, in part, as follows: "The experiments have shown that extracts of tissues and tissue juices, under certain conditions, accelerate the growth *in vitro* of connective tissue from about three to forty times. This activating power was found in many tissues. It was much more marked, however, with the extracts of embryos, of adult spleen, and of the Rous sarcoma. The power diminished directly with the dilution of the extracts, and appeared not to apply to the tissues of a heterologous animal. The power was reduced when heated at 56°C., and removed when heated at 70°C. It was diminished markedly by filtration through a Berkefeld filter and was completely suppressed by filtration through a Chamberland filter."

It has been of interest to me to look at these facts from the standpoint of the cancer problem. Here we find that normal tissue may be accelerated "from about three to forty times" not, apparently, by any microorganism, or any other factor which we have assumed as possible causes of malignant proliferation, but by a definite "stimulus" present in tissue or tissue juices, and it is difficult to conceive of this "stimulus" to growth being anything but chemical or biochemical in nature. It does not take a great stretch in imagination to believe that those forces which can cause a normal tissue to grow forty times its normal rate may also account in some way for malignant proliferation.

From the viewpoint of my ideas concerning the importance of chemical substances, including inorganic salts, in the causation of malignant growth of cells, this further statement of Carrel's is interesting: "An extract obtained by the centrifugalization of embryonic tissue, a few minutes after it had been mixed with Ringer solution, increased the rate of growth two and a half and three times. The acceleration of the growth *was much more marked* when the mixture of tissues and Ringer solution was allowed to stand in the refrigerator for twenty-four hours or several days before being centrifugalized." In one of his experiments tissue was mixed with Ringer solution and allowed to stand twenty days. This extract caused, in twenty-four hours, an area of new connective tissue thirty times larger than did the control. This would seem to indicate that the more the Ringer's (consisting of the inorganic salts NaCl, CaCl, and KCl in solution) was allowed to mix with, or act upon, the substances in the extract which caused the growth of the connective tissue, the more power this extract had for accelerating growth.

Cell reproduction is constantly taking place in the living body and it would appear that a stimulus which causes normal reproduction is either constantly present within some portion of the cell, or else it comes from outside the cell or from the surrounding cell medium by a process of diffusion, or by a definite chemical attraction, and is closely associated with the nutrition and growth of the cell, especially of the nucleus. We believe the latter is the true condition and that, as many authorities would lead us to believe, a fixed ratio between the salts in the blood, lymph, and tissues is necessary for normal acticity and reproduction of cells, and also that the chemical structure of these cells must remain intact. Is it not possible, then, that a disturbance in this ratio and an upset in the chemical equilibrium will lead to abnormal metabolism, growth, and reproduction, and result in an atypical growth in the local area involved

This increase of cell growth may be due primarily to increased permeability, of the cell membrane. McClendon and Mitchell[7] have found that "an increase of -OH ions in the surrounding medium causes an increased permeability of both fertilized and unfertilized sea-urchin eggs and leads to an increased rate of oxidation within the egg." Lillie[8] says that "an increased permeability leads to increased cell metabolism and oxidation, an upset in the chemical equilibrium of the cell, and an accelerated cell division."

From these and other sources we learn that the permeability of cell membranes, the absorptive powers, the intramolecular activities, the oxidations, and the reproductive powers and characteristics of cells may be altered through the influence of the surrounding chemical medium or environment. Acceleration in all these processes may be brought about artificially by a change in the inorganic salt content or in the amount of -OH ions in the medium.

Now we may proceed to a consideration of the pathological condition in which the local inorganic salt content is increased in areas of degeneration or necrosis due to the affinity of such areas for these salts. We know from our pathological and chemical experience that there is a somewhat definite affinity between dead and dying tissue and certain inorganic salts of the circulation, especially magnesium and calcium in the forms of phosphates and carbonates. From the beginning of the attraction between these salts and the changed tissue (a chemical pathological process which is not, as yet, thoroughly understood) is there not a gradually increasing localized salt content established? If this is so, may it not be possible that due to the influence of increased inorganic salts the cells in the immediate neighborhood take on increased permeability and absorptive powers resulting in a molecular rearrangement, a changed chemical equilibrium and a rapid growth and local proliferation compared to that in other parts of the body?

As yet we do not attempt to define any one spe-

cific substance or force as the exciter, or the inhibiter, of rapid and malignant proliferation of cells. This must be worked out by experiment. It may be simply a question of increased osmotic pressure and surface tension due to the increased absorptive powers of the cells affected, thus leading to rapid cell division. Forbes Ross[9] of London believes that cancer is due to an upset in the mineral balance of the body, especially as regards the potassium salts. He finds these potassium salts to be greatly diminished in cases of cancer, and goes so far as to highly recommend their use in treatment. Ross[5] of Liverpool suggests that xanthine, creatine, choline, or allied products derived from dead tissue and rapidly absorbed by the surrounding cells are the stimuli to cell growth.

Calkins, Bullock, and Rohdenburg[10] have studied the "Effects of Chemicals on the Division Rate of Cells." They come to the conclusions that, "under certain conditions, some chemical products obtained by the hydrolysis of nucleoproteins have a definite stimulating effect upon the division rate of free living cells." Also, "they have evidence that the presence of cells undergoing autolysis produces the same type of epithelial reaction as that produced by pure chemical products of nucleoprotein hydrolysis." Their work certainly lends strength to the idea that cell degeneration and death may lead to increased growth of neighboring cells, even to malignancy, through the stimulating effects of chemical autolytic products.

If products of living tissues or tissue juices, and products of dead tissues have the power of greatly activating the growth of cells it certainly behooves us to study carefully the effect of each and all of the cell constituents as regards their power to activate cell growth, in order, if possible, to find the one or more specific chemical bodies that have this power.

As mentioned previously, the first bodies we think of are the inorganic salts. As is well known these act as electrolytes. Wells[11] says: "If we had no electrolytes in the cell, electric charges could not be carried about in it, and hence chemical reactions could not occur. It is this fact that makes the inorganic salts of such vital importance to the cell life." Mann is correct in saying that "ash free proteids are chemically inert, and, in the true sense of the word, dead bodies. What puts life into them is the presence of electrolytes."

We need not dwell on the importance of cell proteins. Work has already been done that demonstrates the power of products of nucleoprotein hydrolysis to stimulate the division rate of cells.

The other essential constituents of the cell, beside salts and proteins, are the lipoids or fats, possibly carbohydrates in some form, and water. The writer believes that from the standpoint of the cancer problem the study of the lipoids and the inorganic salts in relation to cell activity will offer the most interesting, if not the most valuable information.

The chief lipoid found in every cell is lecithin or a fat which is doubtless the chief carrier of phosphorus, a chemical substance absolutely necessary for growth of the nucleus. From our knowledge of bacteriology and immunity we know that lecithin has an activating power and may take the place of complement in certain immunity reactions. In his "Serum Diagnosis of Syphilis," Noguchi says: "I have found that not only samples of tissue lecithin, but also several other phosphates, as well as several acetone soluble fractions of tissue lipoids, can act as antigen." Cholesterin is another substance, found in every cell, which may have a decided influence on the rate of all growths. Abderhalden[20] thinks "it is entirely possible that lecithin acts as an accelerator in animal cells, and even on the intracellular ferments." He states that cholesterin inhibits the action of lecithin and suggests that these two important substances may have an antagonistic action in the cell. That lecithin is a metabolic stimulus is shown by Bain[17] in some recent experiments. On the other hand, Robertson and Burnett[21] find that cholesterin causes a marked acceleration in growth when injected into rat tumors, while lecithin has a retarding effect. We must take into consideration, also, the properties of *colloids,* and, perhaps of more importance still, the phenomena of *catalysis* and *enzyme* action.

In studying Carrel's work in the light of enzyme or colloid action one cannot but be impressed with the fact that there is some similarity between the action of these tissue extracts and that of enzymes. The tissue extracts have the power of greatly accelerating the reactions in connective tissue cells leading to rapid reproduction. A *concentrated* extract had much more power to activate growth than did a dilute extract. Concentration, also, has been found to increase the power of enzymes.

The actions of both the tissue extract and of enzymes are fairly specific.

These extracts and enzymes have apparently somewhat the *same "optimum temperature."* This fact also would tend to rule out the inorganic catalysis being compared to these extracts.

Filtration through a Berkefeld or a Chamberland filter greatly lowered or suppressed the activating power of the tissue extract. Enzymes, being colloids, filter poorly or not at all.

The fact also brought out that the tissue extract had much more power to activate growth when allowed to stand for some time mixed with Ringer solution, suggests the added acceleration of a coenzyme. Many of the so-called coenzymes are inorganic salts.

Inasmuch as a tumor cell differs little from a normal cell except in its metabolism and chemical activities, and inasmuch as it is difficult to understand any great difference in the forces which can cause normal cells to reproduce at forty times their normal rate, and malignant tumors, it would seem reasonable to study the origin of tumors, malignant and benign, from this same standpoint of biochemistry.

Perhaps no recent work which may throw light on the problem of cancer etiology is of so much interest and importance as that done by Rous and his co-workers[12] at the Rockefeller Institute. These investigators have experimented with chickens. One of the first findings was that they could transmit a spindle-cell sarcoma of a chicken to an apparently normal chicken by a *cell-free filtrate.* The tumor cells were macerated and suspended in a large quantity of Ringer solution and thoroughly shaken, after which the mixture was filtered. A second sarcoma developed at the site of inoculation of this filtrate. In their work they found no instance of natural infectivity or contagiousness, and cultures from the growths remained sterile as regards all known bacteria.

They believe "the action is due to a cell derangement brought about by accessory factors." In a subsequent report on "The Rôle of Injury in the

Production of a Chicken Sarcoma by a Filterable Agent" they declare that the tumor is first a minute nodule at some point in the track of the injecting needle, and they believe the "filterable agent requires for its action a cell derangement or proliferation." They found also that tumors resulted more often when a certain amount of infusorial earth was mixed with the filtrate. This action of infusorial earth (which is made up largely of inorganic chemical constituents) is interesting in view of some of our previous statements. Another important fact brought out is that when this filtrate "was injected into the bloodstream a few tumors resulted in areas of *previous focal* or *cell derangement*."

These same workers report another case in which an osteochondrosarcoma was transmitted from the original host to a second chicken by means of a filterable agent. Again the tissue was ground up, taken up in 350 c.c. of Ringer solution, sedimented, and filtered through a Berkefeld filter which will hold back the smallest of our known microorganisms. Tumors resulted in four out of six cases in the presence of infusorial earth. These generally formed by a coalescence of numerous small nodules in the track of injury of the injecting needle.

What is the thing which has this wonderful power? Does it not seem reasonable to imagine that it is either an ultramicroscopic organism, one which passes through a Berkefeld filter, or else a definite chemical substance, or group of substances which pass through in solution? To me the latter seems much more probable.

Let me now proceed to the adaptation of these theories to some of the problems of cancer.

The predisposing causes of cancer included in the "precancerous" stages have been discussed. Suffice it to say that the different causes mentioned are not only enough to cover the popular theories concerning the influence of injury and chronic irritation, but they also account for other factors such as chemical, parasitical, and functional influences which are usually unseen and unappreciated.

The common sites for the development of cancer, namely, the uterus, the stomach, the breast, the bowel, the skin, etc., are, in about the same ratio of occurrence, correspondingly liable to one or more of the primary causes of tissue degeneration, leading eventually to an attraction for the organic salts of the blood and an upset in local chemical equilibrium. The degenerated or dead cells of uterine glands, following chronic inflammation, disuse, or overactivity; the dead or dying cells in a chronic gastric ulcer; the local necrosis in a breast following an abscess; the scar tissue resulting from a past typhoid or tuberculous ulcer in the bowel or from an old *x*-ray burn of the skin, are all areas which have an affinity for inorganic salts of the circulation, and in each instance the dead cells show changed chemical reactions.

This theory in no way conflicts with the question of sex incidence in cancer, since it involves principally the *predisposing* causes or precancerous conditions, to some of which the female is more liable, and to others of which the male is liable.

Someone has said that "tumors occur in areas where physiological activity is most liable to pathological changes." It is not surprising then that the female, with her added physiological activities of uterus and breast which are so liable to pathological changes, should develop more tumors than the male.

The age incidence of cancer is too well known to need comment. Does it not correspond to the age incidence of those other conditions characterized by degeneration and upset chemical equilibrium of cells, such as the calcification of arteriosclerosis, and the deposit of other salts as in gout, etc.? In fact, is it not a common occurrence to see these different conditions existing simultaneously with cancer? On the other hand, all these conditions may exist, though rarely, in the young. Cancer frequently develops in the prematurely aged. Arteriosclerosis and calcification are closely associated with premature aging. Furthermore cancer occurs rarely not only in the very young, but also in the very old. In the majority of cases it seems to start just at the time when general body activity and vitality are at their maximum and localized aging, associated with a poor local nutrition and circulation, and an upset in the physiological equilibrium of the inorganic salts and other chemical constituents has taken place.

We are familiar also with the fact that cancer occurring in the young runs a more rapid and malignant course, while in the very old the process, when present, is usually slower. This may be explained by the influence of increased reproductive stimuli upon naturally active young cells on the one hand, and old devitalized cells on the other.

The fact that heredity plays a large part in cancer has not been definitely settled. While several cases occurring in a family may be considered mere examples of coincidence, there have certainly been instances in which cancer was so common in a family that the question of coincidence had to be dismissed. This must be explained either by assuming an hereditary transmission of the exact cause (or of a tendency of the body tissues to take on malignant growth), or by the influence of environment. All the members of one family may be subjected to a certain form of tissue injury, chronic inflammation, or irritation, due to their mode of life, their occupations, their habits, etc., or certain of their tissues may be specially susceptible to injury and degeneration. Their tissues when degenerated may show a special affinity for inorganic salts, or a special capacity for other chemical changes. We know that "hardening of the arteries," due to an affinity between degenerated vessel walls and inorganic salts of the circulation leading frequently to a definite calcification, may "run" in certain families. Inasmuch as the writer believes that cancer is due to a local disturbance in cell metabolism, it is interesting to note that those diseases which are generally classified as due to "disorders of metabolism," such as gout, diabetes, obesity, etc., are the ones most often associated with a history of heredity. We are inclined to believe that what would seem in many cases to be a direct transmission from parent to offspring is really more a question of "precancerous" environment or, at most, a transmission of "precancerous" conditions of susceptibility and metabolism such as we have suggested above.

Studying the tumors themselves, some authorities have found an increased amount of *calcium* or *potassium* present. Clowes and Frisbie,[13] studying carcinoma of mice, demonstrated a very high potassium content in rapidly growing tumors, while in slow developing tumors the calcium was considerably increased and the potassium greatly decreased. In a case of carinoma of the jaw and glands of the neck following an epithelioma of the lower lip, which I recently had the opportunity of seeing, I noticed that the blood from the raw, bleeding edge

of the tumor coagulated very rapidly. On further examination it was found that the coagulation time of the blood from this tumor was two and three-quarters minutes, while from the peripheral circulation in another locality in this same patient, at the same examination, the coagulation time was five minutes. Is this not of some significance in view of the fact that the calcium salts are supposed to play a large part in the process of coagulation? Is it not suggested that possibly the calcium salts were increased in the tumor region compared with the rest of the body? The patient, in this instance, died before the calcium content could be worked out.

How frequently we find an area or areas of calcification in carcinomatous, or, in fact, in all sorts of tumors! Is this merely a *result* of the degeneration of the tumor itself or may we find that the calcified area represents the end result of a gradually increasing local deposit of salts in dead or dying cells, which salts, previous to their insoluble condition had had an effect upon the absorptive and reproductive powers of the cells in the immediate neighborhood?

We must assume, from our studies on the regenerative powers of different cells and tissues, that each form of tissue in the body has its own characteristic normal rate of growth and reproduction, and that this rate is largely dependent upon the relative amount of nuclear substance present and the chemical constitution of the individual tissues. For example, we know that epithelium and connective tissue have normal rates of reproduction and growth more rapid and active than that of muscle, nerve, and bone. From this it appears that the rate of growth and malignancy of a tumor might depend as much on the tissue involved as upon the stimulus to increased growth. Would not this theory also serve to explain other tumors, such as teratoma and teratoblastoma originating apparently from displaced embryonic tissue, by assuming that some localized tissue degeneration due to one of many possible causes had taken place during the life of the embryo or fetus leading to a localized disturbance in chemical equilibrium and metabolism and eventually to a local increased cell growth?

Adami's statement, that the correct theory of the cause of cancer must cover *all forms* of new growths, has previously been mentioned. We would go a step further and say that such a theory should also be at least compatible with the theory of normal cell division, and the latter we believe to be due to biochemical phenomena.

The problem of metastases from malignant tumors has been of interest to clinicians and pathologists for many years. The writer believes they are formed by the transportation of cells from the original growth, and that conditions are fairly well maintained in the medium through which they are carried (either the lymph or the blood) which encourage their continued division and growth, and that such growth is aided by a lessened general or local tissue resistance on the part of the diseased person.

Furthermore, such a theory would help to explain the comparative sterility (so far as microorganisms are concerned) of tumor tissue, not secondarily infected, and also explain the lack of any evidence that contagion is possible.

Many workers have found that it is possible to inoculate tumors from one animal to another of the same species, but that such inoculation from an animal into a different species is much less successful. Further, it has been demonstrated that such tumors after transferrence continue to grow from their own cells rather than from those of the host. In other words the host apparently serves only as a satisfactory medium for the further division of the original tumor cells, rather than to have its own cells react as in ordinary bacterial infection. It thus is suggested that the blood, lymph, and tissues which are practically the same in the animals of one species so far as their biochemical properties are concerned, react with the tumor cells as well in one animal as in another, while the blood, lymph, and tissues of a different species usually exert a deleterious influence on the tumor cells because of the difference in chemical and metabolic nature.

In the light of this theory let us consider the symptoms associated with a cancer in general. Loss in weight and strength, and anemia are rather common in all progressing cases of cancer, and these are not necessarily associated with obstruction to food or failure in appetite. These symptoms may be brought about by a disorder and disproportion in metabolism in which the tumor cells are rapidly absorbing food and salts from the blood and lymph, to the detriment of the other tissues of the body which are not only becoming starved, but at the same time are unable to give off those waste products which they contain, thereby resulting in more or less *autointoxication*. A disorder in general metabolism caused by even a small tumor may be as great in degree, as the disorder in metabolism set up by such comparatively small bodies as the thyroid, parathyroid, ovary, or pituitary body when their physiological activities are disturbed.

These are all interesting problems for investigation. The writer has faith that the more the individual living cell, its molecular constitution and changes, and its surroundings are studied from the standpoint of chemistry, physics, and physiology, the closer will we approach the real truth concerning the cause of cancer and of all other cell activities, normal and abnormal.

Supposing that malignant cell proliferation is a result of the same influences which cause normal cell division, but that the former is due to a local disturbance or disproportion in these influences; knowing that certain inorganic salts are absolutely essential to normal cell activity and reproduction, and that abnormal cell division has been demonstrated as a result of a change in these salts and of the chemical medium; realizing that artificial parthenogenesis, or sexual reproduction of cells, may be brought about by chemical means, we must admit that not only normal cell division as seen in tissue growth, repair, and regeneration, but also abnormal cell division as is seen in cancer and all other new growths may be largely, if not entirely, dependent upon chemical or biochemical phenomena in the cell and its surrounding medium. Professor Richards[15] of Harvard says: "Both physiologist and pathologist in the study of the cell and its normal or abnormal growth must ultimately fall back upon chemical knowledge, because the action of the cell depends essentially upon the nature and quantity of the various chemical substances of which it is made. As the cell is the basis of all life, and as our bodies consist simply of aggregations of a great variety of cells, each of which is governed by chemical laws, chemistry must underlie all the vital functions."

*Summary.*—In this paper, after a brief review and criticism of the older theories, and a consideration of recent facts brought out in relation to the

subject, I have endeavored to suggest some new ideas as to the cause or causes of cancer, and have treated the subject from the broad standpoint of a combination of biology, chemistry, physics, physiology, bacteriology, and pathology, rather than to consider it from the standpoint of any one of these alone.

1. As a basis for the development of cancer, *primary and secondary "precancerous"* stages are discussed; the *primary* stage being local cell and tissue degeneration or necrosis due to all the known causes of such changes—a pathological problem involving mechanical, chemical, physical, parasitical, and physiological factors; the *secondary "precancerous"* stage being a local disturbance of chemical equilibrium, a chemical rearrangement, including an affinity of these degenerated areas for, and an attraction to them of, certain inorganic salts of the blood—a problem of local disordered metabolism involving physical and chemical conditions in cell and tissue.

2. It is then suggested that such a change in local chemical environment may influence the growth of neighboring cells by causing them to take on increased permeability, absorptive powers, and oxidations, and lead to accelerated activity and growth, even to malignancy.

3. Attempt is finally made to adapt these ideas to the important phenomena of cancer.

In an interesting editorial in a recent number of the *Journal of the American Medical Association*, on "Imagination in Science and Medicine," the following conclusion is reached: "The fabric of medical progress—indeed, of all progress—is woven from legitimate dreams to a greater extent than the 'practical' man is wont to realize or willing to admit."

It is the hope of the writer that what may seem impracticable in the above ideas may at least be looked upon as a "legitimate dream," and may stimulate further work in this interesting, though so far neglected, field of cancer research.

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## RESULTS OF OPERATION FOR GASTRIC ULCER.*

### A PLEA FOR RADICAL OPERATION WHEN OPERATION IS INDICATED.


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The discussion of the etiology, diagnosis and treatment of gastric ulcer has in recent years occupied a most prominent place in medical literature. The etiology is still obscure, although many facts now point to a bacterial invasion of the gastric mucosa as the cause of the ulceration. Mistakes in diagnosis still occur but are becoming daily less frequent. It is in regard to treatment, both medical and surgical, however, that the greatest diversity of opinion has occurred. The internists have too often felt that medical treatment was all that was required in all cases, and the surgeons have declared that operation was the only cure. In the past year, however, we find a greater unanimity of opinion prevailing, especially among those considered authorities in this field. Carefully compiled statistics have shown that from 60 to 90 per cent. of simple acute ulcers, and 50 per cent. of chronic ulcers are cured by proper and prolonged medical treatment. Mallory[16] has estimated the average mortality from medical treatment alone to be but 5 per cent., with pyloric stenosis occurring in 10 per cent. of cases, and carcinoma in 3 per cent. Many ulcers have without doubt been operated upon where operation was not indicated, and poor results have been obtained as a consequence.

The *indications for operation in gastric ulcer*, as now generally accepted by all authorities, are as follows: (1) In uncomplicated ulcer the only cases calling for operation are those in which the pain and distress are not relieved by prolonged and adequate medical treatment, and those chronic ulcers in which, in spite of careful treatment, frequent exacerbations occur. (2) The complications of gastric ulcer calling for operative interference are: (a) profuse hemorrhages which recur and threaten the life of the patient; (b) perforation, acute or chronic; (c) severe disturbances of gastric motility, as in pyloric stenosis or hour-glass stomach, whether caused by internal cicatrices or external adhesions (perigastritis). While these indications for operation are now generally recognized, we still find considerable diversity of opinion among surgeons regarding the proper operative procedure to be employed. Formerly gastroenterostomy was considered to be the ideal operation for ulcer, except occasionally in cases of hemorrhage or perforation, when the opening or bleeding point was sutured. The operation of gastroenterostomy was, therefore, perfected, and posterior gastrojejunostomy as practised today is not only a safe but a simple procedure. It was found, however, that symptoms were not permanently and often not even temporarily relieved by this operation, especially in uncomplicated cases where the ulcer was not at or

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near the pylorus. Excision of the ulcer seemed, therefore, a more rational procedure, and this was done, with the result that these stomachs frequently developed constrictions at the site of operation, resulting in hour-glass stomach and requiring subsequent gastroenterostomy. It was then that the modern, rational operation of excision of the ulcer with gastroenterostomy was generally adopted in these cases. But even in ulcer at or near the pylorus it has been shown, in a large number of cases, that gastroenterostomy alone is not curative. The relief from ulcer symptoms experienced after gastroenterostomy is now pretty generally held to be due, not to drainage, as was formerly held to be the case, but to the neutralizing of the hyperacid gastric juice by regurgitation of the alkaline intestinal juices into the stomach. This improvement, as Schur,[1] Fink,[2] and others have shown, results in the relaxation of the pyloric spasm and in decrease in size of the ulcer, both of which conditions favor the passage of food through the pylorus, and gradual closing of the gastroenterostomy opening. Conditions then are as they were in the beginning, and recurrence of all symptoms may be expected and often does occur from a few months to several years after the operation. We are told that careful postoperative treatment for many months or years is necessary to obtain the best results, and we are inclined to wonder whether many cases would not have done as well without gastroenterostomy.

On considering the facts stated above, we should conclude that, theoretically at least, excision of a gastric ulcer combined with a posterior gastrojejunostomy is the most desirable operation. I hope in this paper to prove its practical value without a doubt.

Although I have but ten cases to report, I think that a careful study of these cases will convince us of the advisability of doing radical work where operation is indicated. Of fifty-two cases of gastric ulcer seen at the Polhemus Clinic in the past year, we had an opportunity of seeing the results of operation in ten cases, reports of which are given at the end of this article. Five were seen by us before operation and referred to the surgeons, and five came to us after operation had been performed, of which number three required further operation. In addition to this, three patients on whom we considered operation advisable were lost to our notice. Thirteen operative cases out of fifty-two observed —an operative percentage of twenty-five—would seem to indicate an excessive desire on our part for operation in gastric ulcer. It is explained, however, by the fact that we probably see more advanced and complicated cases than the average observers, the cases reported having all been operated upon for complications.

Of our ten cases, nine were males. Two were under thirty years of age, five over 40 years. Of the seven plyoric ulcers (Cases I, II, III, V, VII, IX, and X) five had a simple gastrojejunostomy performed, of which three, or 60 per cent., had a recurrence of ulcer symptoms. One was simply resected and a recurrence required subsequent gastroenterostomy, which resulted in cure. One case was not properly operated upon because not recognized at operation. An ulcer of the greater curvature (Case IV) was apparently cured by gastroenterostomy alone, while one of lesser curvature (Case VI), with the same operation, had a recurrence. Excision of an ulcer of the posterior wall by the transgastric method, without gastroenterostomy (Case VIII), resulted in an hour-glass stomach, which was subsequently cured by gastroenterostomy.

It will be seen that while the surgeons operating upon this series of cases rank among the best in Greater New York, not one of these cases had an operation for excision combined with gastroenterostomy. Of the ten cases only three, or 30 per cent., were apparently cured by the first operation, while two more were cured at subsequent operations which completed the combination of gastroenterostomy and excision. An analysis of these ten cases, which distinctly indicates the necessity for this combined operation in all cases of gastric ulcer requiring operation, only serves to corroborate the testimony of many other observers. Zweig[3] reports twelve gastroenterostomies with only five good results; Albrecht,[4] forty cases operated upon by Brunner with 62 per cent. cured; Herrick,[5] six cases with three cured; Schmitt,[6] sixty-two cases with 51.6 per cent. cured, and Härtel,[7] twenty-two of Bier's cases with sixteen cures. These, with our own cases, give us reports of 149 cases, with an average of 56.3 per cent. cured—a pretty poor showing, considering the risks of operation.

Results from excision combined with gastroenterostomy are far more encouraging. The Mayos[8] report a large percentage of cures; Lockwood[9] places the percentage of cures at eighty-five; Coffey[10] reports five cases, all cured; Herrick,[5] two cases cured. Our own two cases (VII and VIII), in which this operation was finally completed at secondary operations, were both cured. Unfortunately, other writers, Kuttner,[19] Pilcher,[11] Fowler,[12] and others, do not mention the percentage of cures, but all speak of the necessity for excision. Ulcers of the posterior wall are removed by the transgastric method, first suggested by L. S. Pilcher in 1908.[11]

While it is thus seen that, from the standpoint of percentage of permanent cures obtained, excision of an ulcer with gastroenterostomy is the ideal operation, the mortality from this operation must be compared to that of the less radical procedures. It is on the strength of this that so many surgeons still decline to do the radical operation. Herrick places the mortality for gastroenterostomy at 1 to 2 per cent., for excision at 5 to 8 per cent.; Lockwood, for gastroenterostomy in skilled hands at 2 per cent., in hands of the average surgeon, at 6 to 8 per cent., and for excision at 10 to 15 per cent. The operative mortality of the Mayos,[8] in 1,000 operations for gastric and duodenal ulcer, in most of which excision was done, is 2.4 per cent., while a number of surgeons report small series of cases with no deaths. We may conclude, however, that the immediate mortality is probably from 2 to 5 per cent. higher where excision is done. This is the immediate operative mortality. But now let us consider the ultimate mortality. We have shown that 40 per cent. of the cases on which the less radical operations are done have recurrences, and either undergo future operations, with their attendant mortality rate, or are allowed to go on to serious complications. And not only this, but probably 10 per cent. of cases after simple operation develop carcinoma. Wilson and McCarty,[13] working in the Mayos' clinic, have informed us that from 70 to 78 per cent. of their cases of gastric carcinoma showed undoubted evidence of having developed on an ulcer base, and Payr has stated that 26 per

cent. of all ulcers become carcinomatous. Kuttner[13] found cancer in fourteen out of thirty cases in which he resected what he thought was a callous ulcer, and Rowlands[14] reports a similar experience in two cases. After gastroenterostomy, subsequent development of carcinoma on the ulcer base is apparently not prevented, Albrecht[4] reporting it in 10 per cent. of cases operated upon by Brunner, Herrick[5] in two out of six cases. It has not been determined whether carcinoma ever develops in the scar resulting from excision of an ulcer, but the chances of this occurring are manifestly less in the fine, thin scar left after excision than in the tough cicatrix left even when the ulcer heals. The Mayos[8, 17] do an excision of an ulcer combined with gastroenterostomy wherever possible, and have positively stated that gastroenterostomy alone is never a cure, but only a palliative measure. All authorities agree that the best results cannot be obtained without careful ulcer treatment for months after operation. Failure to do this often results in a recurrence of the ulcer symptoms, and jejunal ulcers have been shown to result from neglect of this precaution.[18]

*Conclusions.*—(1) Patients with simple uncomplicated gastric ulcer should not be subjected to operation, as has been so frequently done in the past, but only in the presence of one of the definite indications mentioned above should operation be advised. (2) In cases of gastric ulcer requiring operation, not only theoretically, but practically, both from the standpoint of permanency of cure and of mortality after operation, excision of the ulcer, combined with gastroenterostomy, is the operation of choice, and should be performed wherever the condition of the patient will permit. (3) When the patient's condition is not good, and operation is imperative, a palliative operation should be performed, with the understanding that subsequent operation may be required. (4) Thorough postoperative treatment, often neglected, should be insisted upon in all cases, and should be entrusted only to those specially qualified in this field. The surgeon should not consider that his duty is ended until the patient is in the hands of a competent internist.

*Case Reports.*—Case I: Mr. J. T., Norwegian, aged fifty-six years, a ship's cook, first applied at clinic in August, 1911. Family history negative. Had been in good health until a few months before, when he had spent a few months at the Long Island College Hospital under treatment for abdominal pain and vomiting. Treatment had consisted of rest, soft diet and lavage, and had caused relief until one week before he applied to clinic. Since then he had had severe pain in epigastrium immediately after eating, always relieved by vomiting, and following any kind of food. Bowels had always been constipated. There was not much loss of weight. Examination disclosed an anemic, somewhat emaciated man; chest negative; abdomen soft, epigastrium tender, splash to umbilicus. Removal of gastric contents 16 hours after a rice and raisin meal produced 275 c.c. of fluid contents, containing gross rice and raisins, with free HCl 42, total acidity 65, no occult blood. Stool negative. Diagnosis, chronic ulcer obstructing pylorus. Operation at the Long Island College Hospital disclosed a chronic ulcer, the size of a walnut, at the pylorus, on its lower and posterior surface, the pyloric opening being a mere dimple. A posterior gastrojejunostomy was done, and patient left the hospital 16 days later. He went back to work and felt well for 3 months, when he began to feel occasional sticking pains in the upper abdomen, with occasional cramps, and a return of his constipation. This is evidently a case of recurrence of the ulcer. He has since been lost sight of.

Case II.—Mrs. A. S., American, aged thirty-four years, applied at clinic in February, 1911. Family history negative. Had always been healthy, and had four healthy children. For four months patient had had persistent pain in the epigastric region, made worse by eating (immediately), and accompanied by belching, pyrosis, nausea, occasional coffee-ground vomiting and occasional tarry stools. The bowels were regular. Loss of 25 pounds in weight in 4 months. Examination: Chest negative. Abdomen very fat and flabby; visceroptosis; tenderness in left epigastric region; apparent thickening at lower border of stomach. Gastric contents removed 4 hours after Ewald test meal showed 30 c.c. of contents, free HCl 86, total acid 90. Stool contained occult blood. Diagnosis, gastric ulcer. Treatment: The usual dietetic and medicinal measures gave relief for a time, but the patient had frequent exacerbations of the pain and vomiting, which so distressed and weakened her that operation was advised, and she was operated upon in the Long Island College Hospital on November 10, 1911. The stomach was found to be large, the gall bladder adherent to the duodenum 4 inches from the pylorus, and a chronic ulcer, the size of a lemon, surrounded by dense adhesions, and giving evidences of a previous rupture, was found at this point, partially occluding the lumen of the gut. A posterior gastrojejunostomy was performed, and a long appendix removed. The patient made a good recovery, leaving the hospital in two weeks. She has been doing very well since, having had no recurrence of symptoms. She is still receiving ulcer treatment.

Case III.—Mr. E. K., American, aged twenty-five years, a property boy in a theater, applied to us in July, 1911. Family history negative. He had no bad habits, and had never been ill until 10 months before, since which time he had had abdominal pains coming on 15 minutes after eating, and lasting ½ to 1 hour. He had never vomited, had had morning diarrhea for about one-half the time, and complained of anorexia and dizziness. Four months before he had been operated upon at the Flower Hospital, New York City, where a pyloric stenosis was diagnosed, and a gastroenterostomy done. He showed no improvement after the operation. His stools were frequently tarry, both before and after the operation. Examination: Chest negative. Abdomen was tender in epigastric region, a little to left of median line, and a clean epigastric scar was present. This patient did not return for further examination, but his was evidently a case of recurrence of an ulcer after gastroenterostomy.

Case IV.—Mr. A. A., Norwegian, aged thirty years, single, and a waiter by occupation, came to the clinic in September, 1910. Family history negative. He had been healthy all his life except for a gonorrheal infection which was speedily cured. Had formerly drunk considerable alcohol. For two years he had had epigastric pain coming on 2 hours after eating, relieved by food, and accompanied by pyrosis, anorexia, occasional vomiting and constipation. He had once vomited blood, 2

years before. He improved somewhat on the usual ulcer treatment, but in November had a profuse hemorrhage and demanded operation. At the operation in the Long Island College Hospital an ulcer of the greater curvature was found, a gastrojejunostomy was done, and patient made an uneventful recovery. At the end of a year he is still without a recurrence of his ulcer symptoms.

Case V.—Mr. J. T., American, aged twenty-seven years, married, piano polisher, was first seen at the clinic in January, 1911. Family history negative. He had never been ill till 2 years before, when he began to have epigastric pain 2 to 3 hours after eating, radiating to right side of chest and to back of shoulder. His bowels had always been regular. He said that 2 years before he had passed some gall stones. On applying at clinic he said he had been jaundiced for 2 weeks. At operation in the Long Island College Hospital the gall bladder was found to be normal, but an ulcer was found at the pylorus, not totally obstructing it. A gastroenterostomy was done, and one year later the patient is still free from ulcer symptoms.

Case VI.—Mr. L. F., Russian, aged forty-eight years, applied at the clinic in July, 1911. Family history negative. He was well until ten years before, when he began to have typical ulcer symptoms, for which he received treatment at irregular times until operated upon at the Jewish Hospital in February, 1911. An ulcer of the lesser curvature was found and excised. For 4 weeks he felt better, when his symptoms returned. He had epigastric pain 2 hours after eating, and relieved by food He had also continuous lower dorsal pain. Examination elicited considerable tenderness in mid-epigastrium. One hour after an Ewald test meal 200 c.c. of gastric contents were obtained, with free HCl 28, total acidity 52. This case has improved considerably under medical treatment, but it is safe to say that result of operation would have been better if a gastroenterostomy had been combined with the excision.

Case VII.—Mr. E. M., American, aged forty-three years, gardener, first applied at the clinic in July, 1911. Family history, father died of gastric carcinoma. Patient had formerly been a heavy drinker, but was always healthy. Two years before, after ulcer symptoms for 3 years, succeeded by persistent vomiting, patient had been operated upon at the Long Island College Hospital, resection of a pyloric ulcer being done. He had been doing very well except for occasional "stitches" in the scar, until 5 months before, since which time he had been troubled with constipation and occasional vomiting. For 2 weeks he had been vomiting everything 2 hours after eating. He had a good appetite, but was afraid to eat. He had lost 37 pounds in 5 months, and felt dizzy and weak. Examination disclosed an anemic, emaciated man, with normal chest findings. He had a large ventral hernia through the scar of his operation, which was not tender. He was somewhat tender to the right of the umbilicus. The superficial abdominal veins were prominent. The gastric contents, removed 1 hour after an Ewald test meal, consisted of 20 c.c. of poorly chymified, bile-stained material, with an absence of free HCl and total acidity of 25. No blood was present. Stool was negative. Urine negative. Medical treatment not resulting in much relief, patient was referred back to the surgeons in August, when a gastroenterostomy was done. No ulcer symptoms have occurred since. Constipation persists.

Case VIII.—Mr. T. C., American, aged forty-three years, married, laborer, was first seen in July, 1911. Family history negative. Periodic heavy drinker, with a dry cough for many years. For 4 months he had had epigastric pain every day, and was finally operated upon at the Long Island College Hospital 7 months before he applied at the clinic. A transgastric excision of an ulcer of the posterior wall of the stomach was done at that time, but gastroenterostomy was omitted because of patient's poor condition, although plainly indicated because of the constriction caused by the removal of the ulcer. After the operation he vomited constantly for awhile, but finally improved somewhat and was permitted to go home. On applying to us he had severe pain in the epigastrium 1 to 2 hours after eating, relieved by food, and occasionally relieved by vomiting. Examination revealed a tuberculous lesion of the right apex, and an enlarged liver. Some tenderness on deep pressure over the epigastric scar. Rice and raisin meal was obtained 16 hours after eating, indicating serious obstruction, and patient was referred back to the surgeons, who found an hour-glass stomach, and did a gastroenterostomy. No further gastric distress has occurred since, but the exaggeration of his pulmonary condition has made the patient an invalid.

Case IX.—Mr. I. F., Russian, aged thirty-five years, married, cutter, first applied at the clinic in April, 1911. Family history negative. For 13 years the patient had had typical ulcer symptoms—burning epigastric pain, relieved by left-sided position, and occurring 2 to 3 hours after eating, pyrosis, occasional vomiting, fear of food, constipation and tarry stools. In November, 1910, he had been operated upon at the Beth Israel Hospital, New York City. No ulcer was found, but some adhesions about the pylorus were removed. No improvement resulting, the abdomen was again opened 8 weeks later and the appendix removed. No relief whatever resulted. All symptoms experienced before operation persisted thereafter. Examination showed the chest negative, abdomen very tender in mid-epigastrium. There was a large scar, showing evidences of infection. Gastric contents removed 1 hour after an Ewald test meal showed 200 c.c. of well-chymified material, forming three definite layers on standing, free HCl 28, total acidity 58. This patient was not seen again until recently, when he still showed undoubted evidences of an ulcer at the pylorus. This is one of the cases in which, as occasionally occurs, an ulcer was not recognized at the operation. He will require operation later.

Case X.—Mr. J. W., Russian, aged thirty-eight years, married, tailor, was first seen at the clinic in September, 1910. Family history negative. Previous history: Eleven years before he had had an abscess of the left thigh with septicemia. Venery denied. Twenty years before he had had an attack of vomiting, which had continued at intervals for 2½ years. This had been finally stopped by medical treatment, and patient had been well till 10 years before applying to us. Then he had begun to have burning, tearing epigastric pain, coming on 1 to 3 hours after eating, running through to back, and relieved by food. Patient said he could not lie on back unless stomach was full. He had consid-

erable pain at night, relieved by food. He suffered from pyrosis, but had not vomited. Constipation was present; color of stools never noticed. Examination disclosed an anemic, under-nourished man, chest negative, abdominal wall poorly developed, splash to umbilicus. Tenderness to right and above umbilicus. No dorsal tenderness. Right inguinal hernia. Gastric contents, 1 hour after Ewald test meal, showed a good chymification, free HCl 40, total acidity 90. Stool negative. The usual medical and dietetic treatment giving no relief, patient was referred to surgeons in January, 1911. Operation at Gouverneur Hospital, New York City, disclosed an ulcer near the pylorus. A gastro-enterostomy was performed, but ulcer was not excised. The appendix was removed and the hernia closed. Patient returned to clinic shortly after operation, and then had considerable pain and gas, which were relieved by one month's medical treatment. He then was well except for occasional constipation until October, 1911, when all the former ulcer symptoms returned, and patient for first time noticed tarry stools after severe attacks of pain. He also had a very severe headache. Medical treatment since then has given but slight relief, and patient is to be reoperated upon as soon as his affairs permit. His latest examination of gastric contents shows presence of much free bile, indicating patency of the gastroenterostomy opening. The free HCl is 22, total acidity 36. Stool negative for occult blood.

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## THE PASSING OF PARASYPHILIS.

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Noguchi's discovery of spirochetes in the brain in paresis closes a most interesting chapter in the history of syphilis. It was not long after the recognition of tabes as a clinical entity, mainly through the labors of Romberg, Duchenne, and Wunderlich, sixty years ago, that the frequent association of this disease with a history of syphilis was noted. But it was not till the publication of Fournier's statistics at the end of the seventies that the question of the syphilitic origin of tabes was seriously discussed. Since that time to the present day neuropathologists have been divided into two camps, one side led mainly by Fournier and Erb, who insisted that tabes was caused by syphilis, the other represented by Charcot, Westphal, and Leyden, who denied to syphilis a pre-eminent rôle in the etiology of the spinal disease.

In 1880, Mendel's monograph on the relations of progressive paralysis to syphilis appeared, and the story of the controversy that had raged over tabes was repeated in regard to paresis. In both these diseases there was on the one hand the overwhelming evidence of an intimate connection with syphilis, based on statistics covering thousands of cases, and on the other, the absence of direct proof in the nature of the anatomical lesions and even of the indirect proof which might have been based on a successful antisyphilitic therapy.

It was as a compromise between the two camps that the idea was brought forward that tabes and paresis were postsyphilitic or parasyphilitic diseases, not directly caused by the germs of syphilis, but, in the terms of the growing science of bacteriology in which pathologists were beginning to think, produced by a specific action of the toxins of the problematic organism of syphilis on certain portions of the brain and cord. This view met with considerable favor, and when the number of cases, especially of tabes, that were arrested in their course by energetic specific treatment, increased, when Erb and Nonne showed that tabetic cords sometimes disclosed small foci of distinctly syphilitic character, and when the results of the Wassermann test in these diseases of the central nervous system added force to the previous statistical evidence, the opposition to the views of Fournier and Erb seemed to weaken.

At one stroke the discovery of spirochetes in the brain of paretics has cleared away the dust of forty years of controversy. Paresis is not an indirect effect of syphilis, but is a disseminated spirillosis of the brain, is syphilis itself.

In specimens from some 200 cases of paresis, many of them poorly stained sections only, Noguchi has found spirochetes in forty-eight cases—approximately twenty-five per cent. This percentage, it is safe to predict, will be enormously increased when the technique of the staining methods is improved, and sufficient time for more thorough examinations of the affected brains has elapsed.

It is interesting to note that Noguchi's positive spirochete findings in the great majority of cases were made in comparatively rapid cases of paresis; that is, in those of short duration. If further studies show that the spirochetes are few or absent from the brain in prolonged cases of paresis, we shall have a further corroboration of the view that the nervous system is not a favorable soil for bacterial growth, that organisms which invade nerve tissue do not thrive there, and, however much damage they may do, soon die out. This is certainly the case with leprosy of the nerves in which, it will be recalled, for a long time after the discovery of the *Bacillus leprœ*, no organisms could be detected; and it was only when freshly invaded nerve stems were excised and examined that the bacilli were demonstrated. Neuritis leprosa was shown to be an effect, not of toxins, but of the direct invasion of bacilli which soon disappeared, leaving behind them

interstitial and parenchymatous degenerations which persisted, progressing till the greater portion of the nerve was destroyed.

Analogies often lead to false conclusions, but the suggestion lies close at hand that in tabes, as in paresis, the discovery of spirochetes will soon be announced, and it will be in cases of short duration, cases in which an intercurrent affection has brought the patient to autopsy early in the course of his tabes, that the organisms will be found in the cord. The common reaction of the tissues to the presence of spirochetes is the formation of connective tissue. In the skin or in the liver a scar causes no great injury to the organism. But in the central nervous system, even a small area of scar tissue produces irreparable damage, direct and progressive. The destruction of a few ganglion cells in the spinal nerve ganglia or their homologues, the Gasserian and jugular ganglia, through the direct action of spirochetes, will satisfactorily account for most of the phenomena of tabes.

The wide interest which the recent striking advances in our knowledge of syphilis—spirochetes, the Wassermann reaction, salvarsan—have stimulated, has brought about a more general understanding of the pathology of the disease. Among many new things, it has been brought home to us that the spirochetes within a few weeks of their inoculation invade every tissue of the body and, not least, the central nervous system. If they are not destroyed there by the natural agencies of defense or by treatment, irreparable injury results. The lesson is obvious; every case of syphilis should receive the most energetic treatment as soon after infection as the diagnosis can be made. The old teaching that treatment should await the development of secondary symptoms is absolutely to be condemned. It means that we should wait till the system is flooded with spirochetes! The diagnosis must be made by means of the demonstration of spirochetes in the initial lesion and the treatment by excision or destruction of the chancre and repeated doses of salvarsan followed by an energetic course of mercury instituted at once. Only thus can we hope to prevent the severe lesions of the later period of syphilis, the most terrible of which are those spirilloses of the central nervous system which we have heretofore known as parasyphilitic.

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## THE SIGNIFICANCE AND MANAGEMENT OF HYPERTENSION.

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The study of the pulse is as old as medicine, and the ominous import when it is hard and non-compressible has long been recognized. The perfection of instruments for accurately determining the blood pressure was a great stimulus to the study of hypertension. While the clinician of large experience can estimate the blood pressure by digital means with considerable accuracy, it is nevertheless universally acknowledged that much more reliable results are obtained when a sphygmomanometer is used. A number of instruments have been devised, and while differing as to the method of recording the results, all the reliable ones are equipped with an arm piece 12 cm. wide, as with a narrower cuff too high readings are obtained in those with large arms.

The factors determining the blood pressure are the energy of the heart, the peripheral resistance, the elasticity of the arterial wall, and the total volume of blood, the first two being of the most importance.

To overcome the normal vasomotor tone a certain degree of pressure is necessary. This has been spoken of as an "essential pressure" and is stated by Janeway[1] to be about 50 mm. of mercury. In addition to the so-called "essential pressure," there is a pressure of from 70 to 90 mm. over and above this, which is dependent upon the various mental, physical, and physiological activities, which may be termed the "incidental or functional" pressure.

The normal systolic pressure for men during early life is about 140, and for women of a corresponding age between 100 and 130. The diastolic pressure is from 20 to 40 mm. lower than this. The difference between the systolic and diastolic pressure is spoken of as the pulse pressure.

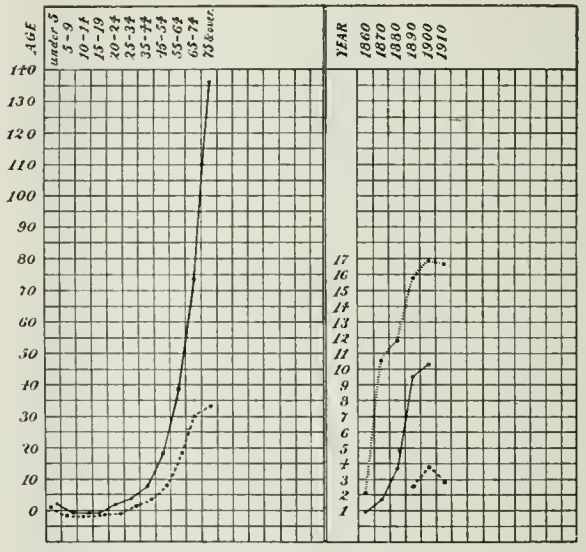


Fig. 1.—Deaths from Bright's disease (males) according to age, per million living. Continuous line, U. S.; broken line, England and Wales.




Fig. 2—Mortality from kidney disease per 10,000 living, from 1860 to 1910. New England, continuous line; New York City (Manhattan and the Bronx), cross-marked line; England and Wales, broken line.

As the peripheral resistance is increased, it is obviously necessary that the essential pressure be raised; a fact that must be fully appreciated in our efforts to reduce blood pressure. That a certain degree of hypertension is required by individuals with sclerotic kidneys is apparent upon witnessing the somewhat alarming symptoms resulting from the too liberal use of vasodilators. But we are still in ignorance as to why this is so. The theory that more blood is sent through the kidney when the pressure is raised is not borne out by animal experimentation, and it has also been shown, both experimentally and clinically, that hypertension does not increase the amount of urine. Lawrence[2] determined that an increase of pulse pressure—that is, an increase of the caliber of the vessel—had a diuretic effect, especially when it was due to a fall in both systolic and diastolic pressures. Reduction of the kidney substance beyond a certain limit results in hypertension, though how this is brought about is unknown.

One of the functions of epinephrin, the hormone secreted by the suprarenal glands, is to constrict the

muscular coats of the blood vessels. By stimulation of the splanchnic nerves after all the viscera save the adrenals had been removed, Asher[3] was able to obtain a rise of blood pressure, and of especial significance it seems was the fact that a prolonged stimulation was followed by a continuous and prolonged hypertension. Cannon[4] has also demonstrated that strong passions increase the output of epinephrin with an accompanying rise of pressure. It has long been known that strong emotion, notably anger, would sometimes induce an attack of angina pectoris in those affected with this malady, and it is related that John Hunter once remarked, in speaking of his attacks, that "his life was in the hands of any rascal who chose to annoy and tease him." He spoke truly as he died in an attack induced by a fit of anger. Thus far it has never been shown that there is an increased production of epinephrin in nephritis, but there is considerable to suggest this possibility.

The contention of Hasenfeld[5] and Hirsch[6] that hypertension without sclerosis of the peripheral arteries or kidney lesion was due to arteriosclerosis of the splanchnics, has been disproven by the experimental work of Longcope and McClintock[7]. These two observers also found that 83 per cent. of individuals presenting an hypertrophied heart and sclerosis of the abdominal aorta with narrowing of the splanchnics also had chronic nephritis. Lee[8] found a kidney lesion in 71 per cent. of fifty-three individuals subjected to an autopsy, who had had a blood pressure of over 160. In 15 per cent. of his cases a cerebral lesion was the cause of the hypertension. Only once did he find arteriosclerosis without kidney, cerebral, or cardiac lesion, other than simple hypertrophy and dilatation. He states that Sawada had never seen a tension over 170 in simple arteriosclerosis. Most interesting in this connection are the findings of Elliot and Arnott Dickson.[9] They examined 500 miners, none of whom had symptoms referring to the circulatory system. Of this number 456 had definite arterial thickening. In many instances the artery could be picked up between the fingers. Out of 116 men under twenty years of age, 100 had easily palpable arteries; yet in only 6 per cent. was the pressure 140 or over. It is evident that "arteriosclerosis is a structural change, and that hypertension is a functional derangement" which, when long continued, may result in arterial degeneration. Huchard refers to the cases of hypertension without obvious cause as being in the "presclerotic stage." In a recent series of 100 cases recently reported by Janeway[10] nephritis was the clinical diagnosis in 79 per cent.

The increase in the mortality from kidney disease in this country has been so marked during the past fifty years that it is deserving of serious thought. In the New England states it is ten times higher than at the beginning of the Civil War, and though the increase has been universal throughout the country, it is quite significant that the highest mortality is reached in New York, where "step lively" is the password. In England, where life is more tranquil, the death rate from Bright's disease has varied but little during the past decade, and is about one-third what it is in this country. The increase which begins in the teens, becomes very apparent during the twenties, and from then on jumps upward in leaps and bounds as is shown in the chart[11].

While the taking of the blood pressure should be the routine in the examination of all individuals past middle life, there are a few symptoms that especially call for the use of the sphygmomanometer. These are vertigo, sleeplessness, headache, flatulency, polyuria, dyspnea on exertion, nervousness and irritability. Flatulency in the sedentary adult should always suggest the heart as the cause, even as we look to the stomach to explain the heart pain of those in early life. Extreme nervousness is not infrequently the most marked symptom, and when it occurs in a woman we are too prone to attribute it to "the change of life," or to neurasthenia. Drowsiness and slight forgetfulness may be present and sometimes a fulness in one or both sides of the head is complained of. Janeway[10] found that visual disturbances, polyuria and headache increased the gravity of the prognosis as foreshadowing the onset of uremia, but that anginal attacks did not make the prognosis any more unfavorable. The classification of Janeway's 100 cases as to the cause of death is very interesting and somewhat of a surprise. In only 14 per cent. was cerebral apoplexy the cause, while heart failure claimed 29 per cent. and uremia 35 per cent.

One estimation of the blood pressure should never be taken as final. The public has heard just enough about blood pressure to be easily alarmed, and a slight hypertension may be wholly due to nervousness. It is moreover unwise for the patient to know the exact manometer reading, as it is almost sure to result in unnecessary worry.

*Management.*—If detected early, when the pressure is but moderately raised, we can oftentimes avert serious consequences by proper management. To this end we must search diligently for the cause. It may be overeating, business worry, or too many strong cigars. A stained blood smear may give the clue, by showing the characteristic stippling of lead poisoning. In other cases we can find no cause either in the history, the physical examination, or in the urine. But the term "idiopathic" should not be employed until the phenolphthalein kidney function test has been used. With hypertension there will frequently be found a distinct diminution in the amount of dye eliminated, and this is usually more marked in the first hour than during the second after the first appearance of the color. Not only may the elimination in the second hour be normal, but in one of my cases 30 per cent. was eliminated during the second hour and only 13 per cent. in the first. The patient died soon afterward of chronic uremia. It appears that this test gives a better indication of the kidneys' ability to eliminate the toxic substances which cause the symptoms in nephritis, than does any examination of the urine.

The dangers of long-continued high blood pressure are two-fold. The arteries becoming sclerosed may rupture, or the heat may succumb. Except for the cases where the low blood pressure is dependent upon weak heart action, the prognosis becomes progressively worse as the pressure rises. Fisher,[12] studying the mortality rate in over two thousand policyholders, with a blood pressure between 140 and 149, found it to be slightly below the normal death rate of the company at the end of two years. Five hundred and twenty-five persons insured with a pressure of 150 or over, the mortality was 35 per cent. in excess of the average, while 722 persons declined, whose pressure was 170 or over, the death rate was four times greater than that of the general aver-

age of the company. While most of us have followed cases for ten years or more with a pressure of 200, in general the duration of life is about half that time.

Every case presents three problems: Shall the patient exercise, or does he need rest in bed? What shall be his food, and what drugs, if any, are indicated?

Upon the detection of any considerable degree of hypertension, it is desirable to have the patient go to bed for a period of observation. This is particularly indicated with the very nervous. With a good heart muscle, nothing seems to be gained by keeping the patient in bed more than a few weeks.

Rest in bed becomes imperative, however, when cardiac failure threatens. A diagnosis of myocardial insufficiency is usually made with much hesitancy when the examination of the heart is negative, but the symptom that should put us on our guard is breathlessness either on slight exertion or paroxysmal in type. Janeway[10] found that cardiac failure was the cause of death in 50 per cent. of the patients in whom this was the most prominent symptom, and that 24 out of 29 who died of cardiac failure, had dyspnea as an early symptom. To await the engorgement of the liver or the development of the edema before instituting treatment to sustain the heart is like refraining from rescuing a shipwrecked man because he still has a piece of wreckage to hold to. We may detect a reduplication of the second sound or the sounds may be normal. Green[13] thinks a splitting of the second sound, heard to the left of the sternum in the third interspace, is the earliest auscultatory evidence of myocardial failure.

Disregarding the blood pressure, these patients are to be treated as cardiac cases. When the heart gives signs of regaining its tone, it is important that graduated exercise be instituted to perfect the compensation, but Nauheim baths are not to be commended.

It has been shown that blood pressure drops during sleep, especially during the first part. I have several times noted a considerable fall following a half hour's sleep in a patient with hypertension. For this reason I think it is very desirable that all such cases should rest and preferably sleep for half an hour after the midday meal. Other things being equal, it seems that the prognosis is better when a considerable drop in the pressure follows a short nap or a small dose of a vasodilator, providing this is not accompanied, in the latter case, by any unpleasant symptoms. This is not an absolute rule, however, as I have had a patient under observation for ten years whose symptoms have changed but little and whose pressure of 200 persists in spite of everything. It is worthy of note that this patient recently showed excellent kidney function with the phenolphthalein test, eliminating 62 per cent. in two hours and 53 per cent. in the first hour alone.

The importance of the regulation of the diet and the habits of the patient can scarcely be overestimated, for it is by this means we can lessen, to a considerable degree, the functional or incidental element in the blood pressure. This is particularly true when there is a strong family history of arterial disease. In the first place, the total volume of food should not be excessive, as it is not at all uncommon for these individuals to suddenly die shortly after eating a hearty meal. The drinking of much liquid with meals is to be discouraged, as it tends to increase the amount of food consumed. Exercise directly after a meal should always be interdicted because of the increase of pressure thus occasioned.

Protein food should be eaten sparingly, a small amount of meat or fish once a day being permissible as a rule. But the symptoms of chronic uremia are sufficient grounds for eliminating it from the diet for a time at least. Salt should be used in moderation, except when edema is present, when its use should be greatly restricted. Meat extractives should be interdicted and the dietary should be made up largely of cereals, milk, vegetables, and fruits.

A daily warm bath is desirable, but the cold bath is inadvisable, as it raises the blood pressure. Tobacco and coffee should be greatly restricted and preferably forbidden, while business cares should be reduced to a minimum. There should be a daily evacuation of the bowels, a daily small dose of salts being very satisfactory if costiveness is present. A brisk purge is one of the best means of controlling high pressure and it may be given two or three times a week. Excessive purging is to be guarded against, as it sometimes occasions considerable prostration due to too great lowering of pressure.

The development of any acute infection—bronchitis, tonsillitis, or even a "common cold"—in a patient with high blood pressure cannot be considered a trivial affair, for an acute nephritis is not an infrequent result. These patients should be put to bed and carefully watched. When possible, it is desirable to spend the winter and early spring months in a warmer climate.

*Drug Treatment.*—The question of drugs is considered last, not because of their relative unimportance, but to emphasize the fact that they are not the first thing to be resorted to. After the measures already outlined have been instituted, vasodilators may be tried, and if the pressure can be lowered without occasioning any untoward symptoms, they are of much value. Save in extreme cases, where immediate results are desired, it is a mistake to resort to them before regulating the diet and habits.

No one vasodilator can be used in all cases, as results will sometimes be obtained with one, but not with the other. Sodium nitrite and erythrol tetranitrate are probably the most used where prolonged effects are wanted. Lawrence[2] found that vasotonin not only did not reduce tension as its champions claimed, but in certain instances the pressure was raised. The lowering of blood pressure from venesection is very marked and persists for a much greater length of time than that from any drug. Its prompt performance may be lifesaving. In arterial crises, amyl nitrate or the spirits of glonoin dropped on the tongue may give immediate relief. I once had a patient, an old lady subject to spasm of the cerebral arteries, who required from 10 to 15 drops of glonoin before the desired result was obtained. Iodide of potassium has been extensively used in cases of hypertension, but it is not altogether clear just how it acts, nor is there unanimity of opinion as to its effect. There is some evidence that it diminishes the viscosity of the blood. There are those who assert that it lowers blood pressure and the results obtained by Matthew[14] certainly bear out the contention, but there are many excellent men who have failed to obtain this effect. It is generally conceded that it will lower the pressure in lead poisoning, and its value in syphilitic endarteritis is thoroughly estab-

lished. It is quite possible that there is an underlying latent syphilis in a much larger percentage of patients with hypertension than we have hitherto supposed. By means of the Wassermann and luetin tests, it has been shown that a very high percentage of the sclerotic changes at or near the aortic orifice are of syphilitic origin. Good results sometimes appear to be obtained by the prolonged used of a small dose of potassium iodide for many months at a time. The newer preparations of the organic iodides are apparently inferior to the inorganic salts. The thyroid preparations have some advocates, but in a very limited experience, I have not seen any good results. I have had no personal experience with high frequency electricity in these cases. It is stated that not only does the blood pressure fall, but that a feeling of well-being persists for several days. There are many who have not obtained these results. Small doses of the bromides are indispensable in the case of the very nervous.

When it is evident that the heart is no longer adequate to maintain the struggle, digitalis is invaluable. It does not increase the blood pressure in these cases, and, in fact, I have seen the pressure lowered as the heart action improved after vasodilators had been ineffectual.

*Conclusion.*—In about 90 per cent. of patients with persistent hypertension, there is a pathological process in either kidney or arteries. The essential pressure in these individuals is materially higher than in health and any attempt to reduce it to the so-called "normal" is a hazardous procedure. A considerable part of the hypertension, however, is often of the so-called "incidental" sort which is caused by the activities of life and various endogenous and exogenous toxins.

The success we achieve in the treatment of hypertension depends to a large degree on our ability to reduce this incidental pressure. And so it is that we must preach the doctrine of moderation in all things—in eating and drinking, in play and in work. We rush madly about in pursuit of that will-o'-the-wisp, success, not realizing that most of us will view from Pisgah the Land of Promise, but not enter therein because our wornout bodies will not carry us thither.

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# POSTMORTEM OPHTHALMOSCOPY: SEGMENTARY INTRAVASCULAR COAGULATION.

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Stimulated by the presence of a curious phenomenon that it fell to my lot to observe postmortem in a case in which I practised ophthalmoscopy, I proceeded to verify the findings, and have noted certain facts which may prove of considerable interest.

In the last agonal glance there usually spontaneously occurs a marked dilatation of the pupils. Sometimes, however, the dilatation is but little, if any. Kobert[1] says: "The pupils in the cadaver are usually dilated, but may in certain cases of poisoning (with belladonna, hyoscyamus, stramonium) be enormously dilated. Abnormal narrowness of the pupil in the cadaver occurs in certain cases, but by no means regularly, after poisoning by morphine or opium. After the internal administration of poisons which on instillation cause a contraction of the pupil (muscarine, pilocarpine, physostigmine, arecoline, nicotine) no case of pronounced miosis in the cadaver has ever yet been observed.

In this study, when mydriasis was present, examination was made as usual with the electrical ophthalmoscope. Both the direct and indirect methods were employed. When the pupils remained contracted after death, they were dilated with a few drops of a solution of atropine or homatropine. As was noted by Grœnouw,[2] this was feasible before iridal rigor set in, viz., three to four hours after the patient ceased to breathe. In several cases the mydriasis brought about for the purpose of antemortem examination was taken advantage of in further study.

When the eyeball is left exposed for some time after death, drying of the cornea takes place. The opacity resulting can be overcome by moistening with water. Or, when a mydriatic is needed, the latter serves a double purpose. A method which may be used to advantage is examining the fundus of the eye through a glass slide overlying the cornea, separated from it by a drop of water (Cocius). A similar method is mentioned under the name Czermak's Orthoskop.[3]

Before describing the phenomenon which constitutes the object of this paper, it will not be amiss to recall briefly the anatomy of the retinal vessels. The following paragraph from Fuchs' Textbook of Ophthalmology may therefore be quoted: "The central vessels of the optic nerve divide at the head of the nerve into a number of larger and smaller branches, which pass over its edge into the retina, where they keep on branching after the fashion of a tree trunk. They can readily be distinguished into arteries and veins. The former are of a brighter red, narrower, and run a straight course; the latter are darker, of greater caliber, and more crooked. Most frequently it happens that two main branches run upward and two downward, while only small and short twigs pass to the inner and outer sides of the disc. The region of the macula lutea is devoid of larger vessels; the larger trunks running to the outside above and below encircle it and send finer branches in toward it."

Normally, the retinal vessels are constantly filled, with slight variations in volume as result of pulsation. Postmortem, the column of blood in the ves-

sels, sustained and solid, undergoes a change which manifests itself within a limited time.

This change consists of the formation of transverse interruptions in the red color of the vessels, giving the appearance of division or striation of the blood column. These interruptions, often only few in number, are apparent chiefly in the veins and occur both near the disc and distant from it. They occur less constantly in the smaller vessels. While looking at the fundus of the eye, or during the course of frequent repeated examinations of it, one notices, from time to time, a distinct variation in the length of one or other striation. This can be made more evident by turning the head of the subject from side to side. It can be still more accentuated by pressure upon the eyeball, in both these ways modifying the retinal intravascular pressure. Firm external pressure upon the eye empties the veins in the region of the disc and also the central artery. Upon relaxation the vessels refill to their former capacity. These manipulations for a time after death, alter the size of the interruptions considerably. After about one hour no spontaneous alterations in size are noticeable. After a longer time, *i.e.* about three hours, the vascular striations are no longer influenced by manipulation and pressure. These phenomena are sometimes more manifest in one eye than in the other.

The presence of this phenomenon, I believe, depends on intravascular coagulation. Segmentary in occurrence, with consequent shrinking of the fibrin, this leads to the formation of intercoagular spaces

Fig. 2—Postmortem opthalmoscopy

containing serum. The clots in the vessels contract, and thus separate in places from each other, leaving between them the serum which is expressed in the process of congealing. In a number of cases the intercoagular intervals were not observed. In these cases, probably clotting of the distal arterial column took place *en masse;* and the serum that otherwise formed the intercoagular interval, was expressed murally. In a few of the cases presenting choked discs, no intercoagular intervals were found. Here the above-enunciated explanation is the more maintainable, drawing support from the idea that the central pressure favored coagulation *en masse*. It is likely that it is the adhesion of the fibrin to the vessel wall that finally prohibits variation by pressure, of the size of the intercoagular spaces.

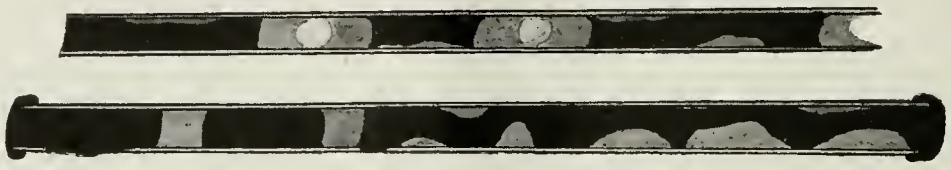

Fig. 1—Magnified in diameter.

An obvious analogy applies when we consider clotting in the large vessels of the trunk. On examination of these, the clots are found to be, so-to-speak, in segments, with serum in the intervals. When one carefully observes the peritoneal surface of the intestine postmortem or after resection, he may see that the small vessels, chiefly the venous radicals, present the interruptions corresponding to the intercoagular spaces. This appearance, due to intravascular clotting, may be found intravitam in embolism or thrombosis of the mesenteric vessels.

In the web of the frog's foot, where the blood-current affords elementary demonstration, no note is to be found of the appearance presented after the circulation ceases and intravascular coagulation takes place. I have endeavored in this relation to ascertain whether in invertebrates the blood clotting is evidenced by a microscopic picture analogous to the above described. No mention of the occurrence is made in the few volumes on invertebrate zoology that I have consulted.[4] Experimentally, I have not been able to satisfy myself that the phenomenon is to be seen.

*In vitro*, segmentary coagulation can be produced, but not without difficulty. Given the conditions comparable to those existing in small vessels, the blood clots usually with the expression of serum along the wall, not with the formation of intercoagular spaces. We made use of the glass tubes

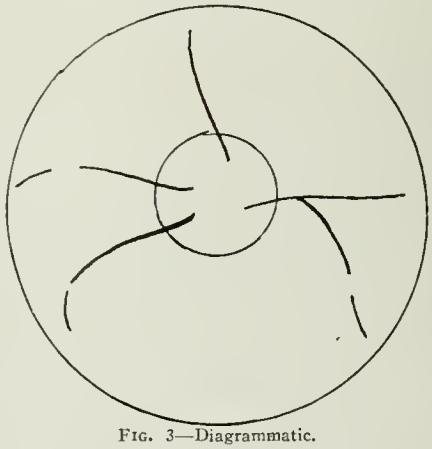

Fig. 3—Diagrammatic.

of Sabrazes and McGowan.[5] I tested this repeatedly with normal and abnormal blood, in several cases of delayed coagulability with jaundice, and in one case of hemophilia in which fibrin showed itself only nineteen minutes after the blood was drawn. Lowering or raising the temperature of

one part of the tube was of no influence. In the tubes in which the blood was allowed to flow in with interspaces of air, however, there was often intercoagular lodgment of the serum. When the glass capillary tubes were filled completely with a rapidly coagulable blood, the ends then sealed with paraffin, and the tubes suspended vertically, the irregular shrinking of the fibrin gave the appearance of segmentary coagulation. This became evident after twelve hours. (See Fig. 1.)

In a series of papers on "The Human Eye in Health and Disease as Seen with the Ophthalmoscope," C. Bader[6] writes that he has made "observations on the living and dead," and states that they "show that certain forms of cerebral disease are accompanied by visible anomalies of the optic nerve where it passes through the tunic of the eyeball. Among the anomalies the most conspicuous are disturbances in the blood vessels of the retina and changes in the connective tissue of the optic nerve." The author does not imply knowledge of the postmortem phenomenon here described. Nor has a diligent perusal of the recent literature on ophthalmoscopy revealed mention of the occurrence postmortem of segmentary coagulation.

I shall in brief present the details of the findings in three cases:

Case I.—R. F., æt. 51 years, was admitted to the service of Dr. Manges, in the Mount Sinai Hospital with a history of one week's illness. The urine showed much albumin, numerous casts, and also a high percentage of sugar. Rigidity of the neck and a slight Kernig sign prompted a lumbar puncture. The spinal fluid was purulent with numerous pneumococci. The patient died the following day with signs of consolidation at the left pulmonary base and pulmonary edema.

Postmortem Ophthalmoscopy. The pupils had been dilated with homatropine solution previously. The intercoagular spaces were first seen forty-five minutes after death (patient ceased to breathe at 1.15 A.M.) The discs were very pale but the outlines were distinct. The vessels showed the characteristic interruptions in the blood column, the intervals varying in length from one to three millimeters. For a short time after, spontaneous movement (clot-contraction probably) was seen. After one hour, this no longer took place. Three hours after death, no variation in the size of the intercoagular intervals occurred even on pressure; the picture returning the same appearance after as before manipulation. (See Fig. 2.)

Case II.—Y. T., æt. 15 years, in the service of Dr. Manges, was the victim of a rapidly progressing leukemia. Several months before, the fundi of the eyes were found to be the seat of neuroretinitis with hemorrhages.

Postmortem Ophthalmoscopy. The pupils dilated spontaneously. The discs and retinæ were of an extreme pallor, the whiteness gradually blossoming into the red color of the retinal periphery.[7] The retinal vessels were very thin and showed, with marked contrast, the intercoagular intervals. (See Fig. 3.)

Case III.—A. N., æt. 44 years, died of septicemia with *Staphylococcus aureus*[8] proven by blood culture.

Postmortem Ophthalmoscopy. In both eyes, chiefly in the right, there were noticeable with great distinctness the coagular intersections. What may appropriately be spoken of here is the formation of the intercoagular intervals in many cases very shortly after death. Thus, in the last case, while the observation was being made five minutes postmortem, there was to be seen a transverse cleavage of the upper outer retinal branch, with the formation of an intercoagular space. The poor state of the circulation which existed for hours before death can be taxed to account for this early occurrence. During this time the circulatory stasis favored later coagulation.

It is possible that the subject of my discussion may find a chapter in forensic medicine. In order to establish the exact average time for the development of the segmentary coagulation after death, and in order to define the time limits of its occurrence under differing conditions, such as after drowning, etc., such cases will have to be studied. This part of the topic must be relegated to the realm of those whose opportunities permit its fruitful elaboration.

I take the opportunity to thank Dr. Max Kahn of the Department of Biological Chemistry, Columbia University, for his encouragement and kind suggestions during the course of this study.

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## Medicolegal Notes.

**Recovery for Medical Services as Damages.**—In an action for personal injuries caused by the defendant's negligence it is held that the plaintiff can only recover the fair value of such services so far as they were rendered in the treatment of physical ills resulting from the defendant's tort, and that he cannot recover unless the services rendered were such that the doctors, if plaintiffs in an action against him, could recover and that the right of action is measured only by his legal obligation to pay them. —Hunt v. Boston Terminal Co., Massachusetts Supreme Court, 98 N. E. 786.

**Evidence—Effect of Cocaine.**—In a prosecution for unlawfully selling cocaine, the opinion of a medical expert, who was a pharmacist as well as a doctor, that a powder in a package, which he tasted was cocaine, was held to be properly admitted, although he testified that he could not tell the difference between cocaine and epsom salts, except by making actual tests. He had previously described fully the effects of cocaine and the effect of the powder he had tasted.—State v. Burno, North Carolina Supreme Court, 74 S. E. 464.

**Statements to Physicians as Evidence.**—While statements of a party injured, narrative of past conditions or suffering, made to the ordinary witness are inadmissible, a physician may testify to such statements given by a patient in relation to his condition, symptoms, sensations, and feelings, both past and present, when such statements were received during and were necessary to an examination with a view to treatment, or when necessary to enable him to give his opinion as an expert witness. The evidence is admissible for the purpose of affording the jury the means of determining the weight to be given to the opinion of the physician, not as evidence to prove the actual condition of the patient, and the jury should be cautioned upon the point.—Acme Cement Plaster Co. v. Westman, Wyoming Supreme Court, 122 Pac. 89.

**Cross-Examination.**—In a will contest case the testator's physician was examined as a nonexpert witness. He was not asked on direct examination to give any opinion touching the condition of the testator's mind. It was held that a question on cross-examination, calling for such an opinion, was properly excluded as not proper cross-examination.—Crawfordsville Trust Co. v. Ramsey, Indiana Supreme Court, 98 N. E. 177.

# MEDICAL RECORD.

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## BERIBERI AND INFANTILE BERIBERI AND THEIR TREATMENT.

PERHAPS the most interesting of all the interesting and instructive matter contained in the report of the Surgeon General U. S. Army for 1912, is that which refers to beriberi. Investigations as to the causation of the prevalent tropical disease have been during recent years numerous and exhaustive. British observers have vied with American investigators in endeavoring to trace to its source the origin of beriberi and thereby to be able to devise means to stamp out this most distressing and harmful Far Eastern malady. Although there are those who hold that the cause has been practically discovered, really this is not so obviously apparent as some would have us believe. True, it is known that among Oriental peoples, accustomed to make of rice their staple diet, beriberi will occur if the highly polished or highly milled rice is used, and that the disease will disappear or will not occur when the undermilled variety is eaten. But there is no absolute concensus of opinion among authorities as yet, with regard to the exact constituents of rice whose presence brings on beriberi. In the last report of the Surgeon General it was shown that fowls fed on highly milled rice developed a polyneuritis in the great majority of cases. It was then known that the salts of phosphorus and potassium in the rice do not of themselves prevent beriberi, but it was believed that the amount of these salts present could be taken as an index of the beriberi preventive quality of the rice. It is stated in the present report, that some samples of undermilled rice have since been examined which retained almost the entire pericarp and which undoubtedly would prevent beriberi, and yet these rices on analysis were shown to contain a percentage of phosphorus pentoxide, as low or lower than that contained in some specimens of highly polished rice which were analyzed by the same chemist. The Army Board for the Study of Tropical Diseases is therefore of the opinion that the character of the soil may affect very materially the phosphoric contents of rice as it does in the case of other grains. The Board is further of the opinion that the amount of amido-nitrogen may be as reliable an index as the salts of phosphorus and potassium.

The conclusions in a report made by the Board in January, 1912, were as follows: (1) These experiments all substantiate the theory that polyneuritis gallinarum and beriberi are caused by the deficiency of some as yet unknown substance in the food. It has been previously shown that this substance is not phosphorus. (2) Kohlbrugge's theory that beriberi is caused by an acid intoxication, which is due to the fermentation of rice by various saprophytic bacteria contained in the kernel, must be regarded as untenable. (3) To the list of substances which have been shown in previous papers of the board to be of no importance in preventing neuritis of fowls, there may now be added the following: Nitrogenous compounds, such as arginin, histidin, asparagin, and various amino acids; lipoids of the lecithin group and cholin; extract of onions. (4) The neuritis-preventing principle is absorbed by animal charcoal and the filtrate through the charcoal will not prevent neuritis. After absorption the active principle cannot be removed from the charcoal by macteration with water, absolute alcohol or ether. (5) The administration of large quantities of sodium chloride failed to produce edema in fowls suffering from polyneuritis. (6) Five cubic centimeters of the extract prepared by the board, equivalent to five grams of rice polishings, is sufficient to protect fowls subsisting upon polished rice. Two and one-half cubic centimeters, equivalent to 2.5 grams, of polishings is insufficient to confer complete protection from polyneuritis. Thus it would appear that beriberi is a disease, the causation of which is due to improper diet or rather to a deficiency of some substance in the food but that such substance has not been identified yet.

In the Philippines, there is a very prevalent disease among infants, which is looked upon by many observers as infantile beriberi. The Board has been treating some selected cases, fifteen infants, by administering to them extract of rice polishings directly while permitting them to continue breast feeding. With one exception all these infants were under three months of age. The disease has usually been ushered in with vomiting, which after a few days was followed by great restlessness, sleeplessness, continual whining and later by dyspepsia, increased cardiac action, and edema of the face and legs. Later still, oliguria and aphonia developed in many of the patients. It should be stated that the mothers of all these infants had symptoms of incipient or marked beriberi. The infants were given 20 drops of the extract every two hours while awake and the results were truly marvellous. The vomiting stopped in 24 or 36 hours. The child who has not passed any urine for several days, urinates five or six times freely. The edema disappears in the course of a few days. At the end of a week or in less time the patients are completely cured, with the aphonia, probably due to the fact that the aphonia is caused by degeneration of the pneumogastric nerves which only slowly regenerate. It can be said that this extract is a "cure" in the true sense of the word. The final conclusion of the Board is "One can hardly fail to be convinced that beriberi is due to a deficiency of some as yet unknown substance in the food and that infantile beriberi is produced in those children who receive milk from a mother suffering from such a de-

ficiency otherwise, how can the remarkable effects of the extract treatment be accounted for? We regard our work with infantile beriberi as the final link in the chain of evidence which has been built up from experiments on men and animals, and which proves that an improper diet, usually one consisting of highly milled rice, is responsible for the development of beriberi."

The public and the medical profession alike are too apt to forget the debt of gratitude which is owing to army medical officers of this country for their work in connection with tropical diseases. In Cuba, in Hawaii, in Porto Rico, and in the Philippines, the U. S. Army Medical Corps has done yeoman service in investigating and in laying bare the origin of several obscure tropical maladies and consequently pointing out a mode of successful treatment. If they succeed in eradicating beriberi, which seems probable, they will have performed another inestimable service to mankind.

## THE FRIEDMANN SALE.

The mission of Dr. Friedrich Franz Friedmann to the United States has been accomplished and our early conjectures as to its purely commercial object are fully confirmed by the announcement of the sale of the American rights in his alleged remedy to a stock company. According to the terms of the sale, this "scientist," as he is called by a New York newspaper which applauds the transaction, receives $125,000 in cash and a one-third interest in some thirty-five or forty "Friedmann Institutes" to be planted in as many States. This scheme of independent "institutes," which recalls that of another "scientist" with commercial instincts, the late Dr. Keeley, has been adopted apparently to nullify the anticipated action of the Public Health Service in forbidding the sale of the vaccine. As the stuff will be made in each "institute" and sold there it will not be carried in interstate commerce, so the Federal Government cannot interfere. When Dr. Friedmann first came to New York, we thought he had been ill advised, but we were looking at the matter from the side of ethics; we now see, looking at it from an entirely different side, that he has been very well advised.

Whether the purchasers of this secret remedy have been equally well advised time will show. They had to jump quickly, since other manufacturers had been approached and some one of them might at any time conclude a deal, and it is possible the leap was taken without the precautionary look. The results of the New York experiments would hardly seem to warrant an outlay of $125,000 for the Friedmann secret, but then the stuff has been widely advertised and moribund consumptives are hopeful and credulous. There has, as yet, been no official report on the experiments with the turtle bacillus culture in the hospitals in this city, but it is very generally known among medical men, if not among the laity, that the results have been not at all satisfactory—except to Dr. Friedmann. Reports from Berlin also are very far from giving support to the earlier statements that the patients treated there are doing well. On the contrary, many of the survivors are stated to be doing very ill. One of the reported cases, indeed, is of most serious import and it at once brings up the question whether the turtle bacillus is as innocuous as Friedmann has claimed and as has been generally believed—apparently only on his say-so. This case, referred to by correspondents of the *Southern California Practitioner* and the *Lancet-Clinic*, was that of one of those who died after treatment with the Friedmann vaccine. The autopsy showed that he had miliary tuberculosis, and fresh tubercles were found in the gluteal muscles, where the injection of the assumed nonvirulent bacilli had been made, and also in the glands receiving the lymph from that region, but the corresponding parts on the opposite side, where no injection had been made, were free from tubercles. Only one of Friedmann's New York patients, so far as we know, has yet died.

## SOME MEDICAL ACTIVITIES IN RUSSIA.

The opinion has prevailed extensively in the past and still abounds to far too great an extent that little or nothing transpires in great cities of remotely situated countries which makes for medical progress. This does not apply perhaps to the colonial cities of the great culture nations, but to such independent communities as Russia and the great South American republics. The epoch-making work of Pavlov in St. Petersburg filtered but slowly into medical teaching despite the fact that his book was well translated at an early stage of his work. It was simply a case of "nothing good coming out of Nazareth."

A letter from Moscow to the *Berliner klinische Wochenschrift*, March 31, which deals with the recent work of various Russian medical societies, will serve to illustrate the error of this attitude. The fact is only too well realized that implantation of the ureters into the intestine is almost universally followed by pyelitis or pyelonephritis. Ilyin reported to the Pirogoff Surgical Society that he had successfully met this sequel by subjecting these patients to coli vaccination. As a curative proposition the remedy was successful in three out of ten cases. Two were completely cured and another greatly improved. Ilyin next tested an immunizing or prophylactic application of the same principle upon animals with such a degree of success that in future whenever he implants ureters into the bowel he will institute prophylactic treatment of this character.

At the representative medical society of Sebastopol Kogan reported progress with the well-known Gabritchevsky protective inoculation against scarlet fever, which is a purely Russian contribution to preventive medicine dating from 1908. It was learned that reinoculation of children gives uniformly negative results, thus testifying to the protection afforded. All children inoculated between 1908 and 1911 were proved immune. An epidemic then appearing in an asylum for children, but 2 out of 62 inoculated contracted the disease. Numerous other papers show the tendency of the medical men in Russian cities to give prompt and full try outs to all new resources, whether diagnostic or therapeutic.

These cover phases of serodiagnosis and serotherapy, the use of radium, salvarsan, and neosalvarsan, various types of vaccinotherapy, tests for renal insufficiency, scopolamin narcosis, etc., many of these resources having been tested on a grand scale.

## OUTLOOK FOR DIPHTHERIA AS A FOLK PLAGUE.

A PARTIAL conquest of a pestilence appears invariably to determine new and unforeseen problems. Diphtheria, at first of epidemic incidence, only became endemic in culture countries about sixty years ago and its endemicity shows no sign of abatement. The partial conquest has been twofold. First, the bacterial cause has been demonstrated, and second, by a serum the percentage of mortality has been greatly reduced. The type of the disease has undergone no fundamental change and is now mild, now severe. The serum has prevailed over the most severe outbreaks. If as is claimed the malady is even more transmissible than before the days of Loeffler and Behring, the low percentage mortality may in time come to be offset by the total mortality; while the expense of immunization and of isolation may become almost prohibitive. The outlook for the disease was discussed last December before the Gesellschaft für Natur- und Heilkunde of Dresden (*Münchener medizinische Wochenschrift*, March 18). Conradi and Schanz each read papers on the subject. The rigid isolation practised in actual diphtheria does not avail against the insidious transmission by walking cases and carriers. Conradi knows of but one resource universally available. If every one sick or well, suspect or non-suspect should disinfect the nose, throat, and nasopharynx with some known and safe germicide, more might be accomplished within a limited time than by all other resources combined. At least this plan should be thoroughly tested.

From another viewpoint the bacteriological diagnosis, so indispensable in connection with isolation and treatment, is much prejudiced by the fact that while the true Klebs-Loeffler germ is never found outside of human secretions, the false counterpart bacillus is ubiquitous. The two can be absolutely distinguished solely through the toxicity of the former, and small laboratory animals are not always available. Schanz states that some profound reason must be to seek for this acquired toxic property of an apparently universal harmless microorganism, which even when toxic may be but mildly so and fails to act at all upon many organisms. What is the nature of the diminished resistance? To acquire this knowledge must be the task of the immediate future.

### HAS THE SPIROCHETE A RESISTANT STAGE?

NEARLY two years ago (July 8, 1911) we had occasion to mention in this column the work of Balfour concerning the spirochetosis of Sudanese fowls. Balfour had observed that under certain unfavorable conditions these spirochetes discharged small, highly refractile bodies immediately before death. Balfour was led by his researches to believe that these globules possessed the power of invading the erythrocytes and of later developing into adult spirochetes, and was inclined to ascribe to this power the resistance which such infections offer to treatment. The subject is one of the greatest importance and naturally has been taken up by a number of investigators. Recently Gleitsmann (*Centralbl. f. Bakt.*, vol. lxviii, p. 31) has published the results of a number of his experiments from which he is forced to the conclusion that Balfour was wrong. He reaffirms the reality of these bodies but asserts positively that they are not resistant forms of this particular variety of spirochete. Similar bodies have been found in the blood of healthy birds and in the end the proof must lie in their infectiousness. So far all culture experiments have been negative and Gleitsmann is of the opinion that the inoculations have given results that are at least doubtful. Whether these globules are merely degeneration forms of the organism or constitute a stage in the development of some other variety of spirochetes is a question that remains unanswered, but he firmly maintains that up to the present time there is no good proof of their infectiousness.

## News of the Week.

**Health of the Canal Zone.**—During the month of February, 1913, there occurred 42 deaths from all causes among the employees in the Canal Zone, giving an annual average death rate per thousand of 9.11. Of the total number of deaths, 27 were due to disease and 15 to violence. The annual average death rate per thousand in the cities of Panama and Colon and the Canal Zone, including both employees and civil population was 21.10 for the month, a decided increase as compared to February, 1912, when the rate was 16.33. Among employees, the deaths from the principal diseases were as follows: Abscess of liver, entamebic, 1; hemoglobinuric fever, 1; pneumonia, 4; malaria, 1; tuberculosis, 5. On December 15, 1912, all the sick camps were closed, with the exception of those located at Culebra, Toro Point, and Porto Bello. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

The report of the Department of Sanitation for the year 1912, gives the total number of deaths as 467 among 50,893 employees, or an annual death rate per thousand of 9.18. This is lower than for any previous year, and presents a startling contrast to the 1906 rate of 41.73 per thousand. The death rate among white employees from the United States from disease was 3.25 per thousand, while the total death rate for the year for this class of employees was 5.52 as against 5.14 in 1911. The inclusion of American women and children raises the death rate of Americans from disease to 4.22; and the inclusion of the officers and men of the United States Army and Marine Corps stationed on the Canal Zone and their families lowers the rate to 3.86 per thousand. The death rate from disease in the army for the calendar year 1911 was 2.66 per thousand. The principal causes of death during the year were as follows: Typhoid fever, 4; dysentery, 7; malaria, 20; nephritis, acute and chronic, 36; pneumonia, 57; tuberculosis, all forms, 70; external violence, 143. The death rate for the total population of the cities of Panama and Colon and the Canal Zone for the year was 20.49, the lowest on record with the exception of 1909 when the rate was 18.19. One case of yellow fever, on a ship

from Guayaquil, Ecuador, was isolated in Santo Tomas Hospital, and died there on July 14. With this exception, no cases of yellow fever, plague, or smallpox occurred on the Isthmus during the year. The improved conditions as regards deaths from malaria among employees in the Canal Zone continued through the year, and the admission rate to hospitals showed a steady decline from 821 per thousand in 1906, to 110 per thousand in 1912.

**Plague in Manila.**—Five deaths from bubonic plague in the city of Manila have resulted since January 1 of this year, and several new cases have developed recently. The Manila Board of Health has ordered the employment of fifty rat-catchers in addition to those already employed to free the city from the rodents.

**City Death Rate.**—For the week ending April 19 the death rate in New York was 15.22 per thousand, the total number of deaths being 1,567, as against a rate of 15.75 for the same week of 1912.

**Hospital Apportionments.**—The Hospital Saturday and Sunday Association last week apportioned funds amounting to $105,000 collected during the year, among forty-six private hospitals in New York. The distribution, according to the rules of the association was based on the number of days of free treatment given by each hospital. The largest apportionment went to the Montefiore Home, which for 166,036 days of free treatment received $10,500. Mt Sinai Hospital for 108,943 days received $9,129.42, and St. Luke's Hospital, standing third on the list, received $6,148.41 for 73,370 days. The other large hospitals received the following amounts:

| Hospitals | Free Days. | Appropriation. |
|---|---|---|
| New York | 71,279 | $5,973.18 |
| German | 51,302 | 4,299.11 |
| Post-Graduate | 44,528 | 3,731.45 |
| Roosevelt | 43,988 | 3,686.19 |
| Lincoln | 32,803 | 2,748.89 |
| Lebanon | 32,399 | 2,715.04 |
| Beth Israel | 31,751 | 2,660.73 |
| Flower | 15,551 | 1,303.17 |
| French | 14,098 | 1,181.41 |
| St. Mark's | 10,849 | 909.15 |
| Hahnemann | 10,431 | 874.12 |

A summary of the gifts under four heads follows:

| | Free Days. | Appropriation. |
|---|---|---|
| General hospitals | 587,371 | $49,323.85 |
| Special hospitals | 191,149 | 16,082.66 |
| For women and children | 266,724 | 22,376.00 |
| Convalescents and incurables | 246,197 | 17,217.49 |

**The Paul Kimball Hospital,** in Lakewood, N. J., was opened for inspection on Monday and Tuesday of this week, and for the reception of patients on Thursday, May 1.

**War on Cancer.**—Steps were taken in New York on April 22 toward the formation of a National Anti-Cancer Association on lines somewhat similar to those of the Anti-Tuberculosis Association. The leading purpose of the organization is the education of the public to recognize the early symptoms of the disease, and the general plans provide for magazine articles, leaflets to be distributed through the Department of Health, social workers, and women's clubs, and lectures. A committee on organization was appointed and cooperation of the Congress of Physicians which meets next month in Washington will be asked for. The movement has already interested a number of prominent physicians, laymen, and laywomen.

By the will of Henry Rutherford of New York, who died last February, the sum of $200,000 is bequeathed to the Rockefeller Institute of Medical Research, the "income to be applied to investigations into the causes and nature of the disease known as cancer, and the methods of its prevention and treatment."

**Dr. William H. Welch** of Johns Hopkins University was elected president of the National Academy of Sciences at the closing session of the society's fiftieth annual meeting in Washington on April 23.

**Dr. A. Sturmdorf** has been appointed Clinical Professor of Gynecology in the New York Polyclinic Medical School and Hospital.

**Memorial to Dr. Billings.**—On April 25, in the Stuart Gallery of the New York Public Library, a meeting was held to commemorate the life and services of Dr. John Shaw Billings, late director of the library, who died on March 11. Addresses were made by Dr. S. Weir Mitchell, who told of Dr. Billings' services as a surgeon in the United States Army during the Civil War; by Sir William Osler, who spoke of his work in the library of the Surgeon General's office; by Dr. William H. Welch, who paid tribute to his ability as a hospital organizer; by Mr. Andrew Carnegie, who was for many years associated with Dr. Billings in the work of the New York Public Library, and by Mr. Richard R. Bowker, representing a number of associations of librarians.

**State Health Commissionership.**—Dr. Hermann M. Biggs of New York has signified to Governor Sulzer his willingness to accept the appointment as State Commissioner of Health of New York under the proposed law now before the Legislature which provides for a reorganization of the Department of Health and gives increased powers to the commissioner.

**Gifts to Charities.**—By the will of the late Patrick Goodman of New York, St. Francis' Home for Chronic and Incurable Invalids receives $500, and the Misericordia Hospital and St. Joseph's Hospital for Consumptives, $250 each.

The Presbyterian Hospital, New York, receives $15,000, and St. Vincent's Hospital, $7,000, by the will of the late Mrs. Cornelia Eaton of this city.

A bequest of $5,000 to the Methodist Episcopal Hospital, Brooklyn, is contained in the will of the late Hannah M. Rockwell of this city.

**Dartmouth Drops M.D.**—The Trustees of Dartmouth College have announced that after the graduation in 1914 of the present junior class of the medical school the last two years of the course in medicine will be discontinued. The first two years in medicine will be reorganized into a department of the college, and work in this department will be credited toward the requirements of the degree of bachelor of science. After the completion of the two years, students will be eligible for advanced standing in other medical colleges giving the degree of M.D. The Trustees have been forced to take this step because of the impossibility of obtaining sufficient clinical material in Hanover for the practical work necessary. The school was founded in 1798, and is the fourth oldest medical college in the country. It has had many prominent men on its Faculty, the most notable being Dr. Oliver Wendell Holmes, who became professor of anatomy and physiology in 1838.

**Pennsylvania Alumni.**—At the annual dinner of the Philadelphia Branch of the Alumni Society of the Medical Department of the University of Penn-

sylvania on April 18, Dean Pepper acted as toastmaster, and addresses were made by Provost Edgar Fahs Smith, Dr. Richard C. Cabot of Boston, Dr. Lewis H. Taylor of Wilkesbarre, and Prof. John G. Clark. The following officers were elected for the ensuing year: *President,* John B. Deaver; *Vice-Presidents,* John K. Mitchell, Richard C. Norris, S. McC. Hamill, Lewis H. Taylor, Casper W. Sharples, Walter R. Weiser, and Alexander R. Craig; *Historian,* William Pepper; *Secretary and Treasurer,* G. Morris Piersol; *Executive Committee,* James Tyson, George E. de Schweinitz, George C. Stout, Allen J. Smith, Charles W. Burr, Lewis H. Adler, Jr.; George G. Ross, B. A. Thomas, Fred H. Klaer, and Henry P. Brown, Jr.

**The Ninth International Congress on Medical Hydrology, Climatology, and Geology** will be held in Madrid, Spain, from October 15 to 22, 1913. The object of the congress is to study all problems connected with the above sciences, to bring together investigators and scientific men of all countries, and to make known to all foreigners the hydrological, climatological, and geological richness of Spain. The work of organization is under the direction of a central committee composed of the officers of the congress, and all communications regarding it should be addressed to the Secretary General, Dr. Rosendo Castells, Madrid.

**State Conventions.**—The Florida State Medical Association will hold its annual meeting at Miami on May 14, 15, and 16, under the presidency of Dr. J. L. North.

The Kansas State Medical Association will meet in Topeka on May 7 and 8.

The date of the meeting of the Kentucky State Medical Association has been changed from May 13 and 14 to May 20 and 21. The convention will be held at Paducah.

The Oklahoma State Medical Association will hold its annual meeting at Enid on May 13, 14, and 15. Dr. Claude A. Thompson of Muskogee, secretary of the society, is preparing an interesting programme. Dr. James L. Shuler of Durant is the president of the society.

**American Proctologic Society.**—The fifteenth annual meeting of the American Proctologic Society will be held in Minneapolis, Minn., on June 16 and 17, 1913, under the presidency of Dr. Louis J. Hirschman. Details of the programme, etc., may be obtained from Dr. Lewis H. Adler, Jr., 1610 Arch Street, Philadelphia.

**American Gastro-Enterological Association.**—The sixteenth annual meeting of the Gastro-Enterological Association will be held at the New Willard Hotel, Washington, D. C., on May 5 and 6, 1913. Dr. J. Kaufmann of New York, president of the association, will speak on the rôle which functional disorders play in the pathology of the stomach, and a number of other papers will be presented. Dr. Franklin W. White, 322 Marlboro Street, Boston, is the secretary of the society.

**Medical Society of the State of New York.**—At the annual meeting of this Society, held this week at Rochester, the following officers were elected: *President,* Dr. William Francis Campbell of Brooklyn; *First Vice-President,* Dr. W. Stanton Gleason of Newburgh; *Second Vice-President,* Dr. Gerrit F. Blauvelt of Nyack; *Third Vice-President,* Dr. Myron Botsford Palmer of Rochester; Secretary, Dr. Wisner R. Townsend of New York; *Treasurer,* Dr. Alexander Lambert of New York. *Committee on Scientific Work,* Dr. Thomas J. Harris of New York, Chairman; *Committee on Legislation,* Dr. Lewis Knode Neff of New York, Chairman; *Committee on Public Health,* Dr. Joshua M. Van Cott of Brooklyn, Chairman; *Committee on Arrangements,* Dr. Charles H. Richardson of New York, Chairman.

*Place and Time of the Next Meeting:*—New York City, April 28, 29, and 30, 1914.

**Obituary Notes.** — Dr. Charles Hunton Knight of this city died on April 28, after a long illness. He was born in Massachusetts in 1849 and was graduated from the College of Physicians and Surgeons, New York, in 1874. He served a term as interne at Roosevelt Hospital and then was appointed chief of the house staff of the New York Hospital when its new building was opened in Fifteenth street. Soon after entering practice he turned his attention to laryngology and soon attained a prominent position among the specialists in that branch. He was a member of the American Laryngological Association, of the American Academy of Ophthalmology and Oto-Laryngology, of the American Academy of Medicine, the New York Academy of Medicine, the Medical Societies of the State and County of New York, and the American Medical Association. He was consulting laryngologist to the Manhattan Eye, Ear and Throat Hospital, the State Hospital for Crippled and Deformed Children, and the Stonywold Sanatorium. He was for a number of years professor of laryngology at the Cornell Medical College in New York City.

Dr. J. Lester Carney of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1888, and a member of the New York State and Kings County Medical Societies, died at his home on April 22, aged 62 years.

Dr. Howard C. Rice of St. Joseph, Mo., a graduate of the Ensworth Medical College, St. Joseph, in 1910, died at his home from pneumonia on April 9, aged 30 years.

Dr. James Van Brakle of Forest Hills, N. Y., a graduate of the New York University Medical College in 1865, and for forty years a practicing physician of Brooklyn, died at his home on April 14, aged 85 years.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

HEALTH WEEK—TUBERCULOSIS DISPENSARIES—USES OF TUBERCULIN—MEETING OF PANEL PRACTITIONERS — SPECTRAL ANALYSIS — CENTENARIAN MEMBER OF COLLEGE OF SURGEONS—ANTI-VIVISECTIONIST'S ACTION—OBITUARY.

London, April 11, 1913.

This week has been kept as a national "Health Week," so designated in response to the proposal of a committee organized to bring home to the people the comfort they may secure for themselves in their own homes by care and attention to hygiene. This is the second year of the movement and sixty towns have taken part in it, against forty which did so last year. In London it is next to impossible to organize so complete a combination as in provincial towns, but isolated attempts have been made. London, in fact, seems to have no unity but to be rather a conglomeration of localities with little in common. The national "Health Week" committee desire to compel public attention throughout the whole week to local conditions affecting the health of the inhabitants and their homes. Death rates, zymotic disease rates, housing problems, school hygiene, smoke

abatement; in fact, all problems relating to the person or the home are within the program, which embraces whatever concerns the health of the individual, and is to be dealt with from the personal aspect rather than that of the State.

It may be said that the "Health Week" began on Sunday, for special sermons were preached in connection with it in a considerable number of places, and the succeeding days have been signalized by "health talks," conferences, lectures, exhibitions, and so on. In some schools competition has been held for prizes offered for the best essay on "What Must I Do To Be Healthy?" In crowded places meetings for mothers and lessons on mothercraft have been given and even baby shows and competitions in baby dressing have been organized. Health literature has been distributed at various assemblies and to school children. In Dublin an exhibition was opened by the Lord Lieutenant. The same practical method was adopted at Newcastle-on-Tyne, where a section was given to tuberculosis and special features to children's needs, "babyland" home nursing, cookery, and the care of the teeth. At Lewes the Mayor and Mayoress opened the week and gave a reception at the town hall, and the Red Cross Society held demonstrations. There, too, five hundred children were enrolled as members of a juvenile branch of the Women's Imperial Health Association, which carried on the work in the town.

Princess Louise, on the 5th inst., opened the new building of the Stepney and Mile End Dispensary, linking up with several others which have been established under the movement for the prevention of consumption. The fund for this one was raised in memory of King Edward by the ex-Mayor, who stated that the subscribers included the richest manufacturers and the humblest costermongers in the borough. Tuberculosis dispensaries are being erected and supported in various districts by a central fund raised for the purpose of fighting the disease in one way, but in connection with other methods. Of these the sanatorium is perhaps the most allied, or at least lends itself most easily to cooperation, although hospitals and the poor law institutions must not be overlooked. In fact, all other bodies, official or voluntary, which deal with the prevention of tuberculosis are regarded as co-workers by the promoters of these dispensaries. But here again the difficulty alluded to above comes in of organizing any scheme of administration to cover the whole of London. The health committee of the County Council is engaged on the preparation of such a scheme and is receiving support from the local sanitary, poor law, and education authorities. The philanthropic associations will certainly be forward to aid, and the asylums' board and insurance committee should be able to assist. It is generally held that the special hospitals should be the chief centers, but I think the large general hospitals and the children's hospitals should equally contribute. The question may well be considered whether the inclusion of every existing hospital, infirmary, or other institution for the sick would not tend to restrain the spending of too much money on new buildings.

At the Hunterian Society there was a discussion on the uses of tuberculin last month in which some practical remarks were interspersed. Dr. Latham said at King Edward VII Sanatorium the number of patients who lost their bacilli was 17 more per cent. of those who had had tuberculin than of those who had not. He spoke of the manifestations of tuberculosis such as in pleurisy, peritonitis, lupus, and disease of glands, joints, and bones. He held if the real nature of pleurisy in early adolescence was recognized and treated by tuberculin in sanatoriums many pulmonary cases would be prevented. He did not attach importance to the particular brand used nor did he accept the statement that bovine preparations should be used in pulmonary and human in "surgical" cases.

Dr. Grace-Calvert emphasized the point about pleurisy which was of great importance as it was so often followed—more often than not—by definite disease. Sanatorium and tuberculin treatment were complementary, the latter stimulating the production of antibodies, the former the powers of response. Most patients were fit for tuberculin if carefully watched, if kept at rest, and if the treatment was begun with small doses. He used the intensive system as he thought it increased tolerance and abolished sensitiveness as to its alleged effect of producing cavities; if it did he preferred a ring of scar tissue round an empty cavity to a mass of dead tissue containing bacilli. Dr. Linnell opposed the use of the test as dangerous and objected to causing reactions. Gentle, therapeutic doses were better. In early cases tuberculin should not be given until after a course of rest and other sanatorium methods. Then it should be started cautiously if the symptoms had subsided. It should never be looked upon as a substitute for other treatment but was of use in suitable cases, as determined by the resistance of the patient. Sanatoriums were indispensable adjuncts to the dispensary system.

A very excited—disorderly is scarcely too strong an adjective—meeting of practitioners on the panel for London was held on Tuesday afternoon. A report was about to be read when the constitution of the committee, or those so styling themselves, was called in question. Some said it originated at a meeting in January and had been working very hard as to simplification of records, representation on local committees, the pharmacopeia and administration of the Insurance Act in all points touching the profession. Cries of "what is your status?" and the committee "is as dead as the Dodo" showed the tense feeling present at the outset and flat contradiction followed statements made by some of the speakers throughout. One who said he was not on the panel was denounced as a spy and ordered to leave. Another declared the committee was a packed body and had no authority. He was contradicted and replied by offering names. The chairman spoke amid interruptions of the heavy strain the committee had gone through and declared they did and would do their best for the benefit of the profession, that the panel had come to stay, there were 1,258 on last month and they must make the best terms they could. It was then proposed and seconded to ask the same committee to continue to act for a time. This was opposed by an amendment calling for their resignation which it was asserted they had promised. A number of other amendments were proposed and discussed amid much confusion, the chairman being obliged repeatedly to call for order. Eventually the meeting resolved to appoint a new committee to represent all practitioners at present on the panel, requested those who had acted so far to make arrangements for the election of their successors who are to take office at the end of May.

Dr. J. J. Dobbie gave a lecture on the "spectroscope in organic chemistry" at the Royal Institu-

tion on April 4. He explained how some carbon compounds allow light to pass freely, others absorb the ultra-violet, and others rays of particular wave length, so that gaps or bands appear in the spectrum. Compounds in which C. was associated in rings, *e.g.* benzene absorbed particular portions of the spectrum. This method of analysis was very successful with quinine, morphine, strychnine, and atropine, and could mostly detect small quantities—say 1/500 grain of strychnine—and distinguish one from another. Moreover the method did not change or destroy the substance so that it was available for future analysis. It could also be applied to colored substances and quite recently it was determined by spectroscope analysis that the yellow coloring matter in unbleached flour was the same as that in carrots.

Yesterday at the Royal College of Surgeons the Council accorded their congratulations to the oldest member of the college, Surgeon-Major H. B. Hinton, on attaining the age of 100 years on March 7. The names of those to whom the prizes and medals were awarded were announced and other business transacted.

An action for libel against the *Pall Mall Gazette*, brought by Miss Lind-of-Agaby, editor of the *Anti-vivisection Review*, has been going on all the week and plaintiff's case is not finished.

The senior surgeon of the Queen's Hospital, Birmingham, Mr. Jordan Lloyd, died suddenly on the 4th inst. from angina pectoris. He had been to the hospital, performed several operations, and returned home, but was seized with angina a few minutes after entering his house. He was in his sixtieth year and had long held a leading position in the Midlands. He took the Fellowship of the Royal College of Surgeons in 1880. Among many important offices held by him was that of professor of operative surgery to the Birmingham University, examiner in surgery to Durham University, consulting surgeon to the Birmingham and Midlands Hospital and the West Bromwich Hospital, and he had been president of the Midland Medical Society and lecturer at the Institute. His operative skill was proverbial and the admiration of all who once witnessed it. His health had not been so good of late but his delight in his work was unabated and I fear he did not take the rest he needed.

Dr. Samson Gemmell, professor of medicine in Glasgow University and Physician to the Western Infirmary, died on the 2d inst. at the age of 65. He was closely associated for a time with the late Sir William Gairdner of whose views he continued to be the most able exponent. He will be sorely missed for he was a great teacher and well sustained the reputation of the University and the Glasgow School of Medicine. His death is supposed to have been due to cardiac failure for he had kept his usual health to all outward appearance. He had walked home from his morning visit to the Infirmary but soon after reaching his house was taken ill and died before medical aid could arrive.

Dr. W. R. Evans of Dublin died suddenly on April 7 at a meeting of the Fellowship of Christians. His sister, a lady advanced in years, died the same night from shock on hearing of the occurrence.

Yet another sudden death is reported, that of Dr. Courtenay Milwand of Cardiff, which took place yesterday from cardiac failure.

Deputy-Surgeon-General (late) John Mills died on the 1st inst. at the age of 92. He was formerly of the Bombay Army Medical Service, which he entered in 1848, retiring in 1876.

## OUR BERLIN LETTER.

(From Our Regular Correspondent.)

THE UNION OF INSURANCE PHYSICIANS IN BERLIN—INADEQUACY OF FEES—ABUSE OF PRIVILEGES OF SICKNESS INSURANCE—SAFEGUARDING THE PHYSICIANS' RIGHTS.

Berlin, March 15, 1913.

What has hitherto been regarded as impossible has come to pass under the stress of circumstances. The insurance physicians of Berlin have combined to form an organization. The significance of this can be understood if one takes into account the fact that in no other city in Germany has there been such lack of unanimity among the insurance physicians as in Berlin. The cause is apparent. Among 3,000 physicians it is not likely that one can get entire argeement when these physicians belong to different insurance offices, as is the case in Berlin. The recent "union" is to be attributed to the new insurance law. A number of organizations of insurance physicians combined to form a central body, which established rules that will govern future dealings with the insurance offices. The main subject for discussion is that of free choice of doctor versus the inflexible panels of the insurance offices. A committee has been appointed to deal with this problem. Mall, chairman of the committee, is of the opinion that it is to the interest of the insurance physicians to stick to the union, for it is uncertain whether under the new law all of the insurance offices will survive, in which event the livelihood of the physicians belonging to these offices will be jeopardized. A million people are members of the insurance offices, which fact emphasizes the power that resides in the hands of the physicians' union, power that should not be abused, however, by any excessive demands. Only a minimum of reforms need be advocated.

The principal subject that engaged the attention of the committee was taken up by Sternberg. The average annual fee given to the physician for each member of the insurance societies is five marks. This figure is not attained so far as the majority of Berlin insurance physicians is concerned, in spite of the fact that the Berlin physician is entitled to ask a higher fee than other German physicians on account of the higher cost of living in Berlin. A rule was laid down by the committee as one to be taken up in future conferences with the insurance officers, namely, that the better situated patient should pay more than the less fortunate one. The most equitable plan suggested is to pay the physician according to the amount of dues paid by the member. These dues vary with different societies from 27 to 60 marks per year.

It is advocated that in future the fund for the payment of physicians be kept distinct from that for the payment of other expenses, so that the fees paid to the physicians will not be affected by any unusual demands upon the treasury of the insurance offices. Strict regulation should establish the limit of income as 2500 marks at which individuals are eligible to membership in the insurance offices. It is a fact that at present many persons of means are members of the insurance offices and thereby save a considerable amount of money in their medical bills. Payment should be made for all certificates that do not pertain to the affairs of the insurance office. Provision should be made for the physicians' relief from duty on Sundays and holidays. The above represent only a few of the measures of reform that came up for discussion.

# Progress of Medical Science.

## Boston Medical and Surgical Journal.

*April* 17, 1913.

1. Hand Lesions Following Injuries of the Upper Extremities. H. Bucholz.
2. Head Injuries of the Newborn. DeW. G. Wilcox.
3. Self-Mutilation by the Insane. J. M. Keniston.
4. Fecal Form. F. L. Burnett.
5. A Suggestion for Improving the Training of Ophthalmologists. W. B. Lancaster.
6. An Operation for the Cure of Vaginal Hernia. H. A. Lothrop.
7. Spastic Paralytic Ileus. R. M. Green, F. S. Kellogg, and P. L. Harvie.

**1. Hand Lesions Following Injuries of Upper Extremities.**—C. H. Bucholz states that most cases of secondary posttraumatic lesions of the hand are seen following Colles' fracture. The clinical picture in such cases is rather typical: The forearm is somewhat flattened from the pressure of the splints. On the side of the forearm there is noticed more or less edema and often a distinct discoloration from an unabsorbed hematoma. The back of the hand and especially the fingers show, as the rule, a considerable swelling. The circulation of the hand is poor. On palpation one notices the infiltration about the tendons, especially on the palmar side of the wrist and forearm and on the back of the hand and fingers. There is often noticeable an infiltration about the interphalangeal joints. In all cases the hand and fingers are very weak, and in the vast majority considerable limitation of the motion of the fingers is noticed. With an increase in the clinical symptoms one notices the retraction and tightening of the fascia and tendons of the fingers and in bad cases, of the whole hand. The following may be considered as causes of the secondary traumatic hand: The primary injury, the hemorrhage, the forcible reduction of the fragments, the faulty application of splints and dressings, too long duration of fixation, and an ill-judged after treatment.

**2. Head Injuries of the Newborn.**—D. C. Wilcox states that in the majority of cases the autopsy shows the hemorrhagic centers to be in the parietal or frontal regions, close to the longitudinal sinus. The second most frequent center is just above or below the tentorium, or in the tentorium itself. When the parietal bones are made to overlap in an exaggerated manner, as they must do in a difficult forceps case, there is an extensive peeling off of the dura on one side, and of the periosteum on the other side. This allows a blood clot to form, which, if not extensive and conditions are favorable, will be absorbed without any ill effects; but if there be a continuation of the oozing, and the circulation be somewhat impeded, an intracranial local pressure will soon be exerted, which in time causes edema, with a resulting general pressure. Again, if there be an undue overlapping of the occipital bones, one upon the other, or of occipital upon temporal or parietal, there is quite likely to be a laceration of the tentorium. But while these tentorium lacerations are the most fatal, they are by no means the most unfortunate, for many of the frontal and parietal lacerations produce clots, which by their continued pressure tend to destroy the cells of the cortex, producing a porencephaly with all its attending mental defects.

**4. Fecal Form.**—F. L. Burnett notes that if the foul and formless stool be regarded as an indication of disease, this must be one that is very generally in existence, one that is also exceedingly insidious, and though varying a great deal in degree from time to time, must usually be rather protracted in its course. As a disease of the intestine, however, it would seem to affect the gastrointestinal tract primarily; but since a stool of this kind also implies an excessive amount of intestinal putrefaction and gives rise to an indirect toxemia, it seems likely, therefore, that it may cause degenerative or sclerotic changes in many tissues and organs. The cure or prevention of this disease is not accomplished by the use of an intestinal antiseptic or indeed of any other medicine, but simply by changing the habits of the individual, and using the form of the feces as a guide.

**7. Spastic Paralytic Ileus.**—R. M. Green, F. S. Kellogg and P. L. Harvie report two fatal cases of this condition. The cause of death was intestinal obstruction from a localized tonic contraction of the circular smooth muscle fibers of the small intestine, due to surgical trauma. Kelly and Noble describe the condition under the term dynamic or hyperdynamic ileus, and state that it constitutes 2 per cent. of all cases of intestinal obstruction. From the nature of its pathology, which is probably a mechanical injury to the plexuses of Auerbach and Meissner, the most convenient descriptive term for the condition seems to be spastic paralytic ileus. The lesson to be learned from the two cases reported by the author is the immense importance of avoiding all pinching trauma to the bowel during laparotomy. In the second case, this was perhaps inevitable, in the first it might easily have been prevented. The small intestine seems much more liable than the large to spastic paralysis. Hence in appendicectomy traction should *never* be made on the ileum for the purpose of bringing the cecum into the wound, but only the large intestine should be employed for such traction.

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## New York Medical Journal.

*April* 19, 1913.

1. Vaginal Surgery. S. W. Bandler.
2. American Assassins. W. Browning.
3. The Needs of the Eye, Ear, Nose, and Throat Surgeon in General Hospitals. F. Allport.
4. Contraindications to Curetting. R. T. Frank.
5. Gastric Ulcer. E. E. Cornwall.
6. The Hematological Equilibrium in Pulmonary Tuberculosis. C. Rayevsky.
7. Chronic Interstitial Nephritis. S. E. Earp.
8. Convalescing Children. LeG. Kerr.
9. The Nose and Throat. E. Danziger.
10. Whooping Cough. S. M Wilson.
11. The Blood Catalase in Malignant Tumors. G. L. Rohdenburg.
12. Instruction in Sex Hygiene. M. S. Macy.
13. Beriberi. S. B. Doyle.

**4. Contraindications to Curetting.**—R. T. Frank states that the use of the curette is rarely necessary in abortion, is practically never necessary after labor, is harmful in pelvic inflammation, and is often fatal in ectopic gestation. Simple as the operation is in itself, it is a dangerous procedure unless controlled by careful limitations. The instrument is of value mainly for diagnostic purposes.

**5. Medical Treatment of Gastric Ulcer.**—E. E. Cornwall emphasizes the following points: Practically every case of gastric ulcer is entitled to at least one chance to recover without an operation, and most of the cases are entitled to more than one chance. The nonsurgical treatment of gastric ulcer consists essentially in keeping the ulcer as quiet as possible, which is best effected by rest in bed for at least four weeks, and a diet which will least irritate the ulcer and lease excite gastric peristalsis. Rectal feeding in the beginning is called for in all severe cases, and is desirable in the others. It may be kept up for a considerable period, especially if morphine is given in fairly large doses. The ulcer is least irritated by articles of food which are free from spices, condiments, acids, sugar, and indigestible residue, and which do not powerfully excite the secretion of the acid gastric juice. In other words, the ulcer is least irritated by a diet of modified milk and milk products, cereals, and bland fruits. Gastric peristalsis is least active if the food, in addition to being chemically unirritating, is fluid or semifluid, also if it is introduced in small quantities at a time. Speedy emptying of the stomach is facilitated by the patient lying on his right side as much as possible during the time that food is in his stomach. The return by the apparently recovered patient to ordinary diet should be very

gradual; especially moderate for a long time should be his indulgence in food that is slow of digestion, of sweets, and of animal food which stimulates strongly the secretion of acid gastric juice. Olive oil is soothing to the ulcerated stomach, is good food, and is laxative. Drugs, as such, are of very little use in the nonsurgical treatment of gastric ulcer.

6. **The Blood in Pulmonary Tuberculosis.**—C. Rayevsky states that the blood pictures obtained by the various counts reflect a great deal the processes going on in the body during disease, and in pulmonary tuberculosis they show the negative and positive phases quite as well, and in the author's opinion much better than the opsonic index; they show more elements in the blood that are of importance than the opsonic index does.

8. **Convalescing Children.**—LeG. Kerr believes that in the treatment of convalescing children in order that one may bring about a normal return to full efficiency, there should be coupled with the measures used to restore physical efficiency, such instruction, training, and well guided amusement and play as will occupy the child's increasing mental and moral powers in a measure commensurate with its increasing strength. In the home this can usually be accomplished by the careful parent, if he or she is properly instructed and the child is safeguarded against fatigue. The safest method is to use old toys, old books, and familiar things in both instruction and play, because the new always tends to excite the child, and, as inhibitory control is weakened by illness, no undue excitation is justified. In institutions, particularly in hospitals that have any considerable number of children as patients, there should be added to the hospital force a trained kindergartner or at least some one who is sufficiently trained to stimulate and guide the increasing powers for mental and moral development.

11. **The Blood Catalase in Malignant Tumors.**—G. L. Rohdenburg does not believe that the determination of catalase activity is of any diagnostic value in cases of malignant tumor. A high catalase activity occurs in conditions other than malignant tumors. Winternitz noted its occurrence in peritonitis, and it occurred in cases of acute articular rheumatism, bronchiectasis, and cerebral arteriosclerosis. A normal index is of little value; a depressed index occurs in other conditions, notably nephritis. The exact significance of the inhibition of enzyme activity, both proteolytic and catalytic, is far from clear; it is not a change distinctive of cancer alone. That inhibition is due to the formation of antibodies is at the present not proved.

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## Journal of the American Medical Association.

*April* 19, 1913.

1. Instruction in Hygiene in Medical Colleges and the Training of Health Officers. F. F. Westbrook.
2. Systematic Exercises in Postoperative Treatment. E. H. Pool.
3. A New Lumbar-Puncture Needle. J. M. Wolfsohn.
4. Hospital Clinical Records. J. S. Brotherhood.
5. Complement-Fixation Tests for Streptococcus, Gonococcus and Other Bacteria in Infective Deforming Arthritis and Arthritis Deformans. T. W. Hastings.
6. Membranous Strictures of the Esophagus of Obscure Etiology. W. Lerche.
7. Sahli's Pocket Sphygmobolometer. N. B. Potter.
8. The Bacteriology and Bacteriotherapy of Renal Calculus and Its Sequels. A. P. Ohlmacher.
9. The Treatment of Amebic Dysentery with Subcutaneous Injections of Emetine Hydrochlorid. Report of Six Cases. R. Lyons.
10. Budding and Other Changes Described by Schaudinn for *Entamœba histolytica* Seen in a Race of E. Tetragena. S. T. Darling.
11. The Relationship of Variola and Vaccinia. P. M. Ashburn.
12. Tubal Reimplantation. A New Conservative Operation for Sterilization of Women. G. De Tarnowsky.
13. The Etiology of Articular and Muscular Rheumatism. E. C. Rosenow.
14. A New and Simple Treatment for Acute Traumatic Subdeltoid Bursitis. J. M. Flint.
15. The Recently Described Parasite of Syphilis. A. K. Detwiler.
16. An Automatic Ligature-Passing Forceps. E. P. Mallett.
17. New Iris-Scissors. F. Frisch.
18. An Unusual Type of Hydrocele. B. Squier.

2. **Systematic Exercises in Postoperative Treatment.**—E. H. Pool states that while it is impossible to estimate accurately the effects of postoperative exercises, their trial in a number of cases seems to support the theory that as a result of their use the general circulation is improved, the functions of the body are performed in a more normal manner, the patients feel better, muscular weakness and atrophy are diminished, and after getting up exertion is less fatiguing and return to normal is more rapid. The two objections—possible interference with the repair of the wound and danger of embolism and thrombosis—may be disregarded. No injury to the wound is to be anticipated provided proper exercises are selected and intelligent instruction is given the patient; moreover, there is no valid reason to fear embolism and thrombosis; in fact, there is some reason to believe that the exercises may be advantageous as a prophylactic against these complications. If postoperative exercises are desirable, it is essential that their use should be systematized. A general policy may be adopted in each variety of operation as to the kind of exercises, the number of times each is to be performed, the number of times a group of exercises is to be carried out each day, and definite times for their performance. Yet in many cases the condition of the patient and the nature of the operation demand variation from a fixed routine, so that, although a definite plan may be followed in general, supervision is essential in every case.

5. **Complement-Fixation Tests in Arthritis Deformans.**—T. W. Hastings records the result of his investigations as follows: Of the typical cases of arthritis deformans, of from two to fifteen years' duration, six reacted to strains of *Streptococcus viridans*. From four of these cases the same organism was isolated from a tooth-socket after the extraction of teeth—in three of the four, complement-fixation tests were found positive before the infection of the alveolar processes was looked for. One of these cases reacted to the gonococcus also. Four cases of typical arthritis deformans reacted to the gonococcus; one of them to streptococcus also. Three cases, which were classed from the history as infective deforming arthritis, reacted to the gonococcus. The deformities were typical of arthritis deformans. In twelve cases of typical arthritis deformans the tests were negative for the Wassermann reaction, and for the gonococcus, the streptococcus and staphylococcus. Improvement under treatment with injections of vaccine, considered specific on account of the complement-fixation tests, has strengthened the supposition that some cases of arthritis deformans are infective in nature and that the infecting germ may be a *Streptococcus viridans* or a gonococcus.

11. **Variola and Vaccinia.**—P. M. Ashburn offers the following explanation of the relationship of variola and vaccina. The germ of smallpox by passage through certain lower animals loses (acquires) certain properties, and transmits its altered condition to its offspring forever. Smallpox is due to a dual and divisible virus, one part of which causes vaccinia and the specific smallpox eruption, the other part being necessary for the production of the contagious, generalized, mortal disease with a distinct preeruptive stage and initial rashes. As evidence favoring this explanation he cites examples of other viruses which seem to show a similar duality and animal poxes and variolation of animals. The three forms of smallpox not showing a pock stage, or only an incomplete one, purpura variolosa, varioloid and variola sine exanthemate, occur in vaccinated persons as often as, or more often than, in unvaccinated. Vaccinia therefore protects against the pox stage of smallpox rather than, or to a greater degree than, against the whole disease. Twenty-two per cent. of 2,601 persons who had had variola or been variolated were still susceptible to vaccinia, though immune to smallpox.

14. **Traumatic Subdeltoid Bursitis.**—J. M. Flint discusses the traumatic bursitis of the shoulder joint which has been heretofore treated in its acute stage by immobil-

izing the joint to prevent further traumatism. The method of treatment which he suggests is aspiration of the joint. This method was first used by him in a case of metastatic bursitis in empyema from acute osteomyelitis of the femur. Aspiration of the bursa yielded pus and the diagnosis was confirmed by operation. Two cases of subdeltoid bursitis following injury are reported in which aspiration afforded complete and prompt relief. In the promptness of its results the effect of the aspiration can be compared only to that obtained in a case of a ganglion or weeping sinew. There may have been more severe cases, in which frequently more repeated aspiration would be required and it is particularly desirable to know how the method would apply to chronic cases. A Luer syringe is partly filled with about 1 c.c. of sterile cocaine or novocaine solution. The latter is injected into the skin and ahead of the needle as it passes through the deltoid. The needle is pointed roughly parallel to the clavicle and directed toward the bursa lying just over the bicipital groove. The point of entrance is about 2 cm. below the level of the acromion process. As the point of the maximum tenderness lies directly over the bursa, this will prove perhaps the best guide for the needle for it is just at this point that fluid was obtained in the author's cases. After the aspiration, it may be well to fix the joint in a Velpeau bandage for a few days.

## The Lancet.

*April* 12, 1913.

1. Some General Considerations Regarding the Relations of the Medical Profession and the Public. J. A. Lindsay.
2. The Effect of General Contraction of the Peripheral Blood-vessels upon Mouse Cancers. C. Walker and H. Whittingham.
3. The Treatment of Large Herniæ. A. E. Barker.
4. Three Cases of Polycythemia. T. K. Monro. With Report on the Necropsy in One Case by J. H. Teacher.
5. A Series of 236 Cases of Total Enucleation of the Prostate Performed During the Two Years 1911-12. P. J. Freyer.
6. Congenital Stricture of Lower End of Esophagus. Case Treated by Gastrostomy, Followed by Dilatation of the Stricture Through the Esophagoscope. R. Morison and H. Drummond.
7. The Records of Four Unusual Recoveries in Cases of Mental Disease. L. C. Bruce.
8. The Lady Sedley's Receipt Book, 1686, and Other Seventeenth Century Receipt Books. L. Guthrie.

**2. Peripheral Vasoconstriction and Mouse Cancers.**—C. Walker and H. Whittingham studied the effect of injections of extract of ergot or pituitary body upon mouse cancers. They found that these two substances produced somewhat similar results to the substances used by Wassermann and by Neuberg and his collaborators. In the case of the pituitary extract, where the dose was larger and more injections were given, necrosis was induced as well as hemorrhages, and the growth of the tumor was apparently checked in a large proportion of cases. The mechanical explanation appears to explain the action of the extract of ergot and of the pituitary extract, and there is no suggestion that there was any specific action upon the cancer cells. It seems possible that something might be done towards producing an effect upon cancer cells by injecting substances which will tend to kill the cells, in combination with something which will contract the blood-vessels of the body, such as pituitary extract and extract of ergot. The passive dilatation of the vessels in the tumor should collect the toxic substance there, though, of course, it will be diffused over the whole body to a less extent. There is no evidence that Wassermann's or any of the other substances used have any specific action upon cancer cells, as the contraction of all the blood-vessels excepting those in the tumors accounts for all the results that have been obtained.

**3. Treatment of Large Herniæ.**—A. E. Barker has found in almost every case that Bassini's operation carried out with every attention to detail is quite adequate for all inguinal herniæ, great and small. In some cases where the tissues are very slack the modification of overlapping the edges of the rings described by Halsted will be found to give a thicker scar than that formed by merely drawing the edges together. The large sac need not be dissected formally out of the scrotum. At its neck, of course, it must be separated and for some little distance. To do more is to risk considerable oozing into the areolar tissue of the scrotum and a troublesome hematoma. An exception to leaving the sac intact in the scrotum is when the contents are almost universally adherent. Then it should be removed with the attached omentum. When this is separated at the neck and well drawn down it is tied off and cut across, the lower part of the sac when adherent to the omentum being taken away with it, or if non-adherent left open, as much of it being removed as was separated below the neck. It must not be forgotten that when the veins of the cord are pressed upon by the reduced rings an engorgement of the veins of the scrotum follows which favors oozing, so that all small and large bleeding points should be attended to before the wound is closed. If, in spite of this, there is still a tendency to ooze, a drain should be introduced for 24 hours, as a hematoma in this region may be troublesome. After 24 hours the drain will probably do no good, and may even form a track for the infection of the part from without. The possibility of septic matter lurking in the folds of the scrotal skin and its hair, sebaceous and sweat follicles, must always be borne in mind. Unless great care has previously been taken in the daily preparation of the scrotum to encourage these glands to act freely and carry any hidden bacteria to the surface, the danger of infection during or after operation is considerable. Frequent washings with soft soap and water as hot as can be tolerated are called for, followed before operation by the iodine solution. But the latter must be used with caution, as it produces eczema in some cases. As to the use of silver filigrees inserted deeply in inguinal herniæ to add strength to the abdominal wall, the author believes that in the large majority of cases they are unnecessary.

**4. Polycythemia.**—T. K. Monro and J. H. Teacher state that true polycythemia may be either symptomatic or primary. Symptomatic or secondary polycythemia is an erythrocytosis, analogous to a leucocytosis. It is met with in cases of chronic cyanosis associated with heart or lung disease, and it is also found in man and other animals living at high altitudes. This erythrocytosis is compensatory in its nature, and is attributable to stimulation of the bone marrow by the deficiency of oxygen. Primary polycythemia or erythremia is analogous to leucemia, there being no obvious reason why the bone marrow should show the excessive erythroblastic activity. It is known by a variety of names, including "Vaquez's disease," "Osler's disease," "splenomegalic polycythemia," "myelopathic polycythemia," "polycythemia with chronic cyanosis," and "erythrocytosis megalosplenica." These titles, however, are not all suitable, since cyanosis is absent in some cases, while in other cases there is little or no splenic enlargement. Whether the syndrome represents a single morbid entity, a disease *sui generis*, may be more definitely ascertained when a greater wealth of pathological and clinical material has accumulated, and the degree of affinity between the different types can be more precisely determined. The symptoms in the initial stage may be of a vague as well as varied character, and it is probable that the disorder of the blood may exist for a considerable time before it causes any grave or manifest disturbance of the general health. It is further probable that the disease would be found to be more common than is generally recognized if an examination of the blood were a more constant routine of clinical work.

## British Medical Journal.

*April* 12, 1913.

1. Rheumatoid Arthritis. Sir James Barr.
2. The Various Forms of Fibrositis and Their Treatment. A. P. Luff.

3. A Study of the Types of Organism in a Series of Bone and Joint Tuberculosis of Children. J. Fraser.
4. Clinical Demonstration of an Operation for Prolapsus Uteri Complicated by Hypertrophy of the Cervix. W. E. Fothergill.
5. A "Suppurating" Branchial Cyst. C. A. Robinson and G. W. Thomas.
6. Two Cases of Penetrating Wound of the Heart, Treated by Operation. E. De Verteuil.
7. The Nascent Iodine Treatment of Lupus Nasi. P. W. Bedford.

1. **Rheumatoid Arthritis.**—Sir James Barr believes that the proximate cause of this condition is a mild chronic acidosis which extracts the lime salts from the fibrous tissue, muscles, nerves, cartilages and bones. He regards this affection as a general disease, and the apparent localization in the joints as due to their structure and liability to injury. The extraction of the lime salts from the fibrous tissue causes it to swell and its vascularity to increase; with the loss of the lime salts the muscles get into a condition of irritable weakness—they waste, readily contract, cramp frequently occurs, all the deep reflexes are exaggerated, and even a state of rhythmic tremor may be set up. There is not much lime in the nervous tissue, but its abstraction leads to a marked result; neuralgic pains readily occur, and even neuritis is easily established.

2. **Fibrositis.**—A. P. Luff points out that the essential pathological change in fibrositis is an inflammatory hyperplasia of the white fibrous tissue in various parts of the body, associated with exudation and proliferation of the connective tissue elements leading to swelling and thickening of the affected fibrous tissues. This condition may undergo absorption and so completely disappear, or, if not suitably treated, it may pass on to organization with the formation of nodules and patches of thickening. The white fibrous tissues in practically any part of the body may be affected, but the liability is greater in certain situations. Muscular rheumatism is always a fibrositis. Any of the muscles may be affected. Affection of the muscles of the lumbar region constitutes one of the forms of lumbago; affection of the muscles of the neck constitutes stiff-neck; affection of the deltoid muscle constitutes "deltoid rheumatism," etc. Dupuytren's contraction is a localized fibrositis caused by habitual postural use of the hand. A fairly common form of localized fibrositis is that which affects the plantar fascia. This causes pain in the sole of the foot when the weight of the body is on it, and if not arrested is liable to lead to the development of flat-foot. A chronic fibrositis of bursæ is fairly common, and especially occurs in connection with the subacromial bursa. Chronic fibrositis of the joints is most frequently met with in the knuckle-joints and finger-joints of those engaged in hard manual labor, especially when associated with damp surroundings. A form of fibrositis to which Stockman has recently drawn attention is a chronic subcutaneous fibrosis, which when it occurs in people with a large amount of subcutaneous fat is apparently identical with the disease known as "adiposis dolorosa."

3. **Types of Organism in Bone and Joint Tuberculosis.**—J. Fraser presents the following conclusions: (1) It is possible by certain tests to distinguish between human and bovine types of tubercle bacilli. (2) A considerable proportion of bone and joint tuberculosis of children in Edinburgh is due to infection by the bovine bacillus. (3) The bovine bacillus is introduced into the body by the drinking of infected milk. (4) A considerable proportion of the cases of tuberculosis due to the human bacillus are the result of the direct infection of the child by a consumptive co-resident.

6. **Penetrating Wounds of the Heart.**—E. de Verteuil reports two cases of penetrating wounds of the heart, which were operated upon. In one of the patients the operation was successful. In the light of his experience the author puts forward the following conclusions and suggestions: A great many cases of penetrating wounds of the heart might easily escape recognition if too much reliance be placed on the failure of the probe to enter the thoracic cavity; but when it is borne in mind that a stab wound (made often with the thin blade of a knife) in that position usually has to traverse several layers of muscles, the fibers of which run in various directions, it can easily be conceived how difficult it would be to detect the opening into the chest by means of a probe. All such wounds in the vicinity of the heart which give rise to symptoms of shock and collapse (even in the absence of other signs, such as an increase of the area of cardiac dullness, etc.) should be immediately enlarged and the thoracic walls sufficiently exposed for a thorough examination for a possible wound of entry, which, if found, would necessitate an immediate operation. It is not usually known that the proportion of recoveries among the 124 cases recorded of operations of suture of the heart after injury is as high as 40 per cent. As to the use of ordinary catgut in suturing wounds in the heart, the author is quite certain that catgut is unsafe, as it is too elastic and does not hold sufficiently long to insure firm union between the edges of a muscle which is continually contracting and retracting. Iodized or chronic catgut, however, which lasts a great deal longer, may be used with safety, but the author prefers, and can see no reasonable objection to, the use of thin silk applied not too tightly. The selection of the ribs to be removed seems to me also an important consideration Complete exposure of the pericardium and heart can easily be obtained by removing the fourth and fifth costal cartilages—instead of the fifth and sixth, or fourth, fifth, and sixth as recommended by some—thus leaving the sixth rib in position as a support to the heart when the patient is in the erect position. Most writers lay much stress on the necessity of trying to avoid opening the pleural cavity—no doubt for fear of causing a pneumothorax. In both the author's cases the pleural cavity was opened and a pneumothorax caused, and in spite of their very grave condition at the time of operation, the patient's symptoms were not aggravated by this procedure. As regards the after-treatment, in addition to the usual treatment for hemorrhage, an ice-bag kept over the heart continuously and hypodermics of morphine are extremely useful adjuncts for rallying the distress and pain. Complete rest in bed for at least three weeks after the injury must be thoroughly enforced for fear of embolism.

## Berliner klinische Wochenschrift.

*April 7, 1913.*

**Warfare Against Malaria in Jerusalem.**—Brünn and Goldberg, the authors, are in charge of the Health Bureau of the Jewish Agricultural Experimental Station, founded by Nathan Straus of New York. This is intended to combat the endemic diseases and especially malaria. Two thousand blood examinations have been made, and the spleen and liver have been investigated in 600 subjects. In 21.5 per cent. there were malarial finds in the blood, while in over one-half of the visceral examinations the spleen was found altered. It is readily apparent that the prophylactic problem is bound up in the large number of cisterns or reservoirs present in the city, which serve as breeding places for the anopheles. In the absence of an aqueduct system, the only available resource is to protect the cisterns, for it is self-evident that nothing can be added to the drinking water itself. The openings from which the water is dipped are not the only means of access available to the mosquitoes. The rain water is conveyed to the cisterns by means of grooves and spouts, and it is possible for the insects to fly through the latter. The main pipe may therefore be provided with a trap which opens only during the rain. Other devices for rendering the cisterns mosquito proof are being installed. Thus far

200 of the reservoirs have been thus treated. Naturally it is much too soon for decisive results, and in fact the subject is decidedly in the experimental stage, for it may not come about that the cistern campaign will in itself dispose of the mosquito outright. Other measures are being used collectively (fumigation, petroleum, quinine).

**Fowl Sarcoma and Its Filtrable Virus.**—Rous and Murphy of the Rockefeller Institute, who have written many articles on this subject, conclude their present study as follows: They have already acquired more than a suggestion as to the cause of malignant tumors. The author's finds give a rational explanation founded on facts of certain of the mysterious characteristics of the latter. The peculiarities of their origin, the significance of cell destruction by other cells for their etiology, growth and distribution, the behavior when transplanted are all in accord with the supposition that an agency is concerned, the activity of which may be inhibited by various conditions which have something in common with the cause of fowl tumor. The causal nexus, however, is probably complicated in its nature. In any event the theoretical objections to the external origin of cancer have been strongly affected by the finds in fowl sarcoma.

**Etiology of Hydrophobia.**—Proescher of Pittsburgh sums up his studies of rabies virus as follows: Clinical and experimental studies alike show the probability that the cause of rabies may exist in a mobile form. It is known that the virus migrates exclusively along the nerve paths and that this movement cannot be passive. One therefore thinks at once of spirochetes. It is probable from analogy that during the stage of repose of the spirochete cocci are formed which may be able to give rise to further spirochetes. Cocci which correspond in part to these are found in abundance in the antiformin sediment of the salivary glands. The apparent incongruity of these finds may be explained by the recent claim that spirochetes must henceforth be classed as bacteria. The question can readily be settled should attempts to cultivate these cocci and cause animal rabies be successful.

## Deutsche medizinische Wochenschrift.

*March 27, 1913.*

**The New Remedies of the Past Year.**—Biberfeld states that the accessories of 1912 were not numerous, which is in some respects a healthy sign. With fewer remedies more time may be devoted to the study of each. He regards the work on opium derivatives as the most valuable. Morphine is still the most important of these. It is claimed that narcotin, long regarded as inert *per se*, is useful for modifying the action of morphine. A mixture of narcotin with meconate of morphine has been placed on the market under a proprietary name. It contains 30 per cent. of the alkaloidal morphine and is used in a threefold dose. Morphine has further been associated with its antagonist thebain and other opium alkaloids in proprietaries in the form of solutions. These contain 1 per cent. morphine and smaller proportions of thebain, codeine, narcotin, papaverin, and narcein. The mixture, therefore, combines morphine with both synergists and antagonists. Synergism is also sought in combining veronal with codeine as a hypnotic and with quinine as an antitussive in pertussis. Several synthetics closely related to veronal are being widely advertised as competing hypnotics. New combinations of bromine are still being introduced, one of the latest containing borneol. There has been unusual activity in devising new antiseptics, at some of which the author looks askance and none of which seems to have attained much vogue. The individual find of the year irrespective of class is doubtless neosalvarsan.

**Serological Investigations in Lepers.**—Möllers sums up the results of his work at the Koch Institute (Berlin) as follows: The serum from patients with tuberous or mixed leprosy gave a complement forming reaction in tuberculin in from 95 per cent. to 100 per cent. On the other hand anesthetic or nervous lepers reacted thereto only to the extent of 25 per cent. In the blood serum of lepers there was more pronounced autibody formation with bacillary emulsion than with culture fluid preparations. The pressure of these tuberculous antibodies in leper blood does not justify the conclusion that such lepers are actually tuberculous as well. The clinical significance of the phenomenon thus far is that reaction to tuberculosis is a measure of the severity of the leprous infection.

**The Appendix in Röntgen Pictures.**—Cohn states that what we know in this field is the result of accident despite the intense desire and continual efforts of years in this direction. A Russian physician, Grigorieff, chanced to be the possessor of a retina extremely sensitive to *x*-ray shadows. After years of observation and using his so-called trochoscope he announced that the appendix had a proper motion and that it rhythmically filled and emptied itself. The author has been able to witness this phenomenon himself. In order to apply the method the patient is given the usual bismuth test meal and repeated flashlight negatives taken. The technique is very complicated, that of the author differing notably from Grigorieff's. His conclusions are as follows: The appendix may be studied with *x*-rays in the majority of cases. The investigation is a methodical one. While it is a part of a routine examination of the intestines it also holds a special position *per se*. We seek to determine the site and mobility of the organ as well as its special physiological function. The appendix is not filled synchronously with the passage of chyme from the ileum into the colon. It is, therefore, probable that retrograde movements of the colon are the principal factor in the filling of the appendix. When the latter cannot be emptied stagnation comes about. Shadows are visible at times in the appendix long after the colon is seen to be empty.

**Intraperitoneal Application of Oil.**—Momburg, on a basis of personal experience, would warn others from further application of oil in the peritoneal cavity. Oil injections in every kind of application are prejudicially to the organism, and in weakened individuals may exert a critical action. The good results are problematical and cannot offset the injury done. The author would anoint the site of the incision in order to guard against possible soiling by stomach or intestinal contents. In order to prevent postoperative peritonitis we have other and safer resources, such as the hot-air chest.—*Deutsche medizinische Wochenschrift.*

**A Serous Cyst Evacuated from the Ramus of the Mandible.**—L. H. McGavin reports the case of a man, aged thirty, in whom three years ago a swelling developed in the left parotid region; as it steadily increased in size it was incised. Nothing but blood was evacuated. The swelling was not painful and after operation again increased in size. On examination the tumor was about the size of a tangerine, it was firm in consistency, and evidently deep to the masseter muscle. There was no facial paresis, although the tumor lay in the line of the facial nerve. In the center fluctuation could be felt; no bone cracking was detected. All the teeth of upper jaw except the wisdom tooth were present; this latter had been removed a year previously. Under chloroform an incision, following the angle of the jaw, was made, and a flap containing the masseter was turned up. The mass proved to be a cyst in the upper part of the ramus of the jaw, which was expanded to a thin shell, and contained clear yellow serous fluid. The lining membrane was removed. Microscopical examination gave no indication as to the nature of the cyst.—*Proceedings of the Royal Society of Medicine.*

## Insurance Medicine.

**The Local Medical Examiner and Life Insurance.**—In a paper read before the Ottawa Valley Medical Association, B. G. Connolly tells of the position occupied by the local medical examiner in life insurance work. Life insurance, not only through great companies, but through fraternal societies, has assumed a tremendous importance in the economy of the life of today. The success of all insurance companies depends on three factors: Wise medical selection, charging of proper premiums, and honest, prudent management. The medical department is the one considered here. The medical examination is the foundation stone of insurance work, and on the honesty, integrity, and proficiency of the examiner depends, in a great measure, the success or failure of a company. How can the medical examiner most satisfactorily discharge the service expected of him is a pertinent question. He, through his examinations of the applicants, represents the company, and he is bound to give to the company an exact picture of the physical condition of the applicant as he finds him, and on that picture depends the acceptance or rejection of the applicant by the company. Insurance companies furnish forms consisting of two parts and containing a number of questions, the intelligent replies to which are the means by which the head office judges of the eligibility of the applicant for insurance. Part I. is filled out by the applicant and relates to his past history and family history. Part II. is filled out by the medical examiner and answers all questions relating to the present condition of the applicant. If all questions are answered satisfactorily, the medical examiner's work is done; but often the replies to the first part of the report are vague or incorrect. The second part is rarely questioned. An applicant may profess vague knowledge of his family history, or his own early life. A certain mental bias, usually unconscious, obtains in answering these questions by the applicant, as he desires a favorable decision and thus colors his statements. Here is where the tact and intelligence of the medical examiner are required, for by patience he can elicit correct answers, saving delay not only for himself, but for the agent and the applicant. In the preparation of his report, the medical examiner has two powerful aides, the sphygmomanometer and urine analysis. The importance of blood pressure has long been recognized and by the use of the sphygmomanometer it can be accurately registered. Certain companies make its use obligatory where the applicant is over 40 years of age, and when the reading shows the pressure to register over 150 mm. of mercury, the applicant is rejected, it being believed that the high pressure is a forerunner of albuminuria or apoplexy in a few years. The importance of correct urine analysis is so generally understood that it is scarcely necessary to refer to it. —*Canadian Practitioner*, December, 1912.

**Medical Considerations in Insurance.**—Dr. Böhler says that the insurance examiner is not interested as much in knowing *how many* men die at fifty or at sixty, of pneumonia or of any other disease, but *which* men die at such and such an age, and of such and such a disease. People do not usually die of an affection because it is very severe, but because their resistance has become diminished in one way or another, and it is this diminution of resistance that must be judged by the examiner. The following factors enter in such a judgment: heredity of the applicant, past life, dangers of future occupation, his apparent power of resistance at time of application, etc.

Heredity may mean inheritance of disease (e.g. syphilis) or simply of predisposition (e.g. tuberculosis). Obesity, diabetes, gout, arteriosclerosis are frequently supposed to show a predisposing moment due to heredity. Hemophilia is strictly an inherited disease. Mental disturbances frequently run in families. Mental worries, business troubles, etc., must be considered in estimating the effects of past life. Syphilis or tuberculosis in the past, though apparently cured, should from the insurance standpoint always lead to the classification of the applicant as a substandard risk.

In estimating the future risks in applicant's life, the nature of his occupation should be considered: miners, bakers, metal workers, liquor dealers, all show a higher mortality than the average. If some hereditary predisposition is present in such applicants, they become substandard risks. Thus, a baker with a family history of tuberculosis runs a grave chance of dying from this disease. Syphilis must be especially carefully kept in mind; even though modern methods of treatment have shortened its early manifestations, we know that the vascular system may be early affected by the disease and lead to premature senility.

Of late, the special risks of tropical sojourn have become an actual problem in insurance, for it must be granted that, however healthy he may be on arrival, almost every European finally is affected by the tropical climate. Estimation of each individual risk is of importance in these applicants more than in any other class.

Modern insurance methods have changed the estimation of applicants a great deal by the introduction of term insurance. The frequent problem for the examiner is, nowadays, not how long will an applicant probably live, but whether he will live the number of years to the conclusion of his term of insurance, and especially whether there is any probability of his dying within a short time after insurance has been effected.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, Band XIII, Heft 1.

**Early Life Insurance.**—In an article, entitled "Notes on Life Insurance Examinations," William J. Stapleton, Jr., gives a brief history of life insurance. Life insurance, as we know it, is an offshoot of marine insurance. In the early days, the success or failure of a voyage depended largely on the personal qualities of the master; the owners of the ship and cargo took out insurance on the master so that in the event of his death they would be recompensed. The earliest known policy was taken out on the life of one William Gybbon in London, the year 1583. The earliest life insurance company of which we have definite information was the Mercer's Company of London, established in 1699. The first company in the United States was founded in Philadelphia, in 1758, and was called the Presbyterian Annuity and Life Insurance Company. Until 1840, there was little business done; during the next ten years, up to 1850, several of the companies now doing business were organized, namely, the Mutual Life of New York in 1842, the New York Life in 1845, and others. Now there are several hundred companies organized to transact the various kinds of insurance business.—*Journal of the Michigan State Medical Society*, April, 1913.

# Book Reviews.

A Text Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania; Gynecologist to the Howard, the Orthopedic, and the Philadelphia Hospitals, etc. Seventh edition, revised and enlarged, with 895 illustrations, 53 of them in colors. Price, $5.00. Philadelphia and London: W. B. Saunders Company, 1912.

In the seventh edition of this work a more logical arrangement has been adopted, the physiology of the process of generation preceding the pathology. As in former editions the diseases of women and their treatment are included. The article on the "Diseases of the Breast" has been extended. The section devoted to operative technique is well written and the steps of the various operations are thoroughly illustrated. A considerable part of this section is devoted to gynecological operations, such as the repair of the cervix and perineum, hysterectomy, salpingo-oöphorectomy, and operations for retrodisplacements of the uterus. Short articles on breast operations and the after-treatment of abdominal operations are included. The book has been well brought up to date. Many new illustrations have been added. Some of the old ones have been discarded, while others have been modified. Dr. Hirst has maintained the high standard of the former editions, and his book remains valuable and of service to both the medical student and the man in active practice.

Experimental Physiology. By E. A. Schäfer, F.R.S., Professor of Physiology in Edinburgh. Price $1.35 net. London, New York, Bombay, and Calcutta; Longmans, Green, & Co., 1912.

This volume is an outgrowth of the author's handbook for classwork in Practical Physiology which has been enlarged and furnished with new illustrations. A large part of the text is given over to the description of apparatus and the directions for the performance of experiments are very condensed. With the exception of two pages devoted to secretions, practically all the work is designed for frogs. For this reason many of the exercises by which the respiration, circulation, etc., are investigated in mammals, are entirely omitted. This fault renders the book rather incomplete for the use of the American schools and in fact it seems more particularly intended for courses given under the restrictions which are in force in Great Britain to-day.

Starving America. By Alfred W. McCann, Member of Vigilance Committee, and Associated Advertising Clubs of America. Price $1.50 net. Cleveland and New York: F. M. Barton, 1913.

As a chemist, as manager of a large department store having a grocery department, and later of a large food industry, Mr. McCann came in contact with food inspectors, chemists of the National and State departments, food manufacturers, importers, jobbers, and commission men. He is thus in a position to know the inside and his book is an exposé of food deficiencies and adulterations. He is a great advocate of whole grain foods and believes that the mineral constituents of foods have not been duly appreciated. Our white flour and prepared cereals are robbed of their mineral constituents and this deficiency together with the adulteration of other food stuffs he believes to be indirectly responsible for many of the deaths of infants and children and for the large number of undernourished and defective children and tuberculous, anemic, and neurasthenic adults. One chapter, devoted to the presentation of facts concerning the sixteen principal elements found in natural food, is written specially for the physician. The book will undoubtedly be instrumental in awakening a wider popular interest as to the need of better pure food laws and their more drastic enforcement.

The Illness and Death of Napoleon Bonaparte (a Medical Criticism). By Arnold Chaplin, M.D., (Cantab.), Fellow of the Royal College of Physicians. With three illustrations. Price 70 cents. London: Hirschfeld Brothers, Limited, 1913.

The author of this little volume is justified in adding to the already voluminous Napoleonic literature by the fact that an account of the last illness and death of Napoleon has not thus far been written which is not lacking in accuracy and proportion, probably because the historian rarely possessed the equipment necessary for dealing with a complicated medical problem. The account of the last illness and death of Napoleon, as related by Dr. Chaplin, is based on the "Lowe Papers" in the British Museum. He compares three different accounts of the post-mortem examination as written by three of the physicians present on that occasion and concludes that Napoleon died of cancer of the stomach which most likely originated in a chronic ulcer and remained undiagnosed until the post mortem was made. Of the medical men who attended Napoleon not one had any correct idea of the true nature of the disease, and, furthermore, political bias of necessity divided them into two opposite camps and obscured the issue. The author shows what he considers conclusive evidence that Napoleon was not epileptic, as has generally been supposed. Short biographies of the attending physicians and an account of the exhumation of the body in 1840 are also included.

The Child. By The Hope Farm Man. New York: The Rural Publishing Company, 1912.

This story has no plot that can recommend it as a romance, but is merely a record of everyday events in a poor farming community of the "hill country." A childless couple take a very unpromising waif into their home who brings something of the truth and faith and joy of childhood into their narrow and unsatisfied lives. The author makes this incident serve to show that a home, even a humble one, is much better for the dependent child than institutional life, and how a rural community impoverished by the middleman may be awakened to the advantages of organization and the spirit of fraternity. The spirit and the thought of the book will appeal to those who find pleasure in the simple things of life and to those who are interested in the problems presented. The story possesses more literary merit than the modest author would have us believe.

Obstetrics: a Text Book for the Use of Students and Practitioners. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-Chief to the Johns Hopkins Hospital; Gynecologist to the Union Protestant Infirmary, Baltimore, Md. Third enlarged and revised edition. With 16 plates and 668 illustrations in the text. New York and London: D. Appleton & Company, 1912.

It is a pleasure to review a book such as this, which combines many excellent features in its literary, scientific, artistic and mechanical details. There can be no question that Williams' "Obstetrics" ranks among the best. The present edition represents a thorough revision, the most important changes being found in the chapters upon the development of the ovum, the organic changes incident to pregnancy, pubiotomy, and cesarean section, pernicious vomiting of pregnancy, and the frequency of contracted pelvis and the treatment of labor complicated by it. The author alludes to the value of rectal examination in the prophylaxis of puerperal infection, this method of examination enabling one to determine the degree of dilatation of the cervix and the position of the presenting part in the pelvis. Curettage as a routine procedure in the treatment of puerperal endometritis is strongly condemned. No good results have been observed by the author in the treatment of streptococcic puerperal infections by mean of vaccines, but it is stated that Polak is more optimistic as to their use. The numerous illustrations, including the colored plates, cannot be excelled for their cleanness, didactic value, and artistic merit. The bibliographical references at the end of each chapter are particularly serviceable.

Beitrag zur Beurteilung und Behandlung des konkomitierenden Schielens. Von Gustav Caesar in Marburg a. d. Lahn. Price 1.50 M. Halle a. S.; Carl Marhold Verlagsbuchandlung, 1912.

This monograph of 43 pages present a careful study of a large number of cases of concomitant strabismus that have come under the observation of the author. The cause and influence of heredity on strabismus are discussed. The results of operative and non-operative treatment are given and the various forms of procedure described. The monograph is carefully prepared and is well worthy of studious perusal by those who are interested in this branch of ophthalmology.

Sehproben-Tafeln. Von Prof Dr. Berthold Kern, Obergeneralartz, und Dr. Reinhold Scholz, Generaloberartz. Dritte verbesserte Auflage. Price 3 M. Berlin: Verlag von August Hirschwald, 1913.

This work consists of charts of block letters and unfinished block numerals, so arranged that the patient cannot readily memorize them, with the equivalents of visual acuity indicated. Charts for mirror use, as well as the ordinary distance charts, are supplied. The letters do not follow the law enunciated by Snellen, the bars being wider than the spaces. The letters are selected in regard to uniformity. The popularity of the charts is attested by the fact that the work is in its third edition. An explanatory pamphlet accompanies the charts.

# Society Reports.

## MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*One Hundred and Seventh Annual Meeting, Held in Rochester, April 29, 30 and May 1, 1913.*

(Special Report to the MEDICAL RECORD.)

HOUSE OF DELEGATES.

THE PRESIDENT, DR. JOHN F. W. WHITBECK OF ROCHESTER, IN THE CHAIR.

**Report of the President.**—Dr. JOHN F. W. WHITBECK of Rochester presented this report. He reminded the Society that his predecessor had made several valuable recommendations which should be wisely discussed by the House of Delegates as a whole or by duly appointed committees. Committee work was desirable and decidedly advantageous and he, therefore, urged the appointment to the House of Delegates of a committee for each specific purpose of sufficient importance to require extended investigation and tests of expediency and presentation to those who had the authority to act, either in legislative or executive capacity. Owing to the magnitude of the interests of the State of New York in its financial and populous importance, it did not seem unreasonable that, situated as it was, it should essay to exert a potent influence upon the acts of Congress in many, if not all, of the great and vital affairs of the whole people of the nation. If the federal Government could be persuaded that the highest interests of 90,000,000 inhabitants of the United States demanded an organization of a veritable National Department of Health, there would be a Secretary of Health, whose undivided attention, divested of pernicious policies, would definitely provide for a needful and efficient regulation of Pure Food and Pure Drug Laws, a Division of Purification of Water Supplies, a Division of Nutrition, a Division for the Study and Prevention of Accidents and Diseases of Industrial Workers, a Division of Vital Statistics, and a Division of Education for the People in the Control and Prevention of Diseases. Then, too, there should be a National Chemical Laboratory to solve many of the vexed problems of national importance. All of these divisions should come under one department and would be under the supervision of one secretary, and not scattered among several departments, making the highest efficiency impossible. For a review of this proposition the members were referred to the article by Earl Mayo published in the *Outlook*, December 7, 1912, p. 764. The President recommended that the consideration of the New York Industrial Diseases Reporting Law be referred to the Committee on Lgislation. It was to be questioned whether there had come to be a proper appreciation of the relation of disease to industry. It was certainly important that diseases of occupation should receive the most careful attention and investigation. As President, he urged that the House of Delegates take some decided step in this matter, and if deemed advisable, appoint a special Committee on Legislation as well as to second the action taken by the Committee of the American Medical Association. After referring to the organization of the five sections, the President emphasized the importance of general discussion of the scientific papers, which hitherto had been often wanting or insufficient and unsatisfactory. It was believed that the arrangement of the five sections, as now constituted, would prove to be satisfactory, and it was doubtful if the State Society could afford to spare one of the scientific sections as at present organized. If positively advisable, other divisions might be incorporated into the existing sections without radically changing those on trial, by simply extending the scope of their usefulness. The total attendance at the last meeting was 721 members. The presidents of the District branches had been urged to stimulate increased membership and every County Society president had been repeatedly importuned to secure new members and larger attendance for the respective county conventions. The chairmen of the sections and the Committee on Scientific Work had been especially active and their efforts were deserving of the highest praise for what bid fair to be the unqualified success of the 107th annual meeting of the Medical Society of the State of New York.

**Report of the Secretary.**—Dr. WISNER R. TOWNSEND of New York submitted this report, which showed that the membership of the Society on January 1, 1913, was 6,964, an increase of 99 members over that of the previous year. The average increase in membership for the past five years was 175 a year. Many of the delinquents would come back but it was evident that active recruiting would have to be kept up and greater efforts made to bring in new members. The society represented a little over 50 per cent. of the entire profession of the State, but there were certainly many men who should belong and did not The honor list of county societies whose membership for 1912 was fully paid up was as follows: Chautauqua, Greene, Ontario, Orleans, Queens-Nassau, Schoharie, Sullivan, Tioga, Washington, and Wayne. The attention of the House of Delegates was especially directed to the report of the Committee on Revision of By-Laws and it was earnestly hoped that the subject would be studied by all before the meeting at which the report was to be presented.

**Report of the Treasurer.**—Dr. ALEXANDER LAMBERT of New York presented this report which consisted in the certified balance sheets of the Society and showed that excess of expenditures over income for the year 1912 was $1,306, while the income was $21,940. This excess of expenditure was partially offset by the excess of income of the previous year of $850.

**Report of the Council.**—Dr. WISNER R. TOWNSEND of New York presented this report which recorded the meetings held during the year, the minutes of which had been published in the *New York State Medical Journal*. During the year the secretary had sent a letter to every county society in the State asking for data in regard to the subject of illegal practitioners in their counties. The replies received showed that in fifteen counties they had no illegal practitioners, in two counties they had but two illegal practitioners, in four counties they had a few chiropractics, phisio-therapeutists, druggists prescribing, etc., in two counties they had four illegal practitioners. Erie County stated that it was impossible to even estimate the number of irregular practitioners. One county had several hundred illegal practitioners, and nineteen were prosecuted during the year, while another county reported ten or twelve illegal practitioners. The New York County Medical Society had prosecuted eighty-five at an expenditure of about $6,000. The secretary said that he had interviewed the attorneys for the State and County societies and they were agreed that it would be a very expensive undertaking to establish a central office to take charge of this work for the entire State, that it would be much better for the local county societies to handle this subject themselves. The Council believed that this matter was worthy of further investigation and it was suggested that the entire subject be referred to a committee of three to be appointed at this meeting.

**Report of the Committee on Publication Appointed by the Council.**—Dr. WISNER R. TOWNSEND of New York submitted this report in connection with that of the Council. The Committee on Publication consisted of Drs. S. W. S. Toms, chairman; Floyd Crandall, Samuel E. Getty, Alexander Lambert, and Henry G. Webster. The duties of this committee consisted in the publication of the *New York State Journal of Medicine* and the "Medical Directory of New York, New Jersey, and Connecticut." In accepting advertisements the *Journal* was conforming to the requirements of the American Medical Association and this compliance had restricted the advertising matter and materially lessened the income from the *Journal*. The cost of publication, as compared with 1911, showed an increase of $1,306. This was due to an increase in the number of pages of reading matter as well as to a limitation of the advertisements. Eight thousand copies were issued monthly, which was an increase of two hundred per month as compared with 1911. The Directory was issued in October, 1912, and work on the next year's issue was under way. The next issue would contain a complete list of the examiners in lunacy for the entire State as well as of those registered in New York County. The committee would be pleased to receive any further suggestions for the improvement of the book.

**Report of the Committee on Public Health.**—Dr. JOSHUA M. VAN COTT of Brooklyn submitted this report which expressed satisfaction with the growing interest of physicians throughout the State in clinical laboratory diagnostics and their demand for local facilities for such work. It was the feeling of the committee that the State Society should take an active part in endeavoring to procure legislation for the establishment of local laboratories at convenient points throughout the State. The committee further felt that the State Society might well send annual communications to the legislature commending such of its actions as it could approve and recommending such further legislation as, in its judgment, might be deemed advisable. In regard to the recent action of the Governor, and the report of the special health commission, the Committee thought that the time was not ripe for action.

**Report of the Committee on Legislation.**—Dr. Robert P. Bush of Horseheads submitted this report. He stated that the legislative work of the committee during the session of 1912 was very much less arduous than it was in the year 1911, as the field of operation chosen by the opponents to scientific research by means of animal experimentation, and those opposed to the vaccination laws, was the Assembly instead of the Senate. There were three slightly different antivivisection bills introduced. Evidently the speaker wished to give these advocates a fair chance, for the bills were referred to three different committees. He ignored the Committee on Public Health to which these bills should reasonably be referred. The Committee on Ways and Means and that on General Laws promptly reported the bills adversely. The reports were agreed to by the Assembly and they were killed. The Codes Committee decided not to report the bill referred to it. The two anti-vaccination bills went to the Committee on Public Health, and no further. The bill establishing a State School of Sanitary Science at Cornell University passed both houses but was again vetoed by Governor Dix. Bills were introduced during the year on the following subjects: To compel the hotels to furnish bed sheets at least nine feet in length so that they might be turned over and engage germs that might be incubated in the quilts and coverlids. To require all mattresses, pillows, etc., to bear a label showing the kind and quality of material used in their manufacture, whether new or second handed, etc. To compel the proprietors of public lavatories to furnish individual towels. Forbidding any railroad company to permit to be discharged from any of its cars any solid or liquid excreta within any drainage area or water shed, as designated by the State Commissioner of Health. None of these passed the Legislature; some of them should be enacted. The two bills which became laws were those prohibiting medical schools from matriculating students who were deficient in any part of the educational requirements, and a law providing for the creation of a commission to examine and, if need be, to protect society by the sterilization of degenerates, perverts, feeble-minded so that the class which was providing the largest item of expense which the State had to meet should not be able to propagate their kind, which at present was multiplying far in excess of the normal population. Two propositions had been presented by the Committee as being proper subjects for legislation, neither of which was endorsed by the Society: First, that the medical laws should be amended so as to prohibit nurses from administering anesthetics. Second, to provide that licensed physicians, who violated the code of ethics by advertising miraculous cures by consulting with illegal practitioners, etc., should be disqualified. This Committee held that the Society would do better to exercise its influence in enforcing the laws hitherto enacted than in urging the passage of others which would become dead letters. To this end they suggested that the House of Delegates appoint a committee to formulate a method of procedure by which the laws on the statute books might be enforced.

**Report of the Committee on the Regulation of the Introduction of Medical Expert Testimony.**—Dr. Dwight H. Murray of Syracuse submitted this report, which stated that no bill had been introduced into the Legislature last year because the Chairman of the State Bar Committee, who seemed to have assumed control of this matter, did not see fit to take it up. At a meeting of the committee the chairman was instructed to consult a constitutional lawyer who knew how to draw up a proper bill, and have one drafted for criminal cases only, meeting constitutional objections if possible. This course was now being followed and the committee hoped to have a bill drafted and to make an effort to get it passed.

**Report of the Committee on Scientific Work.**—Dr. Thomas J. Harris of New York submitted this report, which announced that the plan pursued last year would be followed at the present meeting. There would be five sections: Section on Medicine, Section on Surgery, Section on Nose, Throat, and Ear, Section on Obstetrics and Gynecology, and Section on Diseases of Children.

**Report of the Committee on Prize Essays.**—Dr. A. Vander Veer of Albany reported for this committee by giving the history of Dr. Merrit H. Cash who had given $500 in 1861, the interest of which was to be used as a prize for the best original essay on such medical or surgical subject as might be designated by a committee of the society. From 1867 on few prizes had been awarded and at one time the society offered to increase the amount up to $100. It was decided that the society did not have the right to make such disposal of its funds. Interest had accrued which had been added to the principal. As a result of the committee's consultation with the counsel it had been decided that the Merrit H. Cash prize would be awarded every two years, beginning with the annual meeting of 1914, and that the prize would consist of $100. This year the prize had been awarded to Dr. William Kirk of Troy and Dr. George L. Rodenberg of New York had received honorable mention. The report then gave the correspondence with Dr. Lucien Howe which led to the establishment of the Lucien Howe prize of $1,500. The conditions under which the income from this amount became available were given. The committee felt that $100 or whatever interest had accrued might be awarded annually. The prize was to be given for the best original contribution to their knowledge of some branch of surgery, preferably ophthalmology, and competition was not restricted to members of the State Society. The committee felt that while it was in their power to designate titles, keeping within the meaning of the gift, yet they would prefer to hear further from Dr. Howe regarding his wishes. The committee invited contributions to these funds, believing that in this way interest would be stimulated.

**Report of Committee on Experimental Medicine.**—Dr. William H. Park of New York submitted this report which gave the experience of the committee with the three antivivisection bills referred to in the report of the Committee on Legislation. This report stated that in past years it had been the custom of legislative committees not to make formal report to the Assembly expressing disapproval of antivivisection bills, even when such bills were disapproved. The prompt, positive vote of disapproval in all of the three cases of the past year, with the subsequent report to the Assembly, and in two cases the formal concurrence of the Assembly in the report, were evidence that the committee had felt less sympathy than ever before with antivivisection measures. The victory for scientific medicine had been correspondingly greater. The committee expressed the belief that its continued vigilance and activity in these various ways had been of material service in safeguarding the humane work of medical experimenters. It earnestly hoped that the members of the profession throughout the State would use their utmost efforts to keep clearly before the minds of the public and especially of the legislators the folly and injustice of hampering in any way the magnificent work which medical research was doing to prevent and relieve the sufferings of mankind and incidentally of dumb animals.

**Report of Committee on Revision of By-Laws.**—This committee which was appointed at the last annual meeting presented its report comprising the proposed amendments and changes in the by-laws. It had been the aim of the committee to make as few changes as possible, and those were based upon experience of over seven years under the present by-laws. These by-laws, as revised by the committee, with a few minor changes, were adopted by the House of Delegates.

**Report of the Counsel.**—Mr. James Taylor Lewis of New York submitted this report. He stated that there were no appeals pending and no verdict had been rendered against any member of the State Medical Society, defended by him during the past twelve years. In this connection he said that it was important that he should report with reference to the weakness of some of the members of the State Society in applying for and securing insurance against malpractice suits. This was deplorable and he recommended that hereafter no physician who was insured in any fidelity company be defended by the State Society. It was against the theory of the establishment of this malpractice defense by the State Society, the insurance companies benefited by the State Society's efforts; the question whether or not an expert should be paid by the State Society or the insurance company recurred, and altogether it was an unwise position for the State Society to take in any event. Organized malpractice defense as conducted by this society should be more publicly and widely disseminated. It should be brought to the attention of the belligerent patients and if the doctor had done what he considered proper he would not be subjected to blackmail under any consideration. He had been opposed to this publicity for many years, but the increase of new suits during the past year or two had made him feel that more publicity would be of benefit. The profession was largely to blame for this increase. Too many times it happened that the physician who was called in to supplement the work initiated by the unfortunate defendant had said something in depreciation of the original effort. There was hardly a case that was not attributable to some such word or act on the part of the new doctor. A large percentage of cases brought during 1911 had never been brought on for actual trial. Indeed, in 1912, but nine cases were actually tried in court, and

four were otherwise disposed of without going into court, plaintiffs having abandoned their cases at the last moment. The ever-broadening influence of the State Society was making itself felt in many directions and through many channels. Sister State societies were inquiring as to the success of the malpractice defense, and adopting the procedure, and the counsel had continued as hitherto to answer such legal questions as were propounded on the various subjects which were presented. Mr. Lewis gave a list of the thirty-six cases begun during the year 1912.

Reports of the councillors of the eight district branches were submitted.

**Supplementary Report of the Committee on the Regulation of Medical Expert Testimony.**—Dr. DWIGHT H. MURRAY of Syracuse read the following bill, which he stated had been introduced into the Legislature and would be voted upon by the Assembly during the present week: "In a criminal action or proceeding or in a special proceeding by the State writ of habeas corpus or certiorari to inquire into the cause of detention in which soundness of mind of a person is the issue, the court in which the proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of examination. Each such examining physician may be sworn as witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment shall be paid out of any funds available for the payment of and in the same manner as other court expenses."

**Time and Place of Next Meeting.**—The date set for the next meeting of the society was Tuesday, April 28, 1914. New York City was chosen as the place of meeting.

**A Communication from Congress.**—The President, Dr. WHITBECK, read a communication from the Department of the Interior in reference to a resolution presented to Congress by the American Medical Association, asking for an investigation of the physiological and therapeutic properties of the waters of Hot Springs, Ark., requesting the State Society to discuss the advisability of such a proceeding and to communicate its conclusions to the Department of the Interior. Similar requests had been made of other State societies.

The communication was referred to the Council with power to act.

**A Bronx County Society.**—The application for a charter creating a Bronx County Medical Society was referred to the committee with recommendations that the privilege of forming a new county society be granted to the members of the Medical Society of the State of New York residing in the Bronx, but not to any one medical society already in existence.

**Resolution to Lower Tariff.**—A resolution was adopted for presentation to Congress recommending that the tariff on surgical instruments and medical appliances be removed. Resolutions were introduced by the Erie County Society endorsing the plan of establishing a special degree in surgery corresponding to the F. R. C. S. in England, and also one condemning fee-splitting.

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GENERAL SESSION.

*Tuesday, April 29—First Day.*

THE PRESIDENT, DR. JOHN W. F. WHITBECK, IN THE CHAIR.

**Invocation.**—The Reverend R. R. M. CONVERSE of Rochester opened the meeting by prayer.

**Address of Welcome.**—Dr. WESLEY T. MULLIGAN, Chairman of the Committee on Arrangements, made this address.

**Address of Welcome.**—The Honorable HIRAM H. Edgerton, Mayor of Rochester, welcomed the Society to the city. He congratulated the city on its good fortune in having the Society within its gates. He congratulated the doctors in that they were able to take advantage of the hospitality of the city and share in the benefits to be derived from the scientific meetings, and he congratulated those who remained at home who were thus given a respite and some chance for their lives.

**Annual Oration on Medicine.**—Professor JOHN G. ADAMI of McGill University, Montreal, made this address, choosing as his subject "Certain Elementary Concepts in Education Applied to Medicine." (To appear later.)

**Address of the President.**—Dr. JOHN F. WHITBECK of Rochester said that he had thought it wise to have Dr. Adami make the principal address of the morning instead of making it himself as had been the custom of former presidents. He drew an analogy between the Medical Society and a ship and said that Longfellow's apostrophe to the Ship of State was applicable on this occasion. He then recited the verses "Thou, too, sail on, O, ship of State, etc."

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SECTION ON MEDICINE.

*Tuesday, April 29—First Day.*

DR. DELANCEY ROCHESTER OF BUFFALO IN THE CHAIR.

**Pain and Other Clinical Manifestations of Myocarditis.**—Dr. ALEXANDER LAMBERT of New York read this paper. He said that one frequently heard that it was only at the post mortem that myocarditis could be accurately diagnosticated, and this idea seemed to be the remnant of the old idea that when the lesions in the valves had been accurately estimated, that was all there was to do in considering cardiac disease. The graphic methods of registering the occurrences in the cardiac cycle, which had developed so enormously in the last ten years, had very greatly altered the point of view of the profession. But there still remained the idea that outside of these special instruments of precision it was not possible to have an accurate estimate of the condition of the heart muscle. Even with these instruments the kind of degeneration that was present in the heart muscle did not appear and they must fall back on the clinical observations of the different forms of myocardial degeneration that were most likely to occur with certain of the general diseases, and to estimate from other signs and symptoms than the graphic method what was the form of myocarditis present.

It had been his belief for a number of years that cardiac pain was a much earlier symptom in cardiac symptoms than was generally believed. The majority of physicians did not pay much attention to precordial pain unless it radiated down the left arm; then they believed it was due to some form of angina, and if the patient did not have attacks of breathlessness, or did not drop down with it, they were prone to call it pseudo-angina, especially if it occurred in women. Most men were not willing to call anything angina unless it had the fear of impending death connected with its occurrence; but they believed that all other pains occurring in the heart were false angina unless the fear of death came from it. He thought it might be well for certain reasons to limit the name of angina pectoris to only the very serious cases of cardiac pain and in which the attacks were so severe that death might occur at any time. But it would seem to him that it was vastly better to recognize that cardiac pain occurred with various degrees of intensity, and that there might be pain in the heart of slight intensity without fear of impending death, and as an early symptom of myocardial changes. These pains might occur in various areas on the chest wall, or on the arm and, though they might consider them as reflex or referred pains, were of cardiac origin; they should be considered as such and treated as such. Mackenzie had done a great service in calling attention so accurately to the fact that the heart had no nerves or means of expressing pain to the muscular wall itself, and the nerves of the heart could not produce the sensation of pain. Vibrations radiating from the heart could, however, through whatever nerves they went, reach the segments of the spinal cord and radiate causing vibrations, so that the expression of pain occurred out in the nerves of the skin in which they were in the habit of feeling that sensation. Mackenzie had shown that some cardiac pain was referred to the area supplied by the second and third cervical segments, and ran down to the heart through the vagus. This would account for the occipital headaches and tenderness of the sternocleidomastoid and trapezius muscles which were sometimes present. The distribution of the pain and hyperesthesia, according to Head, bore a close relation to the chamber of the heart most affected. Pain, from whatever cause, starting in the heart, went by whatever channel to some segment from the third and fourth cervical, skipping the fifth, sixth, seventh, and eighth, again reappearing in the first thoracic down to the eighth. It had long been recognized that pain down the arm was due to a referred cardiac pain. But it was the failure to have recognized the extensive area in which pain from the heart occurred that had made so many mistakes possible in considering what cardiac pain was. It seemed to Dr. Lambert that the most frequent position of pain was some position between the fourth and sixth ribs over the pectoral muscle near the nipple. This was the one in which there was frequent tenderness but frequently the hypersensitiveness of the skin and the hyperalgesia remained for a day or two after the actual pain had ceased. It was not uncommon for pain in the left wrist

to be treated as gout or rheumatism which, in reality, was the first expression of myocarditis. It was his opinion that various pains of moderate degree coming from the heart were so common on the left side of the chest and in the left arm in the areas he had designated, that the wisest method of thought, when in the presence of pain in these areas, was to realize that the only safe method was to start with the supposition that such pains were most probably cardiac and proceed to exclude other possible diagnosis, and not exclude cardiac pain and wonder what the diagnosis was which heretofore had been the usual method of procedure.

Shortness of wind was one of the early signs of myocardial degeneration. It was a very striking thing to see the number of alcoholics after a debauch who would complain of an intense aching pain in the precordial region. It was not the old alcoholic in whom one would expect aortic arteriosclerosis and coronary disease and a naturally starved cardiac muscle, but it was in the rugged, vigorous, young looking alcoholic that these pains were most commonly complained of, as if the poisoning of the alcohol and the over-exertion committed in the spree had produced an aching pain from the degenerated muscle. It was a very striking feature in syphilitic endocarditis and in syphilitic aortitis to see how common were these pains and how quickly they would cease following a small dose of salvarsan.

**The Symptoms and Diagnosis of Involvement of the Heart in Syphilis.**—Dr. Harlow Brooks and Dr. John H. Carrol presented this paper. The study was based on a series of 200 selected cases from private consultation and hospital practice. In 75 instances the clinical study was concluded with autopsies. Absolute diagnosis of the existence of syphilis in each instance was insisted upon by the Wassermann reaction, by associated syphilitic lesions, by the history, and by anatomical studies in the autopsy cases. Absolute diagnosis of the luetic character of the cardiac lesions was demonstrated by cure or amelioration of the signs and symptoms under specific treatment or by the anatomical study post mortem. Eleven cases occurred during the secondary stage of the infection. The remaining cases represented tertiary and quaternary periods. It was definitely shown that cardiac involvement might appear early in the secondary period and three post-mortem cases were cited to demonstrate this point absolutely in addition to the clinical cases. The study would seem to indicate that the progress of cardiac involvement was more rapid in females, especially in young women. Probable reasons for this fact were advanced. Fertility in married patients did not differ greatly from the normal, but exact data as to the condition of the issue could not be accurately obtained. Cardiovascular symptoms were complained of in 164 instances, in the remaining cases either the lesion caused unexpected death or was found accidentally on physical examination or at autopsy. The most frequent symptom appeared to be dyspnea. Pain in the precordium was a frequent and very important symptom; it was often manifest in very early stages and was rarely entirely absent. Frequently it took on a true anginal character; 9 per cent. of cases studied showed this type. Precordial tenderness was frequent. Cyanosis of greater or less degree was present in over 50 per cent. of the cases selected for study. Insomnia was quite frequent. Although it was admitted that the symptoms of heart involvement in lues could not be definitely distinguished from the associated signs of syphilitic aortitis in so far as possible, cases showing this lesion to recognizable marked degree were eliminated from this series. Actual decompensation demanding early cardiac treatment was present in 89 cases. It was important to note that even in these instances greatest benefit followed specific treatment. Endocarditis appeared to play a secondary rôle as regards importance to disease of the myocardium. The most frequent endocardial lesions were combined, one of the aortic and mitral valves; next in frequency was pure aortic disease which was found in 42 cases. Studies of the blood pressure did not appear to advance general information in regard to the complication. In the diagnosis the fallacy of the history was pointed out and the importance of associated luetic signs and symptoms, the great importance of the Wassermann reaction and the therapeutic test was particularly dwelt upon. The fact that a Wassermann reaction might persist in a perfectly cured case was apparently shown and the prognostic value of the reaction would therefore appear to be in question. The paper terminated with a summary of the above statement in the form of conclusions and with the expression of thanks to those of their associates who had contributed to the study by suggestions and cases.

**Selective Drug Action on the Nervous System as an Aid to Diagnosis.**—Dr. Nelson G. Russell and Dr. Carroll J. Roberts of Buffalo presented this communication. They stated that the so-called animal nervous system which supplied the organs of sense and all voluntary muscles was to be distinguished from the vegetative system, which supplied the smooth muscle of viscera, certain cross-striped muscle and the secreting portion of glands. The vegetative system was further divided into the sympathetic and the autonomic systems. The autonomic system was made up of a cranial portion, a bulbar portion, and a sacral portion. Owing to the importance of the vagus, the chief nerve of the system, the autonomic system was also called the extended vagus, and the study of the drug reactions of this system was called vagatonic. To organs mentioned by them they had two sets of nerve fibers which were physiologically antagonists and a balance was theoretically necessary for the normal functions of the organs to be carried on. Each system was acted upon selectively by certain drugs. Thus pilocarpine acted as an irritant to the autonomic system and produced the same effects as electrical stimulation. Atropine acted as a depressor of the autonomic system and counteracted the effects of pilocarpine. Adrenalin stimulated the sympathetic system, but as yet they did not know of a drug that had a depressing action on the sympathetic system. Pilocarpine might in certain susceptible individuals produce, through stimulation of the autonomic system, certain symptoms, and one so susceptible was called a "vagatoniker." According to Eppinger and Hess of Vienna many of the so-called cases of hysteria and neurasthenia and the neuroses were, as a matter of fact, due to irritability of the autonomic system and they supported their claims by abundant clinical proof. The method of procedure carried out in the investigation of cases was described. The practical application of the facts learned from a positive reaction was that any symptom produced by an injection of 0.01 gm. of pilocarpine, referable to an irritable autonomic system, would be relieved by atropine, the depressor of the autonomic system, and a case was reported to illustrate this point. The paper was presented with the hope that some of the points contained might be useful in determining the exact status of certain cases that showed vagus or sympathetic disturbance.

**Cardiac and Arterial Decompensation: Prevention and Treatment.**—Dr. Louis Faugères Bishop read this paper. He said that compensation was defined by Stedman's "Medical Dictionary" as: "The supplying of a deficiency; the making up in one part for a loss in another. Specifically, the maintenance of the circulation, in cases of cardiac valvular defect, by hypertrophy with resulting increased force of the contractions of the heart muscle." It had latterly been suggested, but not generally admitted, that arterial compensation consisted in an increase in the structures composing the arteries to accommodate a more active function demanded by high blood pressure, which, in turn, might be occasioned by functional difficulties, more especially of the kidneys. The causes of broken compensation in the heart might be a deterioration of the healthfulness of the heart muscle because it was "made sick" by poisons that reached it through the circulation, or lost its reserve through exhaustion or neglect of exercise. There were three topics to be considered: (1) Pure cardiac compensation in non-progressive valvular disease. (2) Arterial compensation maintaining a necessary increase in blood pressure. (3) Combined cardiac and arterial compensation where valvular defects existed with kidney or other demands for pressure. Instances of the first form of compensation have been quite frequent in his experience with young persons. They gave the history of some damaging disease and presented themselves with murmurs and a compensating hypertrophy of the heart. They should be wisely advised for they were plastic material for the easy creation of chronic invalids on the one hand, or the development of useful lives on the other. They should be told that their problem was the same as the problem of any of their healthy contemporaries who were preparing for an athletic contest, namely, the maintenance of the heart in the best possible condition of health and efficiency. After being warned against things demanding strain, they should be urged that they could not afford to neglect other forms of exercise. Tennis, horseback riding, swimming, and walking were all appropriate. They must be taught to respect their wind and let it be the indication for the moderation or cessation of exercise. Many would show a tendency to defect of circulation in the liver and do better on a few-proteins diet. The blood would often be found too abundantly supplied with red cells, so that tonics and forced feeding led to a condition of congestive plethora that was not desirable, and tended toward autointoxication. Those

who were compelled to work sometimes did better than those who were unwisely guarded. Plain living, with abundant exercise, devoid of strain, was the ideal state of the young person with pure cardiac compensation. It was one of the pleasures of the specialist to be able to reassure the parents and the young people themselves, and put them on the plane of average individuals. The treatment of broken compensation with uncomplicated valvular disease in young persons required a study of its cause, which was often enough found to be muscular strain that had been out of proportion to the power of the crippled heart, particularly when there had been dissipation. Prolonged rest might be necessary, and sometimes the occasional use of digitalis was required. The diet should be liberal, and the auxiliary use of iron, arsenic, and strychnine as a tonic was allowable if there was true anemia or nervous depression. In these young people they did not have to contend with many contraindications to such measures as were found in older people. When compensation was restored, out-of-door exercise was necessary for its maintenance. Simple arterial compensation was found in persons who had undergone some damage to the kidneys and blood-vessels, most often through some infection, but occasionally through metallic or food poisoning. These were ordinarily first seen when a little older than those with pure cardiac compensation, and in their care present a somewhat different problem, though, hygienically, they work out much the same. A careful study would usually show that they were unable to deal successfully with some of the ordinary protein foods. This amounted to a subsymptomal sensitiveness. It might be meat, eggs, fish, or two of these classes of protein. Hence, the selection of proteins suitable to the individual was of extreme importance. There was no chemical test that had been worked out up to the present time, so they were driven to indirect means for the determination. Tradition and popular prejudice made meat, particularly red meat, least desirable; but some tolerated meat, and could not tolerate eggs; and others showed under investigation that fish was their insidious enemy. The study of the effect of special foods on blood pressure helped, but if the sensitiveness was very great, on the withdrawal of all classes of proteins, that which was craved most would often be found to be the one at fault, on the same principle as alcohol was craved by the alcoholic. Protein food, to which a person was sensitive and which had become an habitual poison, acted as a stimulant and was missed. When withdrawn, it led to a false sense of weakness that really did not represent a lack of physical strength. In the care of arterial compensation, the few-protein diet would be found most desirable and much more easy to maintain than the low-protein diet. It consisted of allowing as much as was desired of a few selected proteins, and absolutely avoiding the others. Arterial compensation could thus be satisfactorily maintained over long periods of time. Broken arterial compensation in its simplest form was found in the subjects of high blood pressure, who, through injudicious treatment, the action of depressor poisons or severe nervous shock, underwent a loss of vascular tone leading to interference with circulation in the kidneys and other organs. There was an accumulation of blood in the splanchnic area and a general condition which was often described as "auto-intoxication." These responded to outdoor exercise, simplification of diet, intestinal hygiene, and the use of vascular tonics, theobromine being one of the most valuable. While in the second class, the heart was always slightly involved, in the third class it was sometimes difficult to say which was primary—the arterial or the cardiac condition. They found decided valvular defects with a considerably elevated standard of blood pressure. The care of these persons involved the principles of the other two classes of compensation. The treatment of broken compensation in combined cardiac and arterial disease, which corresponded closely to secondary low blood pressure, which the author had so often described in previous communications, was the most serious problem in cardiovascular disease. The condition developed after years of compensatory life, and the sufferer presented dilatation of the heart with feeble valvular orifices and pathological relaxation of the blood vessels causing dropsy, edema of the lungs, congestion of the liver, impaired cerebral circulation, and partial paralysis of the kidneys. In this condition, persons were always highly sensitive to many proteins, even often to the proteins of milk. Secondary low blood pressure was always present, though, at times, the blood pressure measurement was misleadingly high on account of local vascular spasm. Unfortunately, they often came to the specialist's notice when the situation had been complicated by the liberal, but not always wise, administration of inappropriate drugs. The limits of the paper did not allow the full discussion of so serious a condition. The principles of treatment in his own hands, Dr. Bishop said, involved the thorough clearing up of the intestinal condition by the administration of at least an ounce of castor oil on three successive occasions at intervals of 48 hours; the thorough digitalization of the heart; the withdrawal, at first, from the diet of eggs, fish, meat, and soups, and, in a large measure, of milk; allowing bread and butter, vegetables, and cereals; and as soon as possible the commencement of graduated exercise, leading up to as much of an outdoor life as possible, and gradually to a more liberal diet.

Dr. Hubert Schoonmaker of Clifton Springs, referring to the effect of the internal secretions upon the circulation, said they had come to recognize in these later days such a thing as the "thyroid heart," and the general practitioner was the first man who ought to recognize the "thyroid heart." To make a diagnosis of cardiac neurosis, neurasthenic heart, or gastrointestinal reflex, or what not, did not mean much. If they could have recognized at the outset the cardiac condition or the thyroid condition, they could have taken care of the patient in such a way that, in all probability, Graves' disease would not have developed. Every internist should recognize in the face of cardiac arrhythmia, and particularly in cardiac palpitation, which was at all persistent, the probability of disturbance of the heart due to abnormal internal secretions and possibly hyperthyroidism.

Dr. Benjamin W. Stearns of Unadilla recalled a patient recovering from typhoid fever who was taken with a severe sciatic pain in the hip. After one hour the pain moved to the region of the heart and death occurred in twenty minutes. Dr. Bishop's paper recalled his own personal case of a strained heart which did not improve under the usual heart tonics, but he entirely recovered after the use of tincture of strophanthus in ten-drop doses, four times a day, this being continued for a full year. He said he had used strophanthus as a heart tonic exclusively for the past six years and he considered this drug the most effective and reliable heart tonic.

Dr. Neuhof of New York said he could not agree with Dr. Lambert that pain in most of these cases was due to changes in the myocardium. He had seen similar conditions in children with acutely dilated hearts, where the main lesion was endocardial. He had made a study of twenty odd cases of arterial fibrillation and the first symptom was dyspnea.

Dr. Henry S. Stark of New York said that in the absence of any diagnostic instrument of precision the clinical diagnosis of uncomplicated myocarditis must necessarily be a tentative one. The truth of this statement was disclosed by the frequency with which a clinical diagnosis was made of a myocarditis, but which diagnosis was controverted by the post-mortem findings. Many cases of clinical myocarditis were masked cases of endocarditis of a low grade, not advanced enough to produce adventitious heart sounds or a hypertrophy.

Dr. Anthony Bassler of New York said that he was sorry not to have heard more regarding the etiology of cardiac disease, for he was sure that they must go further than a consideration of rheumatism, syphilis, chorea, and certain local and general infections to account for these cases. There was no doubt in his mind that many were due to intestinal disturbances, for analysis of the intestinal contents gave findings in so many instances of choline and other substances which showed a protein breakdown. It was shown that toxic substances were constantly going into the circulation. The mucous membrane of the intestine did not deintoxicate and it could not take care of what was brought to it. If these cases were looked upon in this way and if they were properly dieted, if more oxygen was brought to the tissues by keeping the patients in the open air, having them take exercise, etc., and afterwards adding such extracts that might be helpful, it would be better for them.

**Association of Uterine Growths with Goiter, Typical and Atypical Exophthalmic Goiter.**—Dr. Henry L. Elsner of Syracuse read this paper. The object of this paper was to call the attention of the profession to the very large proportion of uterine growths associated with goiter, typical, and atypical, and to impress further the frequency of the atypical cases and to encourage the thorough examination of all the organs of the body in the presence of goiter, large or small; if this was done, the number of associated anomalies would prove surprising. Exophthalmic goiter developing during pregnancy was exceedingly rare; it had only occasionally happened that the complex was influenced by parturition. It might be concluded that these patients were unfavorably in-

fluenced by pregnancy and that convalescence had been abnormally slow. In his series of cases patients with exophthalmic goiter, with or without uterine growths, had rarely conceived. During pregnancy all symptoms were liable to be aggravated, particularly those referable to the nervous system. So far as the influence of castration on the thyroid gland was concerned, it was impossible to conclude that exophthalmic goiter was either favorably or unfavorably influenced by such treatment. Dr. Elsner had made an analysis of 5,370 cases of internal diseases and 186 cases of goiter were included. Of this number 89 were simple uncomplicated goiter, 1.66 per cent.; 97 were diagnosticated as belonging to the class of exophthalmic goiter, 1.8 per cent.; of this number 55 proved to be atypical exophthalmic goiter, 1.2 per cent.; 42 were typical in all symptoms of exophthalmic goiter, 78 per cent. Fifteen per cent. of all the cases of goiter seen (186), included in 5,370 cases of internal disease, proved to be associated with uterine myoma or fibromyoma. Since 1881 his clinical experiences had demonstrated the frequent association of thyroid perversion, often hyperthyroidea, including simple goiter and exophthalmic goiter, typical and atypical with uterine growths, fibroid, and myomatous. He felt that he was justified in teaching since 1881 the unusual frequency of uterine growths with thyroid abnormalities, more particularly with the various forms of goiter, typical and atypical exophthalmic goiter. There were to be considered two facts: One, surprisingly prominent, proved that the disease was often self-limited and spontaneous recovery was not at all uncommon; second, the subjective and objective manifestations proved the protean character of many goiters.

Dr. John A. Witherspoon of Nashville, Tenn., said that for many years he had noted the relation of uterine troubles and Basedow's disease but what this relationship bore he did not know because so little was as yet known regarding the internal secretions. Shock, anxiety, worry, etc., certainly exaggerated the growth of the gland. Hypothyroidism was without doubt often caused by the excitement attendant upon merely preparation for some operation.

Dr. A. Jacobi of New York said that he had seen but a few cases which confirmed Dr. Elsner's conclusions and his vast knowledge of the literature on the subject.

**Benzol in the Treatment of Leukemia, with Results in a Case of Myeloid Form.**—Drs. Jerome Meyers and Thomas W. Jenkins of Albany presented this paper. From a study of the case they reported and the cases that had been reported, they drew the following conclusions: Benzol was a valuable addition to the therapy of leukemia of any kind. Its institution was, however, so recent, and clinical experience still so scanty, that definite conclusions as to its intrinsic value should be held in abeyance. It would seem to have no uniform action: in all cases it reduced the number of the white cells but in some, apparently those with very high counts, it did not reduce the leucocytes to normal; while in cases of 100,000 to 200,000, it might give brilliant results with normal white count greatly diminished or normal spleen, distinct pain in weight and strength, and loss of fever. On the other hand, they might have paradoxical reactions with failing white counts and gain of strength with no change in the spleen, or they might find a decrease in the spleen with persistent high leucocytic counts, or there might be low counts with many pathological leucocytes, or there might occur sudden leaps in the number of white cells. The red cells and the hemoglobin were usually very beneficially influenced. When *x*-rays could be used in combination, very favorable results might be obtained, the blood returning to normal with no persisting myelocytes. It was very probable that the results of benzol-therapy were variable for two reasons: (1) The cases in themselves varied in intensity and in the fundamental pathological conditions or etiological factors in the bone marrow, the spleen, or lymphoid system; (2) the results were in some way dependent on the size of the dose of benzol, which dose might be either stimulating or depressing to the tissues involved, and this dose might be peculiar in a marked degree to each case or individual. They would, therefore, suggest that the effect of benzol should be carefully checked by daily blood examinations so as to gauge the optimum dose, and to forestall any symptoms of benzol poisoning.

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SECTION ON PEDIATRICS.

*Tuesday, April 29—First Day.*

Dr. Henry L. Shaw of Albany, in the Chair.

**The Wassermann Reaction in Various Conditions in Children.**—Dr. L. Emmett Holt of New York premann reaction not only enabled one to be certain of the existence of syphilis in many doubtful conditions but also excluded syphilis in many cases where it was formerly suspected. It was the consensus of opinion that latent as well as active syphilis gave a positive response to this reaction. It was also the general belief that children who reacted positively should receive the benefit of antisyphilitic treatment. Like all laboratory tests the Wassermann reaction was not infallible. Positive reactions might be met with in certain cases of scarlet fever and in infection with the trypanosomes; neither of these conditions would be likely to be confused with syphilis. Errors in faulty technique must be taken into account. It was absolutely essential that the reagents used should be right. The antigen must be good and well tested; the sheep or human corpuscles must be fresh and properly washed. Errors occurred most frequently on the positive side so that children tested for syphilis were pronounced syphilitic when they were not. A series of observations had been carried on in the Babies' Hospital in order to answer the question as to the frequency of syphilis in the ordinary run of hospital infants as well as in some special conditions. The Noguchi modification of the Wassermann reaction was used in all of their cases. This method had the advantage in infants of requiring much less blood than the Wassermann test. All of the tests had been made at the Rockefeller Institute under the supervision of Dr. Noguchi. They, therefore, felt sure of the technique and the accuracy of their observations. During the period of their observations 34 cases of hereditary syphilis had been admitted for treatment. In 31 of these, blood tests were made, and 30 gave a positive reaction. The infant not responding had undergone inunctions of mercury for a period of three months. Previous treatment with mercury did not seem to affect the reaction unless it had been continued for a considerable time and with regularity. Of the 30 patients giving positive reactions, nine had been treated with mercury. The positive reaction in these cases, some of which had been treated from birth, showed how incomplete and uncertain was the cure of syphilis effected by mercury and potassium iodide. Of 178 tests made in hospital patients showing no definite signs of syphilis, positive reactions were obtained in but eleven and five of these were shown upon fuller investigation or subsequent findings to be pretty clearly syphilitic. Two of the remaining four were doubtfully so. The great proportion of congenital deformities had no relation to syphilis since not a single positive reaction was obtained in 56 consecutive cases. Of 62 patients suffering from malnutrition only five gave a positive reaction and were included in the group mentioned above. Of the remaining 57, nearly one-third had very considerable enlargement of the liver or spleen or both. Since these cases examined were selected from a much larger number as those most likely to be syphilitic, they could not regard syphilis as a common cause of marasmus in the patients admitted to the Babies' Hospital. Since the error was almost invariably on the positive side, the technique of those who found a large percentage of positive reactions among marasmus patients in institutions was open to suspicion. It was evident that mere swelling of the liver and spleen even when associated was not to be regarded as a very important sign suggestive of syphilis in infants suffering from malnutrition. Both were much more likely to be seen with rickets than with syphilis. Mere swelling of the superficial lymph nodes, whether occurring alone or with swelling of the liver and spleen, had no special significance. The only glandular swellings that did suggest syphilis were those of the epitroclears when this occurred without any peripheral lesion to explain it.

Dr. L. E. LaFétra related his experience with the Wassermann reaction at Bellevue Hospital. They employed only the original method of Wassermann. All suspected cases were submitted to examination and all cases in which there was an underlying luetic condition. They had submitted 82 cases to examination two or more times. They found syphilis present in 44 cases in which it was suspected and in 15 cases where they had thought it was not present. The spleen was enlarged in three-fourths of their cases that gave a positive reaction. In young infants a large spleen need not lead one to suspect syphilis. In fifteen cases not supposed to have syphilis the family history was positive in two cases and negative in nine. One should not put too much reliance on a negative family history. As an assistance to diagnosis the Wassermann test was of great service, especially in skin eruptions and stomatitis. The Wassermann reaction should be used in all doubtful cases. Observations should be made as to the results of treatment with the mercurials and neosalvarsan in children.

Dr. Thibaudeau of Buffalo said that in his tests the original method of Wassermann had been carried out. His experience led him to conclude that when the Wassermann reaction was positive this might be considered good evidence that syphilis was present. When the reaction was negative the conclusion was not so positive that syphilis was absent. He had examined several syphilitic fetuses or infants dying very shortly after birth in which the reaction was negative. He explained this by the fact that the infection was overwhelming and hence the formation of antibodies had not taken place. When they obtained doubtful reactions or what they called a positive-negative reaction in nervous conditions they were coming more and more to acknowledge them as positive. He cited an instance of a child, born of a mother who had an active lesion, which appeared to be perfectly healthy but who was now developing a gumma.

Dr. John E. Welch of New York called attention to the possible sources of error in the technique of these tests. In the original Wassermann method one source of error was the complement content of guinea pig serum. Frequent bleeding of the same pig led to a decrease in the complement content of the serum. In jaundiced cases a weak Wassermann reaction was sometimes obtained. Many positive Wassermann reactions were obtained in children suffering with malnutrition and with bile salts in the blood. These sources of error should be kept in mind.

**Clinical Reports of Ten Cases of Pulmonary Tuberculosis in Children Treated with Mixed Bacterins.**—Dr. Louis C. Ager of Brooklyn presented this paper. He said that although recent investigators had shown that the tubercle bacillus alone might produce destructive tissue changes in the lungs it was generally believed that such changes were the result of secondary invasion of various pyogenic organisms. If this were true and if the pathological process was entirely local the use of bacterial vaccines was indicated theoretically at least. The reason advanced for introducing into the circulation the toxins of a disease from which the patient was already suffering was that the reaction to the toxin was largely local and that the active acquired immunity was also largely local. If, therefore, a general systemic reaction could be produced they might expect a systemic immunity. In spite of recent reports of Pettit and Brown, the writer said he was convinced by the investigations of Avery that the secondary organisms were practically never found in the blood of phthisical patients, even in the terminal stages. If that were true pulmonary tuberculosis was almost entirely a local process and the mixed vaccines ought to be of benefit. With these facts in view he chose ten patients all showing active lesions and representing different types and stages of the disease. He administered Mulford's Mixed Influenza Bacterin containing the bacilli of influenza, of Friedlander, of the pneumococcus, streptococcus, and staphylococcus, as well as diphtheroids and the *Micrococcus catarrhalis*. This product was used because it contained the organisms occasionally found in washed specimens of sputum. After relating the histories of these cases he concluded that no definite reactions were observed in any case. A careful study of the four hour rectal temperatures showed no special changes in any case. In four cases there were slight changes that might have been attributed to the treatment. The only positive deduction that could be drawn from these observations was that this particular bacterin bore no special relation to these particular cases. It was quite possible that autogenous vaccines might have shown a definite reaction.

Dr. Edward G. Whipple of Rochester said that he regretted that Dr. Ager had not met with better success. When tuberculosis was sufficiently far advanced to be recognized there was present a mixed infection, but until they could calculate the amount of infection and the amount of bacterins they could not expect to get definite results. Tuberculosis was only truly incipient in childhood and it was important that the pediatrician should unite in the campaign for clean milk and sanitary surroundings for children. It was only by keeping the resistance of the child up to the proper level that they could hope to combat tuberculosis in childhood. It did not seem to him that the giving of mixed bacterins was scientific medicine or good therapeutics. Again, until they found a specific treatment that could be put in the hands of the general practitioner they must continue to use general treatment. The plan they had used in the Tuberculosis Hospital of Rochester was the treatment of the tuberculous patient in the institution and preventive measures. The treatment of tuberculosis in children did not differ from that in adults. In their institution the child received a school education in an open air school. Some were under home treatment, but this had proved unsatisfactory. They sent children from homes where a parent was afflicted with the disease to a preventorium where they did their school work in the open air, took proper rest, and graduated exercises. After they left the school a follow-up system was used. Relapses were often due to home conditions. They removed adenoids and enlarged tonsils, treated diseased ears, and corrected orthopedic defects. The anemic, poorly nourished child nearly always had tuberculosis. He, therefore, made a plea for the segregation of adults, the medical examination, not inspection, of school children; the care of the tuberculous child for one year, and insisted that these measures should be applicable to the rich and the poor alike.

Dr. H. J. Brayton of Rochester said he had had no experience with the bacterins, but thought they might be useful in cases of the chronic type. Cases doing well on the routine treatment should be let alone. Improvement was especially noticeable among the children in the open air schools. If the children could be under observation longer better results would be obtained. In their sanatorium they isolated the advanced cases and kept the incipient cases by themselves. They got most of their cases in the incipient stage. The cases should be kept under observation for one year. Dr. Matthias Nicoll of New York said that he felt gratified that Dr. Whipple had spoken against this so-called specific therapy, but he had not spoken strongly enough. Such a shotgun mixture of bacteria was absolutely absurd.

Dr. L. Emmett Holt emphasized what Dr. Nicoll had said. He did not agree with the writer of the paper that such results should be published. Such therapy did harm by tempting the unwary to pin faith on a specific to the neglect of routine measures of treatment. Furthermore, it was not wise to employ such a commercial product and the recommendation of such a product of any firm was out of place in such a meeting.

**Rational Treatment of Hemorrhagic Affections in Children.**—In the absence of Dr. Le Grand Kerr of Brooklyn this paper was read by title.

Dr. John E. Welch of New York, in discussing the subject of hemorrhagic affections in children, said that the manner in which the bleeding began was familiar to all. Any persistent bleeding in an anemic child called for definite and well-directed treatment. Different methods had been employed, as the injection of normal human blood serum, or the serum from animals, as the horse, the sheep, etc. It was well known that serums from a different species caused a reaction. This was illustrated by the fact that diphtheria antitoxin produced a slight reaction in 80 per cent. of the cases injected. The effort to overcome a serum sickness was an additional strain on the system of a child already depleted by loss of blood. With regard to the etiology of hemorrhagic disease, he stated that he did not believe that it was a blood disease, but rather a disease of the general tissues produced in many ways and causing a change in the endothelium of the blood vessels. The increased blood pressure, the altered state of the blood, and the change in the endothelium were secondary to some general disease which might be the result of mineral poison or of syphilis. After a long period of tissue starvation bleeding began. After reviewing the theories of coagulation advanced by Dr. Howell of Johns Hopkins as evidence that the hemorrhage was not due to conditions in the blood itself, Dr. Welch advocated the use of normal human blood serum because it had no untoward effects, was easily obtained, and very effective. In anaphylaxis there was a reduction in the complement of the blood and a decrease in blood pressure and the addition of the serum from an animal further reduced the complement and hence was a mistake. He believed that normal human blood serum served to control hemorrhage chiefly through its value as a food. In a series of premature infants upon which he had made observations those who were given normal human blood serum survived. They were now working on the problem of serum precipitation by acetone and ether in the hope of obtaining a product easily soluble in water and which would control hemorrhage, and successful work in this line had been reported.

Dr. L. E. LaFétra said he thought it would be of interest to some of them to know of the work that Dr. Schloss had done in the use of blood from a member of the family or a near relative. He had used the whole blood in fifteen or twenty cases. It was surprising how readily the whole blood was absorbed without clotting when injected into the back. It was entirely absorbed in two days. Dr. LaFétra cited the case of a boy, seven years of age, who was suffering from severe purpura. He was given an injection of serum, then a transfusion,

after which he improved for three weeks. He then relapsed and thirty c.c. of whole blood was injected four times during a period of two months, since which time the boy had remained well. In two cases of hemorrhage in new-born infants 20 c.c. of whole blood was used the first injection, and 30 c.c. for the second, after which there was complete cessation of the bleeding. The great advantages offered by the whole blood were that it took less time to procure it and that it did not take as large a quantity of blood as when the serum alone was used. There was no reaction following the administration of human blood. A combination of the method of Dr. Welch and that of Dr. Schloss could be used, giving the first injection of whole blood and following that by an injection of serum.

**Diphtheria.**—Dr. Joseph R. Culkin of Rochester read this paper. He stated that all agreed that the bacteriological examination was the only sure way to diagnose diphtheria, but when one got a negative report, or even two or three of them in a case of manifest diphtheria, it was important for the clinician to rely upon his own diagnosis and to use antitoxin freely until the case was cleared up, when he might get a late positive culture. A negative culture might lead a family prejudiced against antitoxin to forbid its further use, and so valuable time might be lost in waiting for more cultures. When the writer met this frame of mind he made it a practice to use a large initial dose in the first instance. He had had negative cultures reported in cases that afterward developed paralysis characteristic of diphtheria and in laryngeal cases with no membrane in the pharynx. He would forbid the use of antiseptic until after the culture was taken. There was nothing to be said against the culture method but the necessity of relying upon the clinical diagnosis and treating the case energetically while waiting for a return from the culture should be emphasized. The nasal cases were a potent factor in keeping up the spread of the infection and should be sought for with great care, especially in institutions. Immunity was powerless against those cases as the immunity ran out. Conditions which produced epthelial necrosis and much membrane which resembled diphtheria should teach the clinician to rely upon well-made cultures for his final diagnosis, but he should use antitoxin until the diagnosis was established. Dr. Culkin advocated plenty of antitoxin given as early as possible. In marked pharyngeal and tonsillar cases at least 10,000 units should be used; in nasopharyngeal cases 15,000 units, and in laryngeal cases 20,000 units, to be repeated in twelve hours if results were not apparent. It was well to examine the lungs which might be invaded as the throat was clearing; a fatal termination could only be avoided in bronchopneumonia by large doses of antitoxin. Immunizing doses of antitoxin might be given to the same individual a number of times without causing any untoward symptoms. The prejudice against antitoxin did not seem to abate and all sorts of conditions were charged to it, but the use of a sufficient dose early would do much to diminish this feeling. In cases seen in an almost moribund condition, it was futile to use antitoxin unless one was prepared to use enormous doses at once, as less than these large doses only tended to have antitoxin charged with the deaths sure to follow.

Dr. Matthias Nicoll, Jr., of New York said he congratulated Dr. Culkin on his firm attitude in regard to the importance of antitoxin at the earliest possible moment that diphtheria was suspected. No real harm to the patient would follow a dose of antitoxin in any event and frequently a grave danger might be averted. In severe cases the clinical findings should be the guide of the physician and on no account should a delay of eighteen hours be tolerated while waiting for culture returns. As regarded the inconsistencies of the culture reports, they were sometimes not properly taken. Purely laryngeal cases, especially at first, frequently gave negative results if the swab was taken in the usual way. If, however, the swab was slightly bent and a culture made directly from the interior of the larynx this error would be largely avoided. Young children convalescing from scarlet fever who had a profuse purulent nasal discharge, especially in a hospital, should have a large dose of antitoxin immediately. The importance of making direct smears in addition to a culture was not generally recognized: this was especially applicable to the obscure, ulceromembranous cases referred to by Dr. Culkin. In regard to immunization they gave 1,000 units of antitoxin to every case of scarlet fever on admission to Willard Parker Hospital; if the patient was exposed to diphtheria the dose was repeated at weekly or longer intervals. The same procedure was carried on in measles epidemics. The amount of antitoxin suggested by Dr. Culkin was somewhat larger than was given as a routine measure at the contagious disease hospitals in New York. He believed that more than 10,000 units in children was rarely necessary, since with this dose the blood was known to contain an amount of antitoxin which was more than a hundred fold sufficient to neutralize any conceivable amount of antitoxin which was capable of being neutralized. In regard to a second dose of antitoxin in twelve hours, Dr. Park had had charts prepared to demonstrate the time required for antitoxin to reach the blood stream and the amounts of antitoxin contained in the blood at different periods of time. It was found that the antitoxin reached the blood stream slowly but steadily, increasing up to the third, fourth, or fifth day after the injection and then slowly decreasing. Therefore, if a second dose was given twelve hours after the first the beneficial effects attributed to it really were due to the continued absorption of the first dose, the second only gradually contributing its share. A second chart showed the results in four cases of diphtheria which received 10,000 units of antitoxin intravenously. It showed very plainly that in this method a very large amount of antitoxin went into the blood stream at once and immediately decreased, yet there was a sufficient quantity in the blood for a week or more. If one felt that the initial dose was not sufficient a second dose might be given but it should be given intravenously. Antitoxin should be given intravenously in cases which were in desperate straits. With regard to the beneficial effects of antitoxin in complicating bronchopneumonia Dr. Nicoll said he could not conceive of antitoxin influencing disease invariably caused by an organism other than that for which it was a specific. Dr. Nicoll said he was not prepared to state that intravenous injection was perfectly safe, but in their wide experience they had never had an accident.

Dr. Jerome S. Leopold of New York said he, too, wished to congratulate Dr. Culkin and to emphasize what he had said in regard to early and large doses of antitoxin. If a child was exposed at the end of ten days after an immunizing dose of antitoxin a second immunizing dose should be given. There was a difference of opinion as to the size of the dose in different localities. In Boston they used very large doses. As to the quarantine of diphtheria cases, interesting observations had been made in Germany where it was found that the sediment of centrifugalized urine contained diphtheria bacilli in practically every case, even after three months. The question arose as to whether all cases did not have bacilli in the blood and as to how long they might remain infective.

Dr. Thomas J. Walsh of Buffalo said he also wished to add his commendation to the stand taken by Dr. Culkin, especially in regard to the nasal cases and the measles cases which so often showed diphtheria on culture. Anaphylaxis was a very real thing and in those cases that were asthmatic von Pirquet had suggested the von Pirquet test and if a marked reaction took place anaphylaxis should be looked for. Another way was to give a small dose first and note the effect; then follow it by a large dose. In case anaphylaxis did occur atropine should be administered. The use of antitoxin intravenously was bound to come to the front. The preservative in the antitoxin if given intravenously might have a bad effect. The intravenous method was not an easy one. The intramuscular method was less painful than the subcutaneous and the intragluteal injection would be found convenient. Abroad they had a trick of performing extubation by suddenly tipping the child forward and often the tube, slightly loosened, would fly out. A point about tracheotomy was that of making a transverse incision between the rings of the trachea. This technique was easier than that in general use and gave satisfactory results. In the neuritis of diphtheria, the paralyses, heart lesions, etc., antitoxin was the best remedy they had thus far found. By introducing a spiral into the tracheotomy tube they could remove the membrane more easily. In diphtheria digitalis had been found useful in auricular fibrillation.

**Recurrent Vomiting in Children.**—Dr. A. Clifford Mercer of Syracuse read this paper. He stated that of the etiological theories of recurrent vomiting advanced that of acidosis as revealed by the presence of one or more acetone bodies in the urine had received most attention. With diminished power of oxidation the catabolism of carbohydrates became inadequate for the simultaneous combustion of fats. The catabolism of fat was therefore incomplete. Acidosis resulted and the acid products found their way into the urine as acetone, diacetic acid, or beta-oxybutric acid. Sedgewick found that creatinuria was associated with acetonuria, while the light colored stools passed before and during the attack indicated hepatic insufficiency. Acetonuria was found to be present however, in a large percentage of infants after

a change of diet. A temporary inability to digest carbohydrates seemed to cause carbohydrate starvation and this appeared to cause the acidosis. From a neurotic standpoint recurrent vomiting seemed to be related to migraine. The fact that the excretion of acetone by the lungs, kidneys, or skin sometimes did not occur during the prodromal stage but only after the onset of emesis and was present at and after the crisis supported the view that acidosis was an incidental effect rather than the fundamental cause of recurrent vomiting. In the first attack of recurrent vomiting diagnosis was liable to be difficult. In later attacks with a history of recurrence the diagnosis was easier. A gouty or neurotic family history, a high-strung, nervous child, recurrent attacks of violent, prostrating, wasting, uncontrollable, but self-limited vomiting without organic lesion, but with acidosis revealed by the odor of acetone in the breath, vomitus, or urine, following some marked offense to the nervous system rather than an obvious dietetic error, was a pretty definite and distinctive picture of the condition. In well-developed cases all methods of treatment had failed to stop the vomiting. The alkaline treatment had been remarkably successful in some hands and a failure in others. If the prodromata were recognized, the diet curtailed, the intestinal tract cleared and bicarbonate of soda given freely an approaching attack might be prevented. Successful abortive treatment suggested prophylactic treatment along the same lines. All factors that might be concerned in any way in causing recurrent vomiting should be eliminated and all available means of building up the resisting power of the child should be taken advantage of.

Dr. George E. Clark of Skaneateles said he wished to report a case of recurrent vomiting. The trouble began with indigestion when the infant was two months of age and was repeated at the age of five months when cow's milk was first given. Disturbances occurred at various periods during infancy. At the age of six years the attacks recurred at intervals of three months. The parents were very careful of this child's diet and he felt sure that the trouble was not due to error of that nature. The attacks in this instance seemed to be precipitated by nervous excitement. The only thing that gave any relief was menthol and this offered but slight help. Arseniate of strychnine was used to keep up the pulse. Experiments with dogs and cats had shown that excitement resulted in suspended digestion for the time being, and if this was the case why could not interference with the functions of any viscera be explained in the same way.

Dr. Charles L. Hincher of Rochester discussed the problem of the etiology of this affection and suggested that possibly the adrenals have something to do with the subject as they played an important part in sugar metabolism.

Dr. Thomas S. Southworth referred to the ease with which excitement gave rise to these acute attacks. The vomiting indicated the attempt of the system to eliminate some unfortunate product of metabolism. It would seem, then that active free catharsis was indicated. When free catharsis was established the vomiting stopped. The desired result might be obtained from calomel in some cases. Castor oil could not be given. The one laxative that seemed to fit the situation was citrate of magnesium. If the child could not tolerate large doses a tablespoonful could be given every twenty minutes or half hour. A certain amount might be vomited but a certain amount would pass through the pylorus. It had been his experience that the vomiting subsided within twenty-four hours in his cases, though it might be that the cases were of a mild type.

Dr. A. Clifford Mercer said he only wished to emphasize the necessity of eliminating early in the attack and of studying the prodromes and treating the patient before the attack.

Dr. DeWitt H. Sherman of Buffalo said he wished to emphasize what had been said about watching to prevent the attack, but he wished more particularly to emphasize what had been said about the neurosis. He cited three cases in which a cure was obtained by having the patients' eyes examined and fitted with properly adjusted glasses. The condition of the eyes might influence the metabolism in children.

Dr. Mercer said he could confirm what Dr. Sherman had said in regard to the importance of having the eyes examined in these cases.

**The Differential Diagnosis of the Paralyses Occurring in Early Life.**—Dr. Henry A. Gribben presented this paper. He stated that it was his purpose to formulate a working guide in the diagnosis of those conditions with which the pediatrician was most often confronted. He roughly divided the extremity paralyses into three groups: the pseudo palsies, the spastic, and the flaccid. Among the pseudo palsies, the most common conditions were immobilities due to pain. Injuries to bones, joints, and muscles would often simulate paralysis, polyarthritis, and osteomyelitis among the inflammations and scurvy and rickets among the diseases. The pain paralyses were positively differentiated by single points of tenderness, evidences of local injury, and the ability to move fingers and toes. It was important to consider the true and false palsies together. The false paralyses of rickets might be differentiated by the fact that motion was not absolutely lost and by the other stigmata of this disease. The second and spastic group was well illustrated by the cerebral palsies. Rigidity of the extremity involved, exaggeration of the deep reflexes, no reaction of degeneration, and no atrophy, were symptoms common to all types and were distinctly opposite to the symptoms of the flaccid type. General spasticity meant cerebral lesion or lesion of the lateral or posterior tracts of the cord. Flaccidity meant anterior cord disease or peripheral nerve lesion. The cerebral group might be hemiplegic, paraplegic, or diplegic, very rarely monoplegic. Sachs' classification according to the onset was a distinct aid in diagnosis. The prenatal forms due to defects and intrauterine injuries was best known as Little's disease and were paraplegic or diplegic with characteristic cross-legged progression. This term also applied to birth injuries. The acquired form might be due to hemorrhage, embolism, or thrombisis, and was more likely to be hemiplegic. There was also the acute form of meningoencephalitis which gave rise to the same symptoms.

The spinal type of spastic paraplegia was differentiated by the fact that it was distinctly hereditary, came on later than the eighth year, was slowly progressive, lacked the mental deficiency so common to birth palsies, and had no history of birth trauma. Other lesions giving rise to spasticity were cerebral tumor, abscess, and cyst. The spastic paralyses due to cord lesions might be grouped under injuries, inflammations, and diseases. Under injuries were included traumatic hemorrhage, fractures of the vertebræ, and compression due to spinal caries. Myelitis was the type of inflammation, tumor tubercle, and gumma of disease. Taking myelitis as the type they had the positive signs of sensory disturbance, sphincteric involvement, and involuntary spasmodic twitchings. These symptoms were pathognomonic of myelitis. Syphilis of the cord might have all the symptoms of myelitis, but with the difference that it involved the greater portion of the cord and the intensity of the symptoms was slight, as compared with the extensiveness of the area involved. There were certain rare conditions which should be tucked away in the subconscious mind, such as disseminated sclerosis, Friedreich ataxia, and hysteria. The third, or flaccid, group was made up of spinal and peripheral nerve lesions. Flaccidity, atrophy, diminution of reflexes and change in electrical reaction were the cardinal signs that distinguished this group. Anterior poliomyelitis must be differentiated from multiple neuritis as the peripheral type. In the subacute form of poliomyelitis the picture might be that of progressive muscular atrophy; until retrogression it might be impossible to distinguish the true condition. In Landry's paralysis, usually rare in children, the rapidly ascending palsy and involvement of the abdominal and thoracic muscles would be positive signs to differentiate it from both poliomyelitis and polyneuritis.

Dr. Wisner R. Townsend said that the paper was so complete that it needed no discussion. In order to bring out the difference between the flaccid and pseudo types he had watched the cases that came into the hospital for errors in diagnosis. The striking fact thus brought out was that many came with the wrong diagnosis because of lack of previous history. A careful history gave one a very different idea when he came to examine the case. He had seen rachitic cases in which there was complete loss of motion. He had ceased to attempt to use electricity because it was so terrifying to the children. He had produced two attacks of hysteria in this way and found the electricity of little use. He had learned more from the careful examination of individual muscles. Peripheral neuritis was rather rare in young children. Paraplegia had sometimes led them to suspect Pott's disease and this diagnosis had proved correct. In hysteria a lack of coordination or of a proper balance between the symptoms helped the physician to make a diagnosis. The ordinary tests, heat, pins, etc., he said, also had their value.

(*To be continued.*)

## Books Received.

*The* MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading; but this is with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

VACCINE THERAPY. By R. W. ALLEN, M.D., B.S. Cloth; fourth edition; 444 pages; price $3.00 net. P. Blakiston's Son & Company, Philadelphia.

KLINIK FÜR PSYCHISCHE UND NERVÖSE KRANKHEITEN. By ROBERT SOMMER. 7 Band, 4 Heft; paper. Carl Marhold, Halle.

MEDICO-LEGAL EXAMINATIONS AND THE WORKMEN'S COMPENSATION ACT, 1906. By SIR JOHN COLLIE, M.D., J.P. 128 pages; cloth; price $2.00 net. Wm. Wood & Co.: New York City.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION, for the year 1912. Vol. 28. 342 pages; cloth. Printed for the Association, Philadelphia.

MECHANICAL VIBRATION. By M. L. H. ARNOLD SNOW, M.D. 476 pages; cloth; illustrated. Price $3.50. The Scientific Authors' Publishing Co., New York.

ALCOHOLISM. By FRANCIS HARE, M.D. Cloth; 269 pages; price $2.00 net. P. Blakiston's Son & Company, Philadelphia.

WHO'S WHO IN SCIENCE, International 1913. Edited by H. H. STEPHENSON. 572 pages; cloth. J. & A. Churchill, London.

THE CHILD. By "The Hope Farm Man." 192 pages; paper. The Rural Publishing Company, New York.

VERÖFFENTLICHUNGER der Robert Koch-Stiftung zur Bekämpfung der Tuberkulose; Herausgegeben vom Vorstand der Stiftung. Part III. Paper; 68 pages; illustrated. Von Kurt Bludorn, Georg Thieme, Leipzig.

VERÖFFENTLICHUNGEN der Robert Koch-Stiftung zur Bekämpfung der Tuberkulose; Herausgegeben vom Vorstand der Stiftung. Part IV. Paper; 54 pages; illustrated. By B. MOLLERS. Georg Thieme, Leipzig.

DIE LUETISCHEN ERKRANKUNGEN DER BAUCHORGANE. By HOFRAT DR. TH. HAUSMANN. Paper; 68 pages. Carl Marhold, Halle a S.

OCCASIONAL PAPERS ON THE PREVENTION OF SOME COMMON DISEASES IN CHILDHOOD. By J. SIM WALLACE, D.Sc., M.D., L.D.S. 103 pages; cloth; price 3 shillings sixpence net. Bailliere, Tindall & Cox, London.

THE BRADSHAW LECTURE ON THE BIOLOGY OF TUMOURS. By C. MANSELL MOULIN, M.A., M.D., F.R.C.S. 39 pages; cloth; price 2 shillings net. H. K. Lewis, London.

A DICTIONARY OF TREATMENT. By Sir WILLIAM WHITLA, M.A., M.D., LL.D. Fifth Edition; cloth; 1204 pages; price $16.00 net. Bailliere, Tindall & Cox, London.

STARVING AMERICA. By ALFRED W. MCCANN. Cloth; 270 pages. F. M. Barton, New York.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Volume 37, for the Year 1912. Cloth; 502 pages; illustrated. Wm. J. Dornan, Printer, Philadelphia.

HANDBOOK OF DISEASES OF THE RECTUM. By LOUIS J. HIRSCHMAN, M.D. Illustrated; 2nd Edition; price $4.00 net; 339 pages; cloth. C. V. Mosby Company, St. Louis.

THE PRACTICE OF UROLOGY. By CHARLES H. CHETWOOD, M.D., LL.D. Illustrated; cloth; 816 pages. William Wood & Company, New York.

ORGANIC CHEMISTRY. By HOWARD D. HASKINS, A.B., M.D. Second Edition. 430 pages; cloth; price $2.00 net; illustrated. John Wiley & Sons, New York.

THE DEVELOPMENT OF THE HUMAN BODY. By J. PLAYFAIR MCMURRICH, A.M., Ph.D., LL.D. Fourth Edition; cloth; illustrated; price $2.50 net; 495 pages. P. Blakiston's Son & Company, Philadelphia.

LA BIOLOGIE SYNTHÉTIQUE. By STEPHANE LEDUC. Paper; 217 pages; illustrated. A. Poinat, Paris.

HOUSEHOLD BACTERIOLOGY. By ESTELLE D. BUCHANAN, M.S., and ROBERT EARLE BUCHANAN, Ph.D. Cloth; price $2.25 net; 536 pages; illustrated. The Macmillan Company, New York.

GENETICS. By HERBERT EUGENE WALTER. Cloth; price $1.50 net; 272 pages; illustrated. The Macmillan Company, New York.

PRISMS. By JAMES THORINGTON, A.M., M.D. Illustrated; cloth; 144 pages. P. Blakiston's Son & Company, Philadelphia.

PROCEEDINGS OF THE CANAL ZONE MEDICAL ASSOCIATION, for the Half Year April to September, 1911. Volume IV, Part 1. Paper; 238 pages. I. C. C. Press, Quartermaster's Department, Mount Hoep, Canal Zone.

## Medical Items.

**Water in Relation to Diuresis.**—D. Cow states that the amount of urine excreted after the ingestion of a given quantity of water depends (within limits) not only on the amount of water ingested but also on the fluid content of the tissues at the time. Water given by mouth and absorbed from the gastrointestinal tract is incomparably more active as a diuretic than the same quantity of water injected subcutaneously or intravenously. There is some substance, possibly of the nature of a ferment, which is taken up by water during the process of absorption from the alimentary tract; and this substance, either directly or indirectly, has a marked diuretic action.—*Proceedings of the Royal Society of Medicine.*

**Lecithin and Cholesterin and the Growth of Tumors.**—T. B. Robertson and T. C. Barnett conclude that cholesterin, whether suspended in dilute alcohol or in sodiumoleate solution, when injected directly into tumors causes a marked acceleration both of the primary and of the metastatic growth. The acceleration of the growth of the primary tumor by cholesterin is most evident in the premetastatic stage. Lecithin, when injected in the form of an aqueous emulsion directly into tumors, diminishes the tendency to form metastases, retards the metastatic growth when it does occur, and in some instances also retards the primary growth. The retardation due to lecithin is most evident in the metastatic stage. Simultaneous injection of strontium chloride solution into the tumors does not appreciably affect the action of the lecithin.—*Journal of Experimental Medicine.*

**Experimental Bone and Joint Tuberculosis.**—J. Fraser concluded from third experiment that direct infection of the medulla of a long bone is unlikely to lead to the development of a tuberculous osteomyelitis. Inoculation of the interior of a joint with tubercle bacilli readily produces tuberculosis of the synovial membrane. From such an infected joint the epiphysis or metaphysis of the bone becomes diseased. Infection of the arterial heart blood does not result in the local development of tuberculosis of the bones or joints. Infection of the main artery supplying a limb leads to the development of tuberculous disease of certain of the joints of that limb. Direct infection of the nutrient artery does not result in tuberculous osteomyelitis of the bone.—*Journal of Experimental Medicine.*

**Influenzal Encephalomeningitis.**—G. Rosenthal reports a case of this condition occurring in a boy seventeen years of age. The disease began suddenly with fever, headache, and vomiting and the patient rapidly passed into a semicomatose condition. Lumbar puncture revealed a clear cerebrospinal fluid which was not under excessive tension. It contained a slight trace of albumin, a few red blood cells, and a few altered polynuclear leucocytes. From this fluid there was isolated an organism having all the characteristics of the cocco-bacillus of Pfeiffer. Death occurred on the seventh day of the disease. Among the peculiarities of the clinical manifestations of this case were the absence of constipation, photophobia, and rigidity of the neck muscles. In view of the intensity of the headache, and of the nervous depression which terminated in coma, the author believes that the main pathological condition was an encephalitis accompanied by certain meningeal symptoms.—*Journal de Médecine de Paris.*

**The Local Action of Lead Upon the Intestinal Movements.**—P. D. Siccardi notes that in saturnism there is a diminution in the rhythmical intestinal movements and in the intestinal tone. This diminution is the result of the direct action of the lead upon the fibrocellular and muscular layers of the intestinal wall.—*Archivio per le Scienze Mediche.*

**Researches on Tubercle Bacilli.**—H. Petersen states that fresh potato furnishes an excellent culture-medium for tubercle bacilli. But tubercle bacilli of high virulence, such as the bovine, grow very poorly upon this medium. The intraocular vaccination of rabbits furnishes a ready means of determining the virulence of tubercle bacilli.—*Zeitschrift für die Tuberkulose.*

**Tubercle Bacilli in the Blood.**—A. de Verhizier employed a number of methods, including Rosenberger's and that of Staühli-Schnitter, in the examination of the blood for tubercle bacilli, in 15 patients affected with pulmonary tuberculosis. In no instance was he able to detect in the blood any of the microorganisms. He quotes Nicolle of the Pasteur Institute as follows: "The notion of a bacillemia in tuberculosis has been given too much prominence of late. In the majority of cases this bacillemia does not exist. The blood serum is so bactericidal that only in rare instances are the microorganisms present in the blood.—*Revue de Médecine.*

CLINICS, DEPARTMENT OF PUBLIC CHARITIES

CALENDAR, MAY, 1913

MONDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Surgery | Dr. Dawbarn | 2:30 P.M. |
| | Dermatology | Dr. Fordyce | 3:00 P.M. |
| *Cumberland St. Hospital,* Brooklyn | Surgery | Dr. Pallister | 2:30 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |
| *Kings County Hospital,* Brooklyn | Gynecology | Dr. McNaughton | 9:00 A.M. |

TUESDAYS

| | | | |
|---|---|---|---|
| *Neurological Hospital* | Neurology | Dr. Byrne | 9:00 A.M. |
| *N. Y. Children's Hospital Schools, R. I.* | Orthopedic | Dr. Ogilvy | 10.00 A.M. |
| *Cumberland St. Hospita,* Brooklyn | Gynecology | Dr. Burnham | 1:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M. |
| *Kings County Hospital,* Brooklyn | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Barber | 11:00 A.M. |
| | Genito-urinary Surgery | Drs. Morton and Fraser | 2:00 P.M. |
| *Coney Island Hospital* | Surgery | Drs. Fiske, Bogart, Murphy and Lack | 10:30 A.M. |
| | Medicine | Drs. Hall, Nash, Hegeman and Byington | 3:30 P.M. |

WEDNESDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Surgery | Dr. Dawbarn | 9:00 A.M. |
| | Medicine | Dr. Quimby | 1:30 P.M. |
| | Genito-urinary Surgery | Dr. Greene | 2:00 P.M. |
| | Obstetrics | Dr. Sbears | 2:00 P.M. |
| *Metropolitan Hospital,* May 7 | Surgery | Drs. Ostrom and Harrington | 2:30 P.M. |
| May 7 | Medicine | Drs. Sewell and Thomas | 2:30 P.M. |
| May 7 | Genito-urinary Surgery | Dr. Carleton | 2:30 P.M. |
| May 7 | Laryngology and Rhinology | Dr. Foster | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Maloney | 10:00 A.M. |
| *Cumberland St. Hospital,* Brooklyn | Ophthalmology and Otology | Dr. Schenck | 4:00 P.M. |
| *Kings County Hospital,* Brooklyn | Dermatology | Dr. Winfield | 1:00 P.M. |
| | Orthopedics | Dr. Truslow | 9:00 A.M. |
| | Orthopedics | Dr. Napier | 2:00 P.M. |
| *Coney Island Hospital* | Pediatrics | Drs. Beck, McQuillan, Pendleton and Van Wart | 3:30 P.M. |

THURSDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Medicine | Dr. Evans | 9:00 A.M. |
| | Medicine | Dr. Brooks | 2:30 P.M. |
| | Gynecology | Dr. Stearns | 2:00 P.M. |
| *Cumberland St. Hospital,* Brooklyn | Gynecology | Dr. Burnham | 1:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| *Kings County Hospital,* Brooklyn | Obstetrics | Drs. Commiskey and Judd | 10:00 A.M. |
| | Otology | Dr. Alderton | 1:00 P.M. |
| | Surgery | Dr. Barber | 2:00 P.M. |
| *Coney Island Hospital* | Gynecology | Drs. McEvitt, Mills, Mayne and Rankin | 10:30 A.M. |
| | Surgery | Drs. Fiske, Bogart, Murphy and Lack | 3:00 P.M. |

FRIDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Ophthalmology | Dr. Wiesner | 9:00 A.M. |
| | Laryngology and Rhinology | Dr. Dougherty | 2:30 P.M. |
| *Neurological Hospital* | Neurology | Dr. Abrahamson | 9:00 A.M. |
| *Cumberland St. Hospital,* Brooklyn | Surgery | Dr. Pallister | 2:30 P.M. |
| | Surgery, Oral | Dr. Shea | 4:30 P.M. |
| *Kings County Hospital,* Brooklyn | Gynecology | Dr. McNaughton | 9:00 A.M. |

SATURDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Pathology | Dr. Larkin | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Walsh | 2:00 P.M. |
| *Kings County Hospital,* Brooklyn | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Neurology | Dr. Brush | 11:00 A.M. |
| | Surgery | Dr. Barber | 11:00 A.M. |
| | Medicine | Dr. Stivers | 3:30 P.M. |

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**The Hygienic Significance of Bovine Tuberculosis.**—A. Weber emphasizes the danger to human beings of tuberculosis in cattle. During childhood infection occurs not infrequently by way of the alimentary canal and may cause death through local changes or through systemic infection. In exceptional instances the alimentary type of infection may give rise to the usual forms of tuberculosis, both in children and in adults.—*Zeitschrift für die Tuberkulose.*

## Therapeutic Hints.

**Treatment of Gouty Migraine.**—The following prescription was recommended by Debout:

℞ Extract of colchicum, 3 grams.
Quinine sulphate, 3 grams.
Powdered digitalis, 1.5 grams.

This is to be divided into 30 pills, one of which is to be taken every evening.—*Bulletin Général de Thérapeutique,* April 8, 1913.

**Senile Neurasthenia.**—R. Oppenheim refers to the physical and psychical depression so frequently observed among the aged. In treating this condition the first requirement is to regulate the diet. This should be preferably one of milk, cereals, and vegetables. For the loss of appetite he gives:

℞ Tincture of condurango, 15 grams.
Tincture of gentian,
Tincture of calumba, āā 10 grams.

Of this mixture 20 drops should be given 15 minutes before meals. Or a tablespoonful of the following may be given in half a glass of water:

℞ Tincture of condurango, 2 grams.
Syrup of bitter orange peel, 120 grams.

The insomnia may be combated by means of simple hygienic and hydrotherapeutic measures. A good sedative is the following:

℞ Zinc oxide,
Extract of valerian,
Extract of hyoscyamus, āā 0.05 gram.

This should be administered in pill form before dinner and again 2 hours later. Once or twice a week the second pill should be replaced by a dose of the following:

℞ Trional, 0.75 gram.
Heroin hydrochloride, 0.005 gram.

This may be taken in a cachet, with a warm infusion such as an infusion of orange flowers.

The tonic treatment includes the administration of lecithin either by mouth or subcutaneously. Phosphide of zinc may be prescribed in the form of granules of 4 milligrams each, or as follows:

℞ Glycerophosphate of sodium, 0.25 gram.
Phosphide of zinc, 0.002 gram.

The hypophosphites may be administered subcutaneously. For this purpose there may be used ampoules containing the following:

℞ Calcium hypophosphite, 0.005 gram.
Sodium hypophosphite, 0.01 gram.
Potassium hypophosphite,
Magnesium hypophosphite, āā 0.005 gram.
Strychnine arsenate, 0.001.
Neutral distilled water, 1 c.c.

The contents of one ampoule may be injected daily.—*Le Progrès Médical,* April 12, 1912.

**The Treatment of Facial Hemispasm by Means of Local Injections of Magnesium Salts.**—Sicard and Leblanc have reported their results with this method of treatment. They have found that the good effects are only transitory, and are not to be compared with those following the local injections of alcohol in gradually increasing doses.—*La Presse Médicale,* April 9, 1913.

**The Use of Horse Serum in the Treatment of Tuberculous Lesions.**—Morel Cavallée reported at the meeting of the Medical Society of the Hospitals, of Paris, April 4, 1913, that he had obtained good results with the use of horse serum in the treatment not only of external tuberculosis but also of the early stage of pulmonary tuberculosis (*anémie prégerminative*).—*La Presse Médicale,* April 9, 1913.

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## Original Articles.

### CONSULTATIONS WITHOUT SCARS.*

BY JOSEPH D. BRYANT, M.D., LL.D.,

NEW YORK.

THIS evening, with your indulgent permission and cooperative patience, I hope to interest you in a matter of pseudopathological interest, expressed, however, in an exaggerated sense.

Since scars are the common sequels of traumatism of the soft parts in every phase of active life, I am disposed this evening to utilize the fact in a metaphoric way, of course, as relating to the effect on the intracranial soft parts, of the unethical traumatisms sometimes inflicted by medical men on one another, while associated in professional consultations. As a rule, however, these peculiar traumatisms are inflicted by the thoughtless, sometimes by the assumptive, or by the absorptive, again by the assertive and vainglorious whose common aim in life to make a noise may be foretold, as is the thunder by the lightning flash. And it is fair to say, of the illuminating feature in these instances, that "heat lightning" followed or not by a faint response, may add something to expectation, or conclusion to vain desire, especially in dramatic instances. The outcome of a thoughtless act or of an absorptive desire, tinctured or not by studied effort, is somewhat the same in every instance, wherever medical brethren and patients are directly concerned. For, figuratively speaking, they all lie down together for a while; when apparently all arise to go forth, and lo! one is missing, and the strange sudden changes in the symmetry and proportions of one of the party point out the temporary abiding place and the fate of the missing one—the patient; who was absorptively and possibly in a benevolent spirit, transmuted from a post-primal case to one of quiet sinful abduction. In other words, not altogether unfamiliar, the consultant "bit the hand that fed him"; and, quite naturally, a scar of permanent and of painful kind was established where before friendship and trusting confidence were enthroned. The abiding sense of universal justice, going with fair play in every circumstance, is profoundly shocked when obliged to realize that faithlessness infects her followers, especially those who can no longer justly claim a right to the emulation that everywhere falls to the lot of just and honorable men.

I sometimes wonder what certain men would do were the law forbidding the stealthy absorption of other men's chickens made inoperative during the holiday time. This wonder is of course a relative one, and provides that then certain men may poach upon each other, the same as certain medical men now appear to do. Judging from current report and a little from vital experience, one is persuaded that more of unethical transgression happens every few days than one who is prompted by rare notions related to professional conscience, can willingly concede. The knowledge of unethical things is acutely infectious and rapidly spreads through the means of the specially sensitized atmosphere, abounding in phraseology rarely intended to encourage either the spread of truth or the correction of error.

It is no doubt fitting at this time to speak something of the ethical meaning of "consultations" as expressed in authoritative manner. Substantially, according to the Century Dictionary, "the deliberations of two or more persons with a view to some decision, especially a deliberation in which one party acts as advisor to the other" forms a consultation in the practical sense. In any instance this form of expression is of general application, as applied to the aim sought in medical consultations. Now, it seems suitable to introduce certain expressions borrowed from the Principles of Ethics of the American Medical Association, relating to the proper conduct of medical consultations. It is stated therein that: "In every consultation the benefit to be derived by the patient is of the first importance. All the physicians interested in the case should be frank and candid with the patient and the family. There never is occasion for insincerity, rivalry or envy and these should never be permitted between consultants." Again: "When a physician has attended a case as consultant he should not become the attendant of the patient during that illness, except with the consent of the physician who was in charge at the time of the consultation."

And just here it seems proper to remark that the consultant himself in these instances is not expected to "get busy" in calling this enlightening provision to the open-minded attention of those whom he would be pleased to favor in the thus artfully quickened though somewhat embarrassed state of mind of the friends of the patient. And, too, he should not assume control of the patient until after the former attendant has been released in a becoming manner. Personally, I have not yet attended a patient whom I had first served as a consultant, though not infrequently requested to do so. It is well in such instances, especially when tormented with acquisitive desire, to stop and philosophize a bit and thoughtfully repeat the wise expression of Aurelius:

"Never esteem anything as of advantage to thee that shall make thee break thy word or lose thy self-respect."

I am disposed to quote yet further, but briefly, from the Principles of Ethics relating to specialists in consultation:

"When a patient is sent to one specially skilled in the care of the condition from which he is thought to be suffering, and for any reason it is impracticable for the physician in charge of the case to accompany

*Paper read before the Practitioners' Society, April 4, 1913.

the patient, the physician in charge should send to the consultant by mail, or in the care of the patient under seal, a history of the case, together with the physician's opinion and an outline of the treatment, or so much of this as may possibly be of service to the consultant; and as soon as possible after the case has been seen and studied, the consultant should address the physician in charge and advise him of the results of the consultant's investigation of the case. *Both these opinions are confidential and must be so regarded by the consultant and by the physician in charge.*"

Apropos of the foregoing text, a foreign close friend of mine in many ways, related to me some time ago the following experience which he regarded as falling quite naturally under the fostering care of the Ethical scripture just recited. In this instance, he said, a young, intelligent and long devoted female patient afflicted with temporary deafness of one ear with roarings of annoying kind therein, came to him for relief. Because of discreet and obvious ethical reasons the patient was given an explanatory note to a distinguished aurist with the request only that he make careful examination of the mechanism of the ear, and that a written report thereof be returned by the patient. Accordingly the patient promptly presented to my friend an open note of the consultant, held with trembling fingers, containing a prescription and the further knowledge that he was going to test the blood on the following day for the hemaglobin content. The patient was frightened, indeed, by the uninvited conversational and written announcements of the consultant and most respectfully declined to remain in or go further in that direction. Had the consultant limited his activity to the written request, my friend and the patient would have been spared much annoyance and the consultant himself, of being notified that the blood had been examined in all essential respects the day before his special services were requested. The consultant surely indulged in needless activity, perhaps, however, from a misunderstanding. In any event, he learned that, according to the philosophy of Epictetus, "That everything has two handles, one by which it may be borne, another by which it cannot."

Another unethical instance worth the telling happened in the experience of a colleague of mine, who referred a wealthy patient afflicted with a localized, very annoying prurient ailment, to an eminent consultant, especially learned in the treatment and cure of such troubles. The learned gentleman, after careful examination of the case in all respects, predicted a prompt cure and took entire charge of the patient. The affliction, however, proved far more stubborn than had been estimated, whereupon the consultant thoughtfully explained to the patient substantially as follows: "I could have cured you before this had you fallen under my care at the outset of the trouble." Following this remark, the patient in a shrewd though innocent fashion, said to my colleague, "Our distinguished physician not being as smart as he thought, seems inclined to divide the responsibility with you and me, which I thought you ought to know." To my colleague in this instance it seemed that more was "meant that met the ear" and therefore, as he some time ago informed me, "The itching spots in my practice have since been referred for treatment to a more thoughtful and perhaps more skilled authority." Not a large nor troublesome scar resulted from this consultation, but a disfigurement of ethical confidence followed, to which such parentage should not have given birth. The following case is of interesting nature in ethical matters.

In this instance a young, earnest physician devoid of guile and who regarded others of his profession to be like himself, as fair and honorable in all respects, requested a consultant of honorable report to see a case without his presence, because of a sudden imperative demand which he himself could not forego. Also, he expressed to the consultant in a brief sealed note his ideas of the illness and his plan of treatment, in a requisite manner. For the purposes of this instance, it is only necessary to add that the consultant received this note at the hands of the patient in question. The note was read by the recipient and the patient was carefully examined. Immediately thereafter the consultant in a note of his own, expressed views adverse to those of the physician who had called him in the case, in all essential respects. And for some reason or excuse the enclosure, though properly addressed, was left for the attending physician on a nearby table—unsealed. It should be quite apparent that no reasonable degree of human restraint of personal nature could have been quite sufficiently powerful to prevent the patient or the friends, in this seductive instance, from digital transgression on the sacred confines of that frankly fashioned and openly adjusted envelope. Whether or not depraved intrusion was practised I do not know, but do know what I believe, for according to Montaigne "nothing is so firmly believed as what we least know." And, as corroborative evidence of the soundness of my faith, soon after this a readjustment of the medical personnel in that particular family came to view; the family physician going an the retired list and the consultant taking command. Whether or not the open note was premeditated, hence viciously unethical, or due to thoughtlessness, paucity of salivary secretion, or to the stationer's thrift or carelessness, I am not able to declare, but the prompt corroborative activity displayed by the mutually interested parties and the effective results, incline me to know what I believe, and, therefore again I will anchor my faith to the wisdom of Montaigne. Unethical offenses of this kind are indeed few because of the sparseness of practitioners thus disposed. The scars, however, incident thereto and those of ethical offenses of lesser magnitude, are readily seen and estimated by their repugnant aspect, both by the profession and the lay public. The self-respect of the former, and the admiration and confidence of the latter, are thereby stricken with an abiding sense of disfavor and distrust.

The kind of consultation thus far noted may, for the purpose of differentiation, be designated as "domestic or household consultation," and therefore is of special social importance. In contradistinction to this class another, styled "official consultation," applicable to hospitals, prisons, etc., and usually dignified by "an order of the court," or, by the desire of one of highly exalted station, is adapted for the purposes of similitude. Whether or not either of these brief momentous entanglements begets the right or the privilege on the part of either physician included in the case, to disregard the ethical features of a common medical consultation is, I dare say, a matter open to discussion, for it is claimed that some physicians in either of these circumstances too often act regardless of established ethical relations respecting the patient, the friends, and even the medical brother in charge; other physicians, so

far as is possible, show their good breeding in these circumstances by ethical conduct like that decreed for ordinary consultation. I fear, however, that those who would disregard proper professional conduct in the one instance doubtless would sin correspondingly in the other. For, "How use doth breed habit in a man" was long ago told by Shakespeare.

An old friend sadly complained to me not long ago, saying that a "self-sufficient medical examiner empowered by the court" and "propelled by vain desire" had needlessly and offensively gained access to a patient in a private room of a public hospital, and had examined the patient without the knowledge or consent, or even the expectation, on the part of any one of the various medical men of the hospital connected with the case. Surely the law contemplates that its agents shall, when possible, act in an orderly ethical manner, and consequently in accordance with the accepted rules and regulations of civilized control of hospital and penal institutions. Not, however, in obedience with the whims of unduly inflated medical agents, whose assumptive importance is likely over-estimated in these, as perhaps in other professional activities.

For the privilege of recital of the following apt example I am indebted to a physician of long standing with whom, now and again, I had had intimate friendly and professional relations. The interesting and unusual incident in question especially relates to an exalted personage, of the highest official station, who desired information related to health of a convict who was confined in prison for a crime against the government. According to my friend, a physician who then resided not one hundred and fifty miles from here, was unofficially requested by the President of the United States to examine the prisoner at the earliest convenience as bearing on his physical state, with the view of pardon. It was requested that the examination be made quietly, so as not to further stimulate the hopes or fears of family and friends, and, incidentally, of those who, for various other reasons, might be profoundly interested. The physician bearing a presidential letter of introduction to the warden of the prison promptly came into action. Then it was that this physician was told that the medical officer in charge of the prison was in bed at home, because of illness. The latter officer, however, over the 'phone, gave permission for immediate examination, but on inquiry expressed the hope that he could be present on the morrow. For this reason the examination was accordingly deferred. But as the morrow afforded no relief to the medical officer, he in a written communication desired that the examination be no longer delayed, and that he be favored with a report of the findings and the conclusion. This request was complied with, and both were freely and favorably discussed by the physicians. It appears that, as the result of these ethical attentions, the report to the President himself was delayed for about twenty-four hours, but without any physical detriment whatever, as could be easily foretold. As my friend finally remarked in the telling of the aforegoing, "You will observe an abundance of words in this narrative, and, perhaps, without adequate reason therefor, but the few more that follow will leaven the whole and justify the exercise of scrupulous care in ethical ways, even in pondrous instances. For," said he, with pronounced emphasis, "the indisposed physician in charge was grateful, indeed, for the unexpected ethical courtesies shown to him, and the President, too, when advised of the reasons for the brief delay, said, 'You did exactly right, just as I would expect under the circumstances.'" That this visiting physician was happy and profoundly gratified with the outcome, further said my friend, needs no proof and the moral is plain. Do what is right, for, according to Abraham Lincoln, "right makes might."

Since it would seem that sufficient has been said already to establish the equity of the ethical principles thus far expressed, we might now well turn briefly, without illustrations, to the ethical relations of one physician to another's patient. In this matter I bespeak your careful attention and prudent thought to the following extract from the Principles of Medical Ethics of the American Medical Association, for it is in such instances of unethical offence that the profoundest sinister impressions are made upon the minds of the lay members of society:

"The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician."

In directing your attention to this self-evident ethical doctrine, I, perhaps, needlessly remind you that the word *ethical* is the lawful offspring of the somewhat more formal expression—Ethics. This latter expression, in the reminiscent thoughts of yet many of our ilk, has not altogether a cheerful sound. And especially is this true of those whose memory links it with the word "Code"—"Code of Ethics"—a dual combination now obsolete, but formally for a time, associated with vigilant, robust contention on the part of the real and pseudo giants of our profession.

The need for "principles of ethics" was denied or disregarded by many, indeed, of our profession and decidedly so by those whose natural inclinations were opposed to the notion that they themselves and others like them in this respect needed a guiding light of special human kind to direct or remind them of a proper way to treat those whose aims and objects run near together and parallel with their own, therefore with the natural tendency to collide. I have heard it said, less of late than before, as likely have many here, that good breeding, good sense and the inherent comprehension of one's duty to his professional kind in ethical need, make special guides to the purpose oppressive, humiliating, and not of any use. That they themselves can better avoid and adjust such experiences at their birth and in the period of their activity, through the inherent sense of justice than through the agency of prepared and predigested principles of action, printed, bound, and promulgated for this special purpose. Such as these are quite unmindful of the force of the common truth, that established plans of action are the foundation of commendable success; and that hasty action too often breeds confusion and distrust. Is it not certain, however, that one whose acts are prompted both by acquired and inherent justice need have little fear of just rebuke from anyone? As yet how keen may be the smart of some who more than a quarter of a century ago opposed with bitter zeal the code of medical ethics, and of some who less than ten years ago opposed the change from "the code of ethics" to the "principles of ethics," by State referendum, with an affirmative vote of over 3,300 to a negative of 197. It is not strange, and in fact quite

natural, that some of those who "bore the burden and heat of the day" in ethical contests, are yet not quite reconciled to the outcome and have a lurking smart akin to that which at times seems keenly to touch the hearts of a proud and honest people, long after the close of fraternal strife.

The aforegoing illustrations of ethical lapses of our profession, emphasize in no uncertain way the need of the coordinating and restraining of the open and hidden forces that would thus determine our actions, as opportunity affords. The coordination of aggressive strength, restrains the forces that would beget and support physical and moral servitude. The coordination of dissimilar forces determines for honorable action. So long as devious fields of human effort and ambition shall have pleural membership, sooner or later restraining control will be needed to maintain and promote a proper sense of equity and a suitable regard for the rights of each member. The demands of necessity, the dictates of custom, and the besetting influences of desire or determination, cause wondrous changes in social order in brief, unexpected, and surprising ways. Consequently, it would seem wise that rules of action in special things should be established and reasonably employed in the settlement of common differences, and, better yet, in the prevention of distrust and dissension in the ranks of our profession. As was some time ago pointed out by the writer, the effct on the lay mind of the unethical practices of the members of our profession is a matter of such importance that it would seem proper to admit that the station of medicine in the estimation of many thoughtful people is not quite up to that of other learned callings closely relating to the comfort and welfare of the body politic, notably those of theology and law. And when one unbiasedly estimates the degrees of esteem exhibited by the public for the learned avocations, it is hardly possible to persuade oneself that the medical profession yet enjoys equal station with that of the others already mentioned. I am not ignorant of the fact that impassioned pleadings, embellished by sublime sentiments, are, on state and social occasions, given birth by eloquent tongues and facile pens, prompted by grateful appreciation of the beneficence and glory of the medical calling. Nor am I blind to the truth that comparatively humble, silent tributes of similar regard are more numerous than the former, and also, that because of their earnest halting fervor they often give stronger evidences of gratitude than do those blessed with ampler expression. The modest homage indicating the gratitude of the humble is usually more wholesome and abiding than that pictured by the fervid assurances of those of higher station. That esteem and thankful good-will should be a large part of the rewards of our profession is both proper and just, and will maintain so long as life and comfort rule the senses of mankind. And few, indeed, there are whose experience with the somber side of life's physical trials, who would not gladly give enthusiastic approval of these sentiments. And the lower creatures, too, often instinctively testify of their delight and love by caressing the hand that mitigates their distress, or by championing the cause of one who comforts them in disaster.

The influences of adverse nature contributed by members of a profession itself obviously play an important rôle in fairly estimating professional standards. The degree of sincerity evinced by the members of a profession by the promptness and equity of the adjustment of their ethical affairs and the absence of discourtesy exercise a profound influence on the sayings and feelings of those of less pretentious engagements. It is properly asserted that a chain is no stronger than its weakest link, and by the same standard of measure, the station of a profession can be estimated by the character and conduct of its constituents. The standard of the civilization of a nation is often misunderstood, because of the conclusions of unripened judgments based on the repellent examples of its constituents that occasionally come into view.

Too frequently, for the dignity and station of our profession, one hears complaining utterances of disappointed members whose estimates of success are often measured more by a greed for vulgar gain than by the desire for a wreath because of benevolent endeavor. The hunger of unrequited ambition for recognition, begetting pessimistic fault-finding and ungracious speech, supplemented by invidious claims of the disgruntled and the loud clamors of the self-assertive for those things which by common consent men gain from merit, are often as discomforting and degrading as they are pitiful.

That the kind spirit of a gracious and loyal membership perpetuates an unscarred advancing status in medicine, is as well known to lay people as that unethical and restless membership inhibits or scars the progress in commendable things in all forms of human endeavor. And, when it shall be possible for the members of our profession to keep step with the constructive harmony begotten and sustained by the precept of the Golden Rule, then will the need for a rule of Medical Ethics have become for the time a needless, empty requirement.

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## OSTEITIS DEFORMANS (PAGET'S DISEASE).*

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Sir James Paget in his original memoir on osteitis deformans presented a study of five cases in November, 1876, before the Medico-Chirurgical Society of London, to which he added seven more in the Transactions of that society in 1882. In a review of the literature in the *American Journal of the Medical Sciences* in 1901, Packard was able to collect sixty-six cases reported to that date. This list was augmented by Higbee and Ellis who found 158 cases reported prior to January, 1911. Since that date S. F. Jones has described in the Medical Record of December 28, 1912, another case occurring in a young woman, so the case herein reported may be regarded as the one hundred and sixtieth.

This case, shown in the accompanying illustrations, is that of a woman who entered the Cornell University Medical Clinic in Bellevue Hospital in the latter part of January, 1913. She is 60 years of age; a native American; employed in general housework. Unfortunately her mind is so childish that it is impossible to obtain any history from her which is of the slightest value. For example, she attributes her bone deformities to fractures, claiming to have walked around with a newly fractured thigh six years ago, without surgical treatment! She admits, however, that when 15 years of age her head appeared uncommonly large, and that she ceased menstruating at 40 years of age. She ap-

*A case reported to the Practitioners' Society, April 5, 1913.

pears further to have had the general pains in the extremities which characterize the early stages of the disease, but they have long ago ceased, nor has she at the present time any subjective symptoms whatever, having entered the hospital for an attack of bronchitis which completely subsided.

Upon examination the deformities of the cranium, pelvis and bones of all the limbs are very striking. The following measurements were recorded.

Total height, 145 cm.; crest of ileum to heel, 83 cm.; crest of ileum to vertex, 62 cm.; acromium to tip of middle finger, 64.5 cm.; circumference of thorax at nipple line, 74 cm.; circumference of head, 58.5 cm.; arch over vertex between ears, 31.5 cm.; arch over forehead between ears, 31.5 cm.

The patient exhibits a slight dorsal kyphosis. The pelvic brim is wide and the abdomen is protuberant and globular—the *ventre de batracien* of the French writers. On attempting to stand erect with the legs in the natural position, they present such extreme elliptical outward bowing that the knees cannot be approximated within 10 cm. and the feet are everted almost at right angles to the normal position. Hence the patient cannot balance herself in the normal erect attitude but manages to walk by crossing the right leg in front of the left, thus forming a figure-of-eight as shown in the accompanying picture, Fig. 1. The femora are markedly bowed outward and forward, after the usual manner of this disease, and the accompanying *x*-ray, Fig. 2, shows them to be irregularly hypertrophic, being thickest in the upper two thirds, and thinnest at the junction of the middle and lower third. The humeri, particularly the left one, are in like manner bowed outward and irregularly hypertrophied, Fig. 3. The bones of both forearms and legs and the clavicles present similar enlargement and distortion, but in lesser degree. The ribs are unaffected, as well as the bones of the hands and feet. The cranial vault is exaggerated and the parietal and frontal bones especially are broad, thick, and grossly uneven on the surface. The postero-temporal and parietal regions are so prominent as to depress the ears and give the face and head a wedge shape. This is accentuated by a narrow-pointed protuberant inferior maxilla. Such an extreme case is easily distinguished from rickets. There is no deformity of the sternum, beading of the ribs, enlargement of the epiphyses or craniotabes, and the *x*-ray pictures are diagnostic in showing the irregular hypertrophic osteitis, particularly of the cranium, humeri, and femora. Furthermore, the disease has developed during adult life.

The general health of the patient is excellent. She is entirely free from pain or tenderness over the affected bones, and the detailed physical examination of the viscera reveals no abnormality excepting in the heart a slight mitral regurgitation. There is, however, advanced arteriosclerosis and the blood-pressure averages 170 mm. There is no abnormal pigmentation of the skin or hypertrophy of the soft parts such as is usually observed in acromegaly. The Wassermann reaction is negative.

None of the numerous theories to explain the origin of osteitis deformans has met with general acceptance. It is true that a majority of those who have studied the few recorded cases, led by Lannelongue and Fournier, have favored the idea that it arises from hereditary syphilis, and the theories of its origin in trauma, a rheumatic diathesis, a trophoneurosis, or sclerosis of the nutrient arteries, have been abandoned. But the chemical analysis of the bones in syphilis and osteitis deformans is quite different, and the progress of the latter disease is not decisively modified by antisyphilitic treatment, nor is there any very definite evidence in the majority of cases that the lesions are parasyphilitic manifestations. Attempts to refer the disease to disordered functioning of the thyroid, suprarenal or pituitary bodies have similarly failed of confirmation in most of the autopsies recorded, although in one or two cases there have been found changes in the pituitary body.

Paget called attention to the coincidence of malignant disease with osteitis deformans, and five of eight patients, whose life histories he obtained, died of sarcoma or carcinoma. But this form of osteitis

Fig. 1.—Osteitis deformans, showing bowing of legs and the only position in which standing or walking was possible.

is very chronic and often is not established until late in life when malignant disease is common. Moreover, in a study of the 158 cases recorded prior to January, 1911, Higbee and Ellis were able to discover only fourteeen instances of malignant disease. The following year another example of the combined diseases was reported from Montreal by Gruner, Scringer, and Foster, occurring in a male 56 years of age. (*Arch. of Internal Med.*, June, 1912. Vol. 9, pp. 641-656.) In this case, however, 6 years elapsed between the appearance of the osteitis and the sarcoma and the sarcoma invaded only a few of the many bones involved in the osteitis. In this case, also, it is interesting to note, there was marked atrophy of the pituitary body.

All arguments considered, the conclusion of André Chastel, who reports two cases in his Paris Thesis of 1910, appears justified, namely, that osteitis deformans is an independent, well-defined disease, "the theory of the etiology of which has yet to be established." In the few cases in which metabolism observations have been conducted, nothing distinctive has been determined, possibly because they have not been conducted over long enough periods for so chronic a disease.

The most comprehensive study of the disease published since Sir James Paget's original account is given by Jules Vincent in his Paris Thesis of 1904, (Maladie ossieuse de Paget) in which he presents an interesting discussion of previous articles, and includes eight new cases, several of which are pictured. This writer, emphasizing the early nerve symptoms of the disease, namely the muscular cramps, fatigue pains, exaggerated reflexes, and occasional incontinence of urine and local hyperthermia, inclines to the hypothesis that the disease may originate as a central trophoneurosis, although in the few autopsies which have been made, a thorough study of possible pathological changes in the nervous system has not been undertaken. Following is a brief summary of the pathological anatomy of the disease as given by those who have opportunity to perform necropsies.

The muscles attached to the affected bones are pale and atrophic, and the ligaments occasionally have been found ossified. In the earliest stage of the disease the bone tissue appears somewhat soft and fragile, but as the disease advances it becomes firm. The periosteum may remain normal or exhibit increased vascularity. In stripping it, adjacent portions of bone tissue are sometimes detached.

Fig. 2.—Showing bowing of left femur, hypertrophy of upper portion and rarefaction in lower third

The bone tissue becomes porous through enlargement of the superficial Haversian canals. The central medullary canal becomes rarefied. The surface of the long bones is frequently uneven or mammillated, and the normal bony prominences are exaggerated. Here and there are small areas which are so friable that they may be indented by firm pressure with the finger. The affected bone thus becomes uneven in surface and more or less nodular and spongy.

The diaphyses of the long bones become voluminous through exaggerated development of the

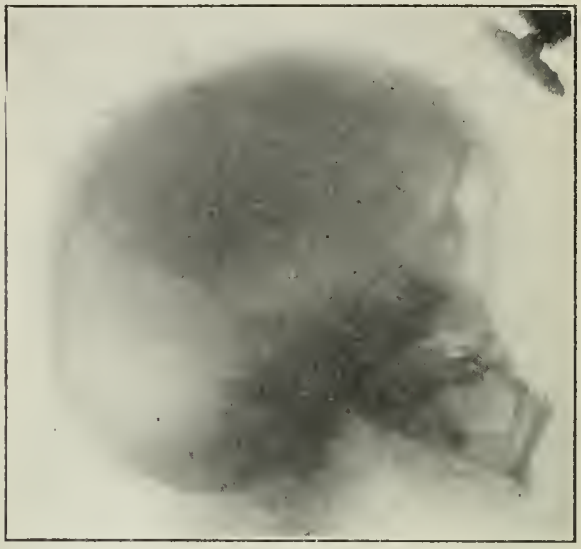

Fig. 3.—Showing breadth of calvarium and increased thickness.

compact substance although at the outer surface, and near the medullary canal, the bone is more or less rarefied. In the intermediate zone of the long bones there are islands of tissue which remain firm and solid. In parts the vascularity appears increased. The medullary cavity becomes irregular in form, being here and there dilated, and elsewhere encroached upon by new bone formation. The marrow is vascular and red, resembling that of fetal bone. The spongy tissue of the epiphyses is rarefied, and at the cartilaginous surface sometimes presents fatty degeneration and necrosis.

The external surface of the cranium presents large elevated plaques. The inner surface is smooth or finely granular. The sutures are obliterated. The bones at the base of the skull are usually not thickened. On section the diploë is found to have disappeared, and the remaining tissue presents an irregular structure of alternating areas, some of which are spongy, others as dense as ivory. The ribs have occasionally been found to present rarefaction and their cartilages may be partially ossified.

Microscopically there is seen a progressive absorption of the bone tissue in the vicinity of the medullary cavity and Haversian canals, with a compensatory formative osteitis, and beneath the periosteum large porous periostoses.

34 East Thirty-first Street.

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**Tubercle Bacilli in the Blood in Surgical Tuberculosis.**—M. Krabbel, employing Schnitter's method, was able to detect tubercle bacilli in the circulating blood in 12 out of 18 cases (66.6 per cent.) of bone tuberculosis; in 1 out of 5 cases (20 per cent.) of gland tuberculosis; and in 1 out of 4 cases (25 per cent.) of skin, mucous membrane, and tendon tuberculosis. The smaller proportion of positive findings in gland tuberculosis in contradistinction to bone tuberculosis is explained by the fact that in the former condition the process is largely a local affection from the mouth and tonsils, while in bone tuberculosis the tuberculous material gets into the blood stream. The demonstration of tubercle bacilli in the blood in cases of surgical tuberculosis may be of eminent diagnostic value in cases that do not give any evidence of pulmonary lesions. —*Deutsche Zeitschrift für Chirurgie.*

# THE FUNCTIONS OF THE PINEAL GLAND.*

By CHARLES L. DANA, M.D.,

AND

WILLIAM N. BERKELEY, M.D.,

NEW YORK.

WITH REPORT OF FEEDING EXPERIMENTS.

By H. H. GODDARD, Ph.D., AND WALTER S. CORNELL, M.D.,

VINELAND, N. J.

INTRODUCTORY, BY DR. DANA.

A SUMMARY of the various theories regarding the functions of the pineal gland is given in W. v. Bechterew's "Die Funktionen der Nervencentren," vol. 2, page 1182, 1909. This author presents also an account of its anatomical relations and some notes of pathological observations bearing on physiology.

An account of the comparative anatomy of the gland is given in Wiedersheim's "Comparative Anatomy," pp. 202 and 205, 1908.

The phylogeny of the gland is fully discussed by Prof. Patten in his recent important work on "The Evolution of the Vertebrates and Their Kin," pp. 113 and 136, 1912.

A summary of the anatomy and functions of the gland and of recent experimental work upon it is given in Swale Vincent's work on "Internal Secretion and Ductless Glands," p. 405, 1912.

The symptomatology of the tumors of this gland is given, together with a summary of recent literature, in a valuable monograph by Bailey and Jelliffe on "Tumors of the Pineal Body" (*Archives of Internal Medicine*, 1911).

The recent appearance of the above literature makes it unnecessary to go into an extensive review of the subject here. What is known at present of the pineal gland comes from the following sources: experiments on animals, experiments with extracts of the gland, clinical and pathological studies, and a consideration of the embryology and phylogeny. Dixon and Halliburton (*Quarterly Journal of Exp. Phys.*, 1909, ii, p. 283) found that intravenous injections of the extracts caused lowering of blood pressure. Cyon (Die Gefässdrüsen, p. 226, 1910) found such injection in small doses had no action on blood pressure. In large doses the heart beat increased in strength and became slower and irregular.

Ott and Scott (Ott's Contributions to Physiology, Part XIX, 1912) state that pineal extract causes vasodilatation in the genitalia of male cats. Ott also states that the aqueous extract causes first a fall and then a rise of arterial pressure, that it stimulates intestinal movement, and also the contractile power of the uterine muscle; that it causes glycosuria in rabbits. (*Monthly Cyclopedia and Medical Bulletin*, September, 1911). Ott also found (Contributions to Physiology, Part IX) that it caused diuresis and increased volume of the kidney through vasodilatation. Eyster and Jordan (*American Journ. of Phys.*, xxvii, 4) found that the aqueous extract of the pineal body of sheep caused a fall of the mean arterial pressure by dilating the intestinal arteries; also that it caused temporary diuresis.

FIG. 1.—Showing pineal gland (X), and its relations

Cyon stimulated the pineal body of rabbits and produced changes in its form and position due to the presence of unstriated muscle in this organ. He thinks that the gland may act mechanically in controlling the flow of cerebrospinal fluid through the aqueduct of Sylvius and may thus have some function in regulating intracranial pressure (*Pflüger's Archiv*, 1903, xcviii, p. 327). This seems a fanciful theory and can hardly apply to man, for I find no description of muscular fibers in the human pineal, though Nicholas (*C. R. Soc. de Biol.*, Paris, 1900) and Dimitrova (*Thèse*, Lourain, 1901) describe a number of muscle fibers in lower mammals.

Exner and Boese (*Deutsche Zeitschrift für Chirur.*, 1910, cvii, p. 182) destroyed the pineal gland in 95 adult rabbits. Twenty-two animals survived and were observed for some time, without any change from the normal.

A study of the *clinical history and pathology* of

*The work described in this report was greatly aided and largely accomplished by a grant from the Rockefeller Institute.

the gland leads to more definite results. Hempel, in a case of cancer of the pineal gland in a man of twenty-four, observed the development of obesity, followed by marked atrophy of fatty tissue (cancer cachexia?).

Marburg reported the case of a patient who had marked obesity. There was a mixed tumor of the pineal, the hypophysis and other blood glands being normal.

In Raymond and Claude's case the patient, a boy of ten, became fat and large for his age. Autopsy showed a glioma of the pineal.

In Frankl-Hochwart's case, a boy of 5½ was stout and tall for his age and at five had reached the size of a boy of nine or ten, with marked premature development of the genitals. He was also precocious mentally. The lesion was a teratoma of the pineal, the size of a walnut (5 by 2.5 by 2.9 cm.).

In Oestreich and Slawyk's case, a child of four grew rapidly, and the genitals were enlarged. The lesion was a cystic psammo-sarcoma of the pineal.

Heubner reports the case of a boy of 4½ years with excessive and premature body and genital development.

Ogle's case was that of a young boy with excessive and premature development of the genitals.

In Gutzeit's case, a boy of 7¾ showed undue bodily development.

Pelizzi reports two cases with precocious physical and genital development. He calls the pineal syndrome macrogenitosomia (*Revista ital. de neuropat.*, 1910).

Among 57 cases collected 13 occurred in children of 13 years of age or younger. Among these in two there were no notes. Of the remaining, all but one showed some disturbance of growth.

In nearly all reported cases there was increased intracranial pressure and often involvement of the corpora quadrigemina and adjacent parts. Intracranial pressure alone, however, as we see it in hydrocephalus from various causes, including the different kinds of brain tumors, does not lead to obesity or premature genital or somatic development. Thus it seems that the literature of the diseases of

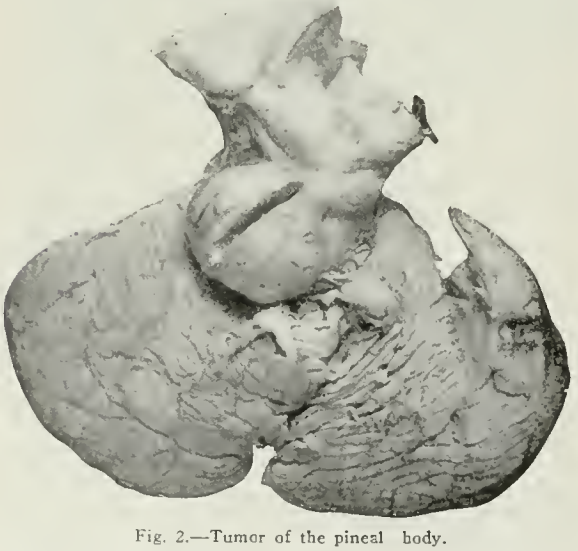

Fig. 2.—Tumor of the pineal body.

the pineal gland gives some evidence that lesions of this body, occurring in the young, cause peculiar disturbances of nutrition, such as increased growth of adipose tissue, stimulation of the development of the sexual and of the somatic and perhaps mental functions.

*Embryology and Phylogeny.*—In order to justify the further expenditure of time and money on what is generally thought to be a vestigial and functionless organ, I submit some facts regarding the origin of this gland.

The embryology of the pineal gland, with certain

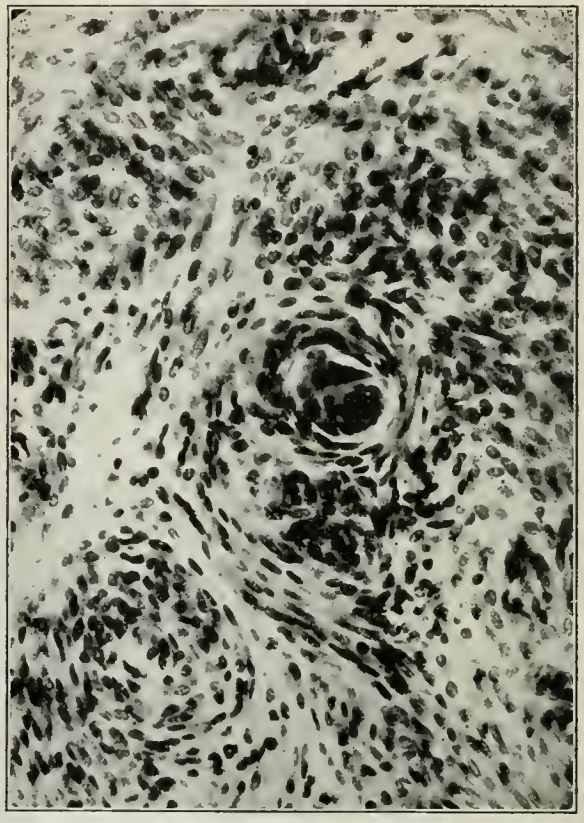

Fig. 3.—Tumor of the pineal gland. (F. C. Wood.)

suggestions as to its function, has been carefully studied in the last ten years, and the results given in a succession of five papers which have appeared in the *American Journal of Anatomy*, as follows: 1. C. S. Minot, 1901. 2. "The Paraphysis of the Common Fowl," F. Dexter, 1902. 3. "The Development of Paraphysis and Pineal Region in Necturas Maculatus," Dr. Warren, 1905. 4. "The Morphology of the Pineal Region in Teleosts," R. J. Jerry, 1910. 5. "The Development of the Paraphysis and Pineal Region in Reptilia," Dr. J. Warren, 1910-11.

PATHOLOGICAL AND PHYSIOLOGICAL EFFECTS ATTRIBUTED TO THE ACTIVITIES OR DISORDERS OF THE

| Pituitary Body | Pineal Body |
|---|---|
| Adiposity | Adiposity (later sometimes a marked atrophy of fatty tissues) |
| Sexual changes | Early development of sexual organs and functions |
| Genital atrophy and infantilism | Early bodily and mental maturity (Macrogenitosomia of Pellizi) |
| Acromegaly and gigantism | *Physiological action of extracts of the gland* |
| Polyuria | Contradictory reports as to pressor and depressor effect on blood-vessels. |
| Control of carbohydrate metabolism | Stimulation of unstriped muscular tissue of intestines, uterus, pupil |
| Lowered temperature | Vasodilatation of genitalia and kidney |
| Coordinate action with other glands | Transitory diuresis |
| *Physiological action of extracts of the gland* | Glycosuria |
| Pressor and depressor effects on blood-vessels | Stimulation of metabolism(Berkeley) |
| Galactagogic effect | |
| Stimulation of muscles of pupil, uterus and intestines | |
| Modifications of metabolism and bodily growth | |
| Modification of carbohydrate metabolism | |

Prof. Minot states in his article in 1901 that "The pineal region"—that is, a certain portion of the roof of the forebrain, "shows a series of structures which from their anatomical characteristics appear to be distinctly concerned in the formation of a fluid in the cavities of the brain." "We may assume," he adds, "that the choroid plexus supplies the main bulk of the fluid, but the gland-like origin of the epiphysis and paraphysis indicate that they supply with various chemical substances the encephalic fluid."

Dr. Minot adds that it is for the physiologists and pathologists to determine what the function of this fluid is.

The pineal gland is given great attention by Prof. Patten in his recent original and important work on the "Origin of Vertebrates." He there discusses the phylogeny of the epiphysis, and gives to this organ great significance in the development of invertebrate into vertebrate life. He shows that the pineal gland is, as has been usually taught, a vestigial eye—an eye that had function in late invertebrate and early vertebrate life, when it forms what is known as the parietal eye. "This eye as a functional organ is," Prof. Patten says, "the most ancient of all sense organs and becomes a characteristic in the early history of the arachnid phylum."

The vertebrates all have remnants of such a parietal or median eye developed from the second neuromere, while the lateral or present functional eyes are developed from the third or fourth neuromere. This parietal eye of vertebrates is homologous with the parietal eye of arthropods. In these latter animals this eye was an important visual organ until the lateral eye developed. During the evolution of arachnids into vertebrates there was a period when the parietal eye was a functioning organ. These vertebrates were monoculate and depended solely on this parietal eye for vision. The parietal eye is the only one now present in tunicates. In the oldest ostracoderms the lateral eyes are absent or nearly so. In lampreys the parietal eye is well developed in the larvæ, while the lateral eyes are functionless.

The parietal eye was originally a double organ and the *ganglia habenulæ* of vertebrates represent the ganglionic roots of the ancient parietal eyes of the arachnids. While the embryology of the pineal eye indicates plainly that it is the vestigium of an old visual organ, there is no evidence of the existence of special sense structure even in a rudimentary form in the anatomy of the pineal gland in the human embryo. The secretory or metabolic functions of the gland if present are due to supplanting tissues, epidermic or vascular, not to any special sense residuum.

The pineal gland in man has become distinctly a glandular organ with secreting cells and probably a few nerve fibers. It tends to undergo deterioration at about the seventh or eighth year, but up to that time it may be supposed to have some function.

*Experimental.*—The experiments carried out by us were the following:

1. The nucleoproteids and entire gland extracts were obtained and injected into the veins to test the effect on the blood pressure.

2. They were also injected into young animals—rabbit, guinea-pigs—for a long time to determine the effect on nutrition.

3. The whole gland was fed to young animals.

4. The whole gland was fed to defective and retarded children.

It was agreed that only the glands of young animals would be worth while experimenting with, and Dr. Berkeley made arrangements to secure the glands of young bullocks. He obtained the nucleoproteids of the pineal gland and made experiments with them by injecting them into growing guinea-pigs and he tested the pressor qualities of the gland by injecting it into veins of the dog. The details of his results are given by him.

Since the beginning of the summer of 1911 the investigation has been confined almost entirely to feeding experiments. Dr. Berkeley has been feeding guinea-pigs and rabbits, and he and I also have been feeding the gland to certain selected children. Our plan was to feed it only to young children if possible under eight or nine years and to children who seemed to be cases of simple retardation without notable anatomical defect and without epilepsy. Children in the retarded grades of the public schools were used for this purpose as well as private cases.

As a work of this kind would take a long time before we could reach results, we conferred with Dr. Goddard, of the New Jersey Training School for the Feeble-Minded at Vineland, New Jersey. Dr. Berkeley supplied the gland and Dr. Goddard and Dr. Cornell undertook to use it. They fed the gland to twenty-one children, watching these and comparing them with twenty-one controls. This work was carried on for nearly eight months. There seemed to be such definite results that we have thought it worth while to make a preliminary communication concerning what has already been done.

Dr. Berkeley tells in his article of the apparent good results and of the enthusiasm aroused by the use of the gland among the teachers of certain backward children in a New York school.

The research is not finished. We hope to do more experimental work and continue the feeding experiments, but it seems that the immediate merits of the matter might be discovered more rapidly if the facts so far proved were known; hence we have decided to make this preliminary communication.

Our provisional conclusions may be stated as follows: The pineal gland is the vestigium of a special sense organ of vision in invertebrates and certain low vertebrates. In man it has practically lost all the structural characters of a sense organ and has those of a glandular body. It undergoes some involution at about the seventh year of life.

We are strongly of the opinion that in the early period of life it has influence over bodily nutrition, including the development of the genital organs, the deposit of subcutaneous fat, general growth, and mental progress.

We find that the extract of the pineal gland of bullocks injected into the veins of dogs has no effect on the blood pressure.

The same extracts fed to babies cause increase in metabolic activity, as evinced by increase in nitrogen eliminated by the urine.

The following history of a case of tumor of the pineal gland seems to show that in adult life entire destruction of the pineal gland does not affect metabolism. It is inserted here for its value as negative evidence and as an example of a very unusual type of pineal tumor.

*History of a Case of Tumor of the Pineal Gland.* The latest studies of tumor of the pineal gland show that there is a measurably definite pineal gland syndrome.

1. General symptoms of a brain tumor: Headache, vomiting, vertigo, optic neuritis.

2. Local symptoms due to pressure on the aqueduct of Sylvius with internal hydrocephalus, causing general tumor symptoms and leading to mental apathy.

3. Local symptoms due to pressure upon the corpora quadrigemina with irritative and paralytic symptoms pertaining to the eye muscles—such as lateral or vertical nystagmus, paralysis of the vertical movements of the eye, and of individual eye muscles.

4. Those due to pressure upon the anterior cerebellar peduncles with forced movements and asynergy.

5. Specific symptoms — adiposity, increased growth of the sexual organs and premature psychical and physical growth.

The symptomatology of pineal gland tumors has been gone over carefully by previous writers, including especially the latest contributions of Bailey and Jelliffe (*loc. cit.*), so that it is not necessary for us to dwell upon this matter in detail.

Mr. W. C., age forty; married; lawyer by occupation. He was first seen by me in consultation with Dr. Daniel Lewis, in April, 1905.

The family history was negative.

Previous history: The patient had always been a man of good health. He had not used alcohol or tobacco to excess, and has never had any luetic infection. He had suffered from severe headaches.

The present illness began in the fall of 1909—about seven months before I saw him.

His first symptom was dizziness, and soon after that he complained of headaches. The vertigo came on in attacks, which were quite severe; so that he would sway to one side, and would have to catch hold of something. These attacks of vertigo grew more severe and he would sometimes fall or sink down.

In addition to these attacks of vertigo with forced movements, he had attacks of sudden falling or collapsing, without any vertigo or tinnitus or loss of consciousness. These attacks lasted a few minutes and he would then get up and be perfectly clear mentally. (Cerebellar shocks.) In the attacks of falling, he generally fell forwards.

Besides these seizures, he had attacks of sudden blindness, lasting for two or three minutes. These attacks would come on sometimes when he was in the street, and he would have to grope his way. He had these blind spells sometimes every day in succession. The attacks of vertigo, following the blindness, did not occur when he was in bed or lying down.

The symptoms gradually increased and there developed later attacks of tachycardia and respiratory disturbances of somewhat Stokes-Adams type. His headaches were not very severe; they were dull, more often frontal but sometimes occipital, and were not worse at night. There was no record of any vomiting attacks.

He gradually developed some disturbances of vision. His sight failed and on examination, two days before I saw him, by Dr. Webster, a double optic neuritis with retinal hemorrhages was found.

Dr. Webster wrote that the papillæ were abruptly swollen, plus 4 to 5 diopters—the swelling gradually shading off.

There were retinal hemorrhages in both eyes, much more in the left, and this was decidedly the worse eye in all respects. His vision was slightly blurred, but no exact tests were recorded.

When I saw him, he had the appearance of a well nourished man; mentally clear and intelligence unimpaired, except that there was a little tendency toward forgetfulness of recent things.

He walked without ataxia, but swayed a little on standing with the eyes closed.

An examination of the cranial nerves showed olifaction to be unimpaired; dimness of vision, the left worse than the right, and optic neuritis, as noted above. The pupils were even and reacted to light. The ocular excursions were normal and there was no nystagmus. He had no trigeminal pain or anesthesia.

The facial movements were normal and there was no tremor of the lips. There was, however, a distinct oscillation of the tongue. Speech was almost normal, though he had difficulty in getting out some words. Deglutition was normal Taste and hearing were normal.

There was some rather coarse tremor of the hands, not increased on movement. The tremor was rather irregular and jerky and more so in the left than in the right.

The power of the arms was unimpaired, and the finger-nose test was normal, except for the influence of the jerky tremor. There was no anesthesia.

The movements of the hands were not ataxic and his writing was normal, except for a slight irregularity due to the tremor. There was nothing in the arms that showed any disturbance of co-ordination, and the case was observed before the time of diadochokinesis.

The power of the lower limbs was normal. He showed no asynergy. The knee jerks were exaggerated; the left more than the right. There was no clonus or Babinski; no anesthesia and no loss of deep sensibility.

There were no organic disorders of the thoracic or abdominal viscera.

Two and a half months later, I saw the patient again. At this time he was able to stand and walk without ataxia. His history was that since I had seen him before, he had had one very severe seizure, in which he dropped suddenly—the knees giving way, and he would have struck the floor if he had not been caught. There was a little dizziness accompanying it.

He had had another attack, which he called "a trembling fit." He got over these attacks in a short time.

He had had some frontal headaches, and had gradually lost his sense of smell; the vision in the right eye was greatly impaired—that of the left was nearly gone. He had been mentally clear and had slept well.

My examination of him showed no very new phenomena. His tremor had increased and the face was involved as well as the tongue and hands. There had been no involvement of the ocular motor nerves, nor of hearing or taste.

His speech had continued clear. He was generally somewhat weaker. The optic nerves showed more hemorrhages and papilloedema. There was no distinct paralysis of the arms or legs. The movements of the arms and hands were normal and there was no asynergy. The knee jerks were exaggerated—the left more than the right. There was no clonus and no Babinski. The urine showed a trace of albumin, but no sugar.

I did not see the patient again, but learned that he grew gradually worse and died about two months later—making the course of his disease about a year.

The autopsy was made by Dr. F. C. Wood, to whom I am indebted for the following report:

"The examination of the body of Mr. ——— showed the following lesions in the brain. When the skull was opened there was a considerable escape of fluid from beneath the meninges. The fluid was clear and light colored. The convolutions were considerably flattened showing pressure somewhere within the brain. No difference in resistance could be determined between the two hemispheres. There was no meningitis, and no thickening of the pia or dura. On opening the lateral and third ventricles the three spaces were found distended with clear fluid and very much larger than normal. Slightly posterior to the corpora quadrigemina and pressing on the pons so as to obliterate the lumen of the aqueduct of Sylvius was a small, firm, whitish tumor, measuring 3.5 by 2 cm. This was pressing on the left half of the cerebellum and on the left posterior corpus quadrigeminum. It was connected with the near-by tissue only by a small fibrous pedicle and a few vessels. The anatomical structure shows it to be a fibrosarcoma, whose exact origin is somewhat in doubt. The pineal body could not be found, so that it probably is a tumor replacing that organ. Such tumors are exceedingly rare, only a few being on record. It is also possible that this growth arose from the fold of the pia near by, though this seems less probable."

This case is put down as tumor, probable origin in the pineal gland. The patient had evidently lost his pineal gland, and in so far it represents a case in which the pineal gland had disappeared and been replaced by the fibrosarcoma. If, therefore, this gland has any important functions in adult life, some manifestations of its loss should have been present. There were, however, none of the symptoms which have been attributed to the disease of this gland, such as disturbances of growth or nutrition.

It will be seen that the tumor, wherever it started grew back, became subtenorial and pressed upon the cerebellar hemisphere, and also to some extent upon the vermis. This pressure would probably involve disturbances in the anterior peduncles of the cerebellum, and this would explain the forced movements forward, and the coarse tremor, which probably was of mid-brain origin.

The sudden attacks in which he dropped down to the earth belong to those clinical phenomena, which I class under the head of "cerebellar fits" or seizures. They are not, strictly speaking, "fits"—that is to say, there was no loss of consciousness and no motor spasm—but they were sudden, explosive disturbances of co-ordination and equilibrium, due to interference with the cerebellospinal mechanism.

The sudden attacks of blindness must have been due to the pressure upon and temporary spasm of the posterior cerebral arteries supplying the occipital lobes.

The fact that there were no oculomotor disturbances would indicate that the tumor had no important influence on the midbrain, but came, as Dr. Wood supposed, from the pineal gland, and exerted its influence by pressure upon the cerebellum directly. It did not early press upon the aqueduct of Sylvius, stopping it, as is often the case with pineal gland tumors.

There were no disturbances of trophic character in this case; no adiposity; no great emaciation; no skin changes that were noted, at least by any of us, and I take it to be pretty well established that the pineal gland, if it has any functions of this kind, exerts them during the period of growth.

### Report by Dr. William N. Berkeley.

*Anatomy of the Pineal Gland.*—Descriptions of the human pineal are accessible in all the standard text-books and need not be repeated here. We shall note only the points of difference in certain of the lower animals.

The calf's gland weighs from one-quarter to one grain in calves averaging one hundred pounds in weight. Its shape is much like that of a small cone. It is about one-quarter of an inch in longest diameter, soft and grayish white, contains no cysts as a rule and no precipitated calcium salts recognizable with the microtome-knife or in the mortar. After working with calves' glands for six weeks it was found so hard and so expensive to get them in fresh condition that all our later work was done with the glands of young bullocks (two to three years old).

The bullock's gland is much firmer than that of the calf, reddish white or grayish white and weighing (extremes) one to ten grains. So far as has been observed in many thousands of young cattle brought to New York markets the gland does not appear to contain cysts or precipitated salts. The adjacent pia and arachnoid are often black from deposition of pigment. In histology it does not differ materially from the rabbit gland described below.

In rabbits the pineal gland is somewhat longer and slenderer than in the bullock. Its anatomical *situs* and relative weight are about the same. It is covered and in a measure supported by the large vessels of the velum interpositum. Microscopical sections show solid trabeculæ of roundish cells with large nuclei. The nuclei are somewhat larger than red blood cells and stain rather faintly with hematoxylin. The connective framework is attenuated, and the blood vessels are small. Upon its surface the flattened nuclei of its ependymal covering are seen. It bears a remarkable likeness to the parathyroids of the same animal, and has no resemblance to brain-tissue. The pineal gland in rabbits and guinea-pigs cannot be removed *intra vitam* without rupturing a number of large venous sinuses under and around it, and to destroy it the cautery must be used.

*Laboratory Work with Pineal Gland.*—The plan for this work has embraced blood-pressure experiments, feeding experiments on laboratory animals, and children, excision experiments, and observation of nitrogen elimination in children while the gland is fed.

The blood-pressure experiments were virtually negative. Two dogs were used. The first dog received in rapid divided doses, intravenously, a concentrated solution of the nucleoproteid extract of 30 calves' glands. There was no response. The same animal then received intravenously two ounces of the globulin—albumin content of the same glands—without result. The second dog received a concentrated filtered saline solution of 24 bullocks' pineals, with no essential response.

In this connection should be mentioned the work of Jordan and Eyster, from which we quote the following summary:

J. A. E. Eyster (with H. E. Jordan).—An aqueous extract of the pineal gland of the sheep causes, on intravenous injection, a fall of mean arterial blood pressure in

the sheep, dog, cat, and usually in the rabbit, greater than the fall obtained from a similar extract made from other portions of the brain. The fall of blood pressure is associated with a vascular dilatation in the intestines, and since there is no important change in pulse rate, and no important effect on the excised mammalian heart the dilatation would seem to be the sole cause of the decrease in blood pressure. Acidulated aqueous extracts of the pineal body cause on intravenous injection in the rabbit a moderate and transitory diuresis. There is no very definite effect on respiration in the anesthetized animal. The results as a whole would seem to indicate a relatively small degree of activity of extracts of the pineal body so far as the organs studied are concerned.—(*American Journal of Physiology, 27,* 1910-11.)

Dixon and Halliburton (*Quarterly Journal of Experimental Physiology,* 1909) have reported as negative some blood pressure experiments on cats anesthetized with urethane. The pineal extracts were made with boiling Ringer's solution, cold Ringer's, alcohol, and one-tenth of one per cent. hydrochloric acid. There are other scattered references in the literature—mostly negative (*vide* introduction by Dr. Dana).

Blood pressure experiments were incidental to our main purpose, and were not pursued further.

*Nitrogen Elimination in Children.*—The two children selected, Margaret O'D. and Eugene R., from the children's wards of Bellevue Hospital, were placed at our disposal for the three weeks of the experiment through the courtesy of Dr. L. E. LaFétra, to whom we must express herewith our high appreciation of his kindness.

The girl was 8 years old and had been in ward B5, Bellevue Hospital, for some weeks with mild chronic arthritis (no fever). Her diet had been uniform for some time and was not changed during the experiment. Nothing was otherwise noteworthy in her case except that she had a little albumin in her urine quite constantly, generally *without* pus or casts.

She had her daily total urinary output of nitrogen determined for a week under ordinary diet and medication. Then for one week she was given pineal capsules in addition, three per day, after eating. For a third week (8 days more accurately) the pineal capsules were stopped, and a daily determination of nitrogen made again as in the first and second weeks.

Eugene R., the boy, was four years old. He was admitted with subacute purpura rheumatica. He was treated and his urine examined in the same way as above except that the 6th day's urine in the second week was lost by reason of the child being removed temporarily to another ward, and no pineal was given him *after* the sixth day of the second week. It will be noted that in the case of the girl there was a slight, and in the case of the boy, a marked, increase in the total nitrogen during the second week.

The number of cases tried out in this way will have to be increased largely to arrive at definite conclusions, but the results so far reached harmonize with the experimental and clinical data set forth elsewhere in this paper.

The two children were mentally normal and no special account was taken of their mental condition.

A little of the boy's urine was lost on several days, but not enough to vitiate the final results.

*Excision experiments* are also incomplete. It may be said here, however, that I have succeeded in exposing and destroying the pineal gland in young guinea-pigs, and that one of the animals survived the operation for two weeks in excellent health, when he died, apparently from a small abscess at one of the stitch-holes in the scalp. Excepting a failure to grow as fast as the control in the same cage, he showed no evident disability of any kind. It is not thought, however, that this observation will have any weight, unless our subsequent work (which we are planning on a larger scale along the same line) confirms it.

| | 24 Hrs. Urine, c.c. | Total N. grams. | | 24 Hrs. Urine, c.c. | Total N. grams. |
|---|---|---|---|---|---|
| Eugene R. | | | Margaret O'D. | | |
| October 15-16.. | 520 | 3.8 | October 15-16.. | 530 | 4.1 |
| October 16-17.. | 395 | 4.5 | October 16-17.. | 315 | 2.5 |
| October 17-18.. | 420 | 4.8 | October 17-18.. | 550 | 5.4 |
| October 18-19.. | 795 | 4.6 | October 18-19.. | 715 | 6.5 |
| October 19-20.. | 550 | 4.1 | October 19-20.. | 755 | 6.7 |
| October 20-21.. | 390 | 3.0 | October 20-21.. | 675 | 5.8 |
| October 21-22.. | 795 | 3.8 | October 21-22.. | 850 | 7.6 |
| October 22-23.. | 440 | 1.9 | October 22-23.. | 785 | 6.6 |
| October 23-24.. | 790 | 6.7 | October 23-24.. | 545 | 5.2 |
| October 24-25.. | 690 | 6.7 | October 24-25.. | 450 | 3.9 |
| October 25-26.. | 570 | 7.1 | October 25-26.. | 730 | 7.1 |
| October 26-27.. | 730 | 14.2 | October 26-27.. | 670 | 6.9 |
| October 27-28.. | ... | ... | October 27-28.. | 315 | 3.3 |
| October 28-29.. | 450 | 6.7 | Octobre 28-29.. | 730 | 6.5 |
| October 29-30.. | 305 | 7.8 | October 29-30.. | 580 | 5.6 |
| October 30-31.. | 145 | 3.1 | October 30-31.. | 630 | 6.1 |
| Oct. 31-Nov.1. | 335 | 5.0 | Oct. 31-Nov. 1.. | 285 | 2.4 |
| November 1-2.. | 230 | 4.1 | November 1-2.. | 905 | 9.6 |
| November 2-3.. | 340 | 5.6 | November 2-3.. | 355 | 3.4 |
| November 3-4.. | 215 | 3.1 | November 3-4.. | 260 | 2.4 |
| November 4-5.. | 580 | 4.8 | November 4-5.. | 785 | 8.2 |
| November 5-6.. | 150 | 2.2 | November 5-6.. | 220 | 0.7 |

*Feeding Experiments.*—The laboratory animals fed were kittens, young guinea-pigs, and young rabbits. This work has extended over 18 months and has progressed far enough to produce some interesting if not convincing facts.

It is well enough known that the *growth* of an animal is a function of many variables; *how many,* we cannot even estimate. Strains of a single species vary enormously; to compare the growth of a terrier and the growth of a St. Bernard would be manifestly absurd. Quantity and kind of food, congeniality of other animals in the same cage, light, air, temperature, sex-differences, all enter into the computation, and intercurrent disease is an additional unknown quantity. Also, where the mental life is a factor (as in the case of children) the influence of the nervous system upon the bodily development is all-powerful. The feeding experiments we have undertaken are therefore set down only for what they are worth, and we shall await results in other laboratories before feeling sure just what the value of our own observations may be.

Not to dwell prolixly on details, our observations have been as follows:

1. Of eight half-grown guinea-pigs, well fed (an excess of bread and fresh cabbage, no water) in an airy and well-lighted room, under observation for five weeks, all in the same cage, four received intraperitoneal injections, three times a week, of pineal nucleoproteid, and four were kept as controls. The dose of nucleoproteid was fifteen minims of a solution of which one ounce represented 30 calves' glands. The controls gained 25 per cent. in weight; the subjects gained 36 per cent. The difference was perceptible to the eye, and the subjects could be picked out by persons not knowing which had been injected.

2. Of 12 small kittens, selected at random from tenement back-yards, six were fed on calf's pineal, and six were kept as controls.

They were all extremely unhappy in confinement, and several of the controls and one of the subjects died. But the remainder, who were finally turned into an outdoor enclosure (with shelter at night) did

very well, and the subjects outgrew the controls rapidly in activity, size, intelligence, and resistance to intercurrent disease. The best control, beginning with a weight of 11 ounces, gained 4 ounces in two months and a half. The best subject, starting with a weight of 12 ounces, gained 12 ounces more—doubled his weight. The food was milk and raw meat. The medication for the subjects was fresh gland—one calf's gland apiece per day, or thirty minims of a standardized solution of nucleoproteid in the milk.

3. Twelve baby guinea-pigs, laboratory-bred, were selected for a third experiment. Six were fed for four months on the pineal capsules described below (one three times a week) and six were kept as controls. The subjects increased their weight (average of five surviving) 325 per cent.; the controls increased their weight (average of four surviving) 250 per cent.

4. Ten small rabbits were selected for a fourth experiment. They were of varying color and size, and did not appear to be of the same parentage. They were under observation for five months. The five subjects were fed on "capsules" (see below). One died. The four survivors, weighing *in toto* at the beginning of the experiment 2975 grams, gained in the period mentioned a total of 5770 grams, or an average of 1442.5 grams per rabbit.

The five controls met with various accidents in the period of experiment, and the three survivors at the end of the time had gained in all 3223 grams, or an average gain of 1074 grams per rabbit.

The subjects were beautiful specimens—clean, fat, active, and salacious. The gain they made is certainly remarkable. One of the smaller ones trebled his weight exactly.

*Therapeutic Experiments in Human Beings.*—A search of the Index Medicus for twelve years back shows little or no authoritative allusion to any former therapeutic employment of pineal gland.

Cyril Ogle (Trans. Path. Soc., London, 1899), reporting a case of pineal tumor, mentions that "Extracts of it (pineal gland) are sold to be administered in functional disease of the brain due to failure of nutrition; in cerebral softening, chronic mania, and dementia," but he appears to discredit this use of it and to know of no real or supposed function of the gland except the two century-old supposition of Descartes. There is no information accessible to us as to how this preparation was made.

For our own work, after various unsatisfactory methods of dosage, a physiological dose was adopted; the attempt being made to estimate the actual work that one gland could do instead of its mere weight.

Twelve bullocks' pineals, perfectly fresh, are rubbed up with a suitable amount of milk sugar till extinguished. The mass thus obtained, after thorough drying, is distributed into one hundred capsules. This is the only strength of capsule we have used, and when "capsule" is spoken of in this paper, this capsule is meant. It is calculated to correspond to 150 pounds of live bullock.

The patients—all children—amounting to fifty in round numbers, have been partly in the care of Dr. Dana and myself, partly in the care of Dr. H. H. Goddard and Dr. W. S. Cornell, of the Training School at Vineland, N. J., and partly in the care of Miss Carol K. Young, instructress in one of the ungraded classes at Public School 12, corner Jackson and Henry streets, New York City. One child was in the care of Miss Jane Shaw, of the same public school, and one of the Mongols was in the ungraded class of Miss Beswick, Public School 64, Brooklyn. Two reports are from Dr. Eleanora B. Saunders, South Carolina State Hospital, Columbia. We take this opportunity of saying how deeply we feel indebted to all these gentlemen and ladies for the kind and intelligent interest with which they have furthered our work.

In reporting the cases it has been the special object of all concerned to make the reports as objective as possible, and every effort has been made to exclude bias on the part of the observers. After a more or less complete account of the cases a summary of the results will be given below. The Vineland cases have been reported with such care and thoroughness that it has been thought well to give them a section by themselves at the end of this paper.

Case I.—John C., P. S. 12 (Miss Carol K. Young). Irish-American. Height, 5 ft. 8 in.; weight in proportion. A case of gigantism. Age, 14 yrs. Date first visit, November 22, 1911. Family history: Mother, 40 yrs.; three other children, all healthy; born 9 mos. pregnancy: had rickets and marasmus in early childhood; walked at 4 yrs.; said a few words about 2 yrs.; does no mental work; going to Miss Young three years. Color of skin: Fair. Mouth and neck: Tonsils and adenoids bad. Treatment: November 25, 1911, 2 caps.; had tonsils removed Wednesday; has not wet bed since. December 5, 1911, 2 caps.; nose operation finished; feels better. January 2, 1912, has taken caps. through December; looks better; not much mental change; prescribed 3 caps. per day. February 16, 1912, no change.

Case II.—Sam F., P. S. 12 (Miss Carol K. Young). Height, 52 in.; weight in proportion. Age, 12 years. Date first visit, November 22, 1911. Family history: Mother, 39 yrs. old, healthy; two children dead; 5½ yr. boy looks normal; two other boys healthy; father healthy, 37 yrs. old, tailor. Previous personal history: This boy born Russia, at term; easy labor; indigestion and fits in early infancy; not after second year; said papa, mamma, at 15 mos.; walked at 18 mos.; he was evidently mentally backward at 2 yrs.; did not go to school till 9 yrs.; is said to do no mental work whatever. Mouth and neck: Good teeth, some need filling; special senses, and other organs negative. Treatment: 2 caps. a day. February 15, 1912, no improvement.

Case III.—Aaron G., P. S. 12 (Miss Carol K. Young). Weight, 43½ lbs. Height, 46 in. Age, 7 yrs. Date first visit, November 14, 1911. Family history: Mother healthy looking, 36 yrs. old; two children; other one, boy, 10 yrs., normal; father "ailing," 38 yrs.; one miscarriage. Previous personal history: 8½ mos. born; mother day and a half in labor; no instruments were used; "papa, mamma," at 12 mos.; walked at 18 mos.; frequently ill with diarrhea, or teething, or something else; is now very slow and quiet; does almost no mental work; habits good since infancy. Status præsens: P. 80; T. and R. good. Color of skin: Good. Mouth and neck: Mouth breathing, but not aggravated. Lungs and heart: Good. Abdomen: Negative. Treatment: Pineal gland, one a day. November 21, 1911, 2 caps. a day; tonsils and adenoids removed. December 26, 1911, 2 caps. a day; has physically improved, though attending irregularly. Height, 46½ in.; weight, 44½ lbs. February 16, 1912, has not improved mentally more than might be expected from removal of tonsils and adenoids.

Case IV.—Edward L., P. S. 12 (Miss Carol K. Young). Weight, 60½ lbs. Height, 52¾ in. Age, 10 yrs. Date first visit, November 14, 1911. Family history: Mother, 44 yrs. old; had six children; one dead at 9 yrs. of "heart-clapping"; three miscarriages; father, 55 yrs. old, tailor; now working. Previous personal history: This boy born 9 mos., 2 hrs. labor, no forceps, no doctor; said "papa, mamma" at 9 mos.; walked at 1 yr.; for first six months of life had "convulsions," not afterwards; seriously ill once with blood poisoning; mental age (Binet), 5-6 yrs; Miss Young says he can learn nothing; and has retrograded in the last three years; mild temper; no passion; very strong physically; can knock 13-yr.-old brother down; good grip. Status præsens—Color of skin: Fair; vacant expression; triangular face. Special senses: Fair. Mouth and neck: Fair; "habit" mouth breathing; organs normal. Urine: Normal. Treatment: Pineal gland, 2 caps. per day. November 21, pineal gland, 2 caps. per day. November 28,

pineal gland, 3 caps. per day. February 16, 1912, no progress.

Case V.—Israel M., P. S. 12 (Miss Carol K. Young). Weight, 50¾ lbs. Height, 46¼ in. Age, 8½ yrs. Date first visit, November 15, 1911. Family history: Mother 32 yrs. old, healthy; five children alive; two miscarriages; one died suddenly at age of 2 yrs.; brothers 14 and 10 yrs.; sister of 2 yrs. healthy; sister of 12 yrs. at Randall's Island, insane after meningitis and diphtheria. Previous personal history: This child said to have no memory. Color of skin: Good. Special senses: Has glasses but won't wear them. Mouth and neck: Negative. Treatment: One cap. of pineal per day; early to bed; liberal and regular diet. December 23, 1911, been absent a good while; promises now to come regularly; prescribed 2 caps. December 30, 1911, prescribed 2 caps.; grown ½ in.; weight, 51½ lbs. February 16, 1912, Miss Young reports that though capsules have been given regularly since January 1 there has been no mental improvement.

Case VI.—Abraham S., P. S. 12 (Miss Carol K. Young). Weight, 71 lbs. Height, 54¼ in. Age, 15 yrs. Date first visit, November 21, 1911. Family history: Mother 58 yrs. old; nine children living, one miscarriage; one dead at 4 mos.; 20 grandchildren; father about same age; said to be healthy; all children and grandchildren clever except this one. Previous personal history: This boy born 9 mos.; mother says no instruments were used; bottle-fed; diarrhea, convulsions, pneumonia when a baby; convulsions only once (scarlet fever); walked 5 or 6 yrs.; talked 7 yrs.; was "very weakly, and till a year or so ago could eat only milk and water." Status præsens: Temperature normal; pulse and respiration normal. Color of skin: Fair. Special senses: Negative. Mouth and neck: Negative; other organs negative. Treatment: 2 caps. pineal gland. Capsules were given regularly to February 16, 1912. There was no improvement.

Case VII.—Simon G., Brooklyn (Dr. Berkeley). Weight, 45½ lbs. Height, 46 in. Age, 5½ yrs. Date first visit, November 14, 1911. Family history: One other child, 11 yrs. old, normal; father healthy, 44 yrs. old; mother 35 yrs. old, healthy; no miscarriages. Previous personal history: Carried 9 mos.; midwife; mother made good recovery; spoke and walked normally up to 2 yrs. age; was perhaps precocious, then began to go back; now is unwilling to say anything except when angry or excited, and mother is not sure he understands anything; habits very bad; expression vacant. Treatment: One cap. a day. November 22, 1911, 2 caps. a day. November 29, 1911, 2 caps. December 6, 1911, 2 caps; mother thinks he is better; frequently wets himself by day; regularly at night; stools better; mother thinks he understands better. December 18, 1911, been without capsules for 3 days; now prescribed 3 per day; says a few words; picks his own variety of candy in confectioner's; will pick up things for you and hand them; seems less nervous; mother appears encouraged. January 3, 1912, 2 caps.; mother speaks cheerfully; says he buttoned up his own coat yesterday; still wets and soils himself, but "versteht etwas mehr." January 9, 1912, still wets and soils himself; mother thinks he understands more than he did. March 1, 1912, parents continue to bring the child, and report cheerfully. He is still under treatment. This boy has made undoubted mental progress.

Case VIII.—Rebecca S., P. S. 12 (Miss Carol K. Young). Weight, 52 lbs. Height, 51 in. Age, 9 yrs. Date first visit, November 22, 1911. Family history: Six children in all: the others are healthy; parents normal. Previous personal history: Does no mental work at all; always backward; wets herself frequently; cannot do an errand. Color of skin: Good; organs negative. Treatment: 2 caps. a day. January 3, 1912, been coming irregularly; not much change; prescribed 2 caps. This patient was kept on the treatment regularly till February 1, 1912. She made no improvement.

Case IX.—Hannah T., P. S. 12 (Miss Young). Girl 9½ years, weight and height about normal for age. Family history negative so far as it could be got. Child was born at term; labor precipitate; no instruments. Well until 5 mos. of age, then had "convulsions." Has had pneumonia and bronchial trouble several times. Color of skin: Fair. Wears glasses. Has been operated on four times for adenoids and tonsils. The thorax is rickety. Organs negative. Has been mentally retarded for a number of years past. Child got two caps. of pineal gland per day regularly from the 1st of January, 1912. On Feb. 26th Miss Young reported as follows: "This child has improved most of all since taking the gland. She began the first of the year, and has shown a decided improvement ever since. A year ago she could not write a word or sentence without help. Now she writes simple sentences in language without any help. In September she could not spell a word. At the end of January in a spelling review of 40 words she spelled 38 correctly. She reads much better than she did, and can now do simple combinations in number. She has always tried very hard to sew, and since January 1st has completed a sofa-cushion in cross-stitch embroidery. I am very proud of Hannah's improvement."

Case X.—Julius B., P. S. 12 (Miss Young). Oct. 28, 1912. Boy, 9 yrs. Weight, 56 lbs.; height, 50¼ in. Family history negative, except that an older brother is deaf and dumb. This child was born normally; talked and walked at the usual time; was never sick. On the date of his first visit to the Clinic Miss Young writes that he has been in the class for defectives for some time; is fair with figures, but cannot remember any English words for a day at a time. The physical examination of this boy showed nothing amiss. He was placed on pineal gland caps.—one per day for the first month; afterwards two. On Nov. 18 he had gained half an inch in height, 1½ lbs. in weight, and had improved in appearance; his teacher also sent word that he was improving faster than before in his class-work. On Feb. 26, 1912, Miss Young wrote as follows: "J. has improved somewhat. He now completes his work, which he rarely ever did before. I have seen a marked improvement the last month, though he has taken the gland since the last of October. He has always done fairly good work in numbers, but has been poor in reading, spelling, and language. He could hardly write a complete sentence in language work without help. But he has surprised me lately. He can now spell a few words, too, without help, and his writing has improved very much. He has always been slow and lazy about his manual work, but has completed more work at bench and seat in the past two weeks than in any two months previous. He is now taking a double twist of raffia in weaving a basket, and is making a book-rack at the work-bench. I feel certain this new interest is due to pineal gland."

Case XI.—Rebecca R., P. S. 12 (Miss Carol K. Young.) Age: 12 yrs. Height and weight: Good. Date first visit: Nov. 22, 1911. Family history: Mother 44 yrs. old; bronchitis and asthma; two children died in infancy; two miscarriages; one married daughter, 25 yrs old; healthy; two grandchildren; this child born 9 months; 4 hours' confinement; midwife; up in 7 days; child had a "headache" for 9 months after her 4th yr. and afterwards was mentally backward and had an impediment in her speech. Tried hard at school but was very backward. Status præsens. P: 80, good. R.: Good. T.: Normal. Color of skin: Excellent. Special senses: Good ears. Mouth and neck: Defective articulation; occluded nose; referred to nose and throat department. Treatment: Pineal gland, 2 caps. per day. Dec. 20, 2 caps. Dr. Broder reports (per mother) nose now open. Dec. 27th, 2 caps. Miss Young says she makes no mental progress at all though evidently growing larger and stouter. Weight today, 99 lbs. Jan. 3, prescribed 2 caps. No evident change. Miss Young writes Feb. 26, 1911: "This girl has improved much the past 6 weeks. Has been taking the gland since November, though I fear not regularly until I began giving it. She spells better; writing is neater, and she reads quite well in first reader. Seems to want to work at her lessons and before only wanted to sew or embroider. Her number work is not so well done but is better. Seems to enjoy doing things as never before. Will begin work as soon as she enters the room."

Case XII.—Reuben V., P. S. 12 (Miss Carol K. Young). Weight, 50½ lbs. Height, 50¼ in. Age, 9 yrs. Date first visit, July 22, 1911. Family history: Father reported healthy; mother, 46 yrs. old, healthy; five other older children, two boys, three girls; one boy married, two healthy children; mother's appearance suggests old specific disease. Previous personal history: This child born 2 hrs. labor; 9 months gestation; from 6 months to 6 yrs. had "Krämpfe," which have now for 3 yrs. ceased; did not fall, not bite tongue, nor lose consciousness; seemed only to have "Schreck"; walked at 3 yrs.; said "Mamma," "Papa" at 4 yrs.; now talks freely, but only mother can understand him, as articulation is bad; has formerly been to Defectives' School, but "cried and ran home"; has dull expression, widespread and flattish ears; prominent jaw, four whorls on scalp, very short little fingers; two years ago was in Randall's Island for 10 weeks, then taken home by parents. Status præsens: P., good; R., good; T., slightly raised by tooth infection; Color of skin: Very good. Special senses: Appear good. Mouth and neck: Bad teeth, tonsils and adenoids. Lungs and heart: Good. Abdomen: Negative. Slightly constipated; good appetite. Urine: Negative. Treatment:

Gargle; pineal gland, once a day. August 14, glasses have been provided for myopia; cross-eye not relieved; tonsils and adenoids removed by Dr. Broder; weight now 50¾ lbs.; height, 51 in.; sleeps better; mother thinks mental condition slightly improved; prescribed pineal gland once a day. August 21, 1911, mother is pleased, and says boy continues to improve; teeth still vexing him. August 28, 1911, Weight, 52½ lbs.; height, 51 in. September 30, 1911, weight, 52½ lbs.; height, 51 in., same as last time; now going to school; teeth, eyes and adenoids in order; teacher says child is very dull, and she cannot understand any words that he says, but he is pleased with school, likes to go, and she hopes for improvement; does not know the way to school. October 14, 1911, weight, 54¼ lbs.; teacher writes encouraging letter, and boy is evidently improving; he goes now alone to school without mishap. October 21, 1911, same; Binet tests show 3 yrs. development; great indistinctness of speech makes it almost impossible to recognize his words; *pencil* is "sheeli"; *box* is "ox," and finally by repeating the correct sound loudly to him "*box*." October 28, 1911, weight, 53 lbs.; height, 51½ in.; understood much that he said—first time to-day. November 18, 1911, weight, 54 lbs.; height, 51¾ in.; wets himself still at times, but has a much more intelligent expression. November 27, 1911, prescribed caps., 2 a day; sang me a little song and drew a man for me. December 9, 1911, prescribed caps., 2 a day; weight, 56 lbs.; height, same; still wets himself. December 23, 1911, prescribed 2 caps. December 30, 1911, prescribed 2 caps; teacher says he learns little, but plays with spirit and intelligence; and his mother says his understanding of household matters is very good; prescribed tincture belladonna for the wetting of bed. Miss Young writes, February 26, 1912: "Reuben has been taking gland since July; has been in school for 6 mos.; understands everything I say now, though at first he would stare at me if I spoke to him. If things are to be done about the room, he does them without being asked. Recognizes red and can say it. Can select all colors; calls me by name and can call some of the other children, but not all; shows much intelligence in games of 'drop handkerchief,' 'eat mouse,' etc.; can catch ball and enjoys games; tries to imitate other children; can put on and button his own coat now; goes home from school alone. Does not wet himself; asks me for permission to leave the room when necessary." Both doctor and teacher have been greatly interested in this child, and his improvement has been gratifying.

Case XIII.—Meyer K., P. S. 12 (Miss Carol K. Young). Weight, 49½ lbs. Height, 47 in. Age, 6½ yrs. Date of first visit, October 17, 1911. Family history: Mother, 31 yrs. old, says she is "schwach," but looks healthy; father, 31 yrs., healthy, bricklayer; couple came singly to this country, 11 and 10 yrs. ago; married 10 yrs. ago; ages of four children, 9 yrs. boy; this one; 5 yrs. boy; 2 yrs. girl; all other children well; no miscarriages. Previous personal history: This child delivered after 3 days' labor; no instruments, but born asphyxiated and remained "todt" for 4 hrs.; then cried for 24 hrs; breast fed; "Papa," "Mamma" at 12 mos.; walked at 13 mos., but often fell down; never had fits; child is reported by his teacher to be "very slow," but to have "improved very much since she took him last year" (Miss C. K. Young); holds pen with "intention tremulous" fingers; can make letters; knee jerks exaggerated; ankle clonus very slight; no difficulty with stools and urine; prognathous jaw, thick lips. Binet tests, 5 years. Status præsens: P., good; T. and R., normal. Color of skin: Very good. Special senses: Negative. Mouth and neck: Operated twice for tonsils and adenoids; slight "habit" mouth breathing persists; recommended plaster for mouth at night. Abdomen: Negative. Treatment: Pineal capsules, 1 a day. November 11, height, 47¼ in. November 18, weight, 51½ lbs.; height, same; looks well. November 28, weight and height, same; prescribed 2 caps. December 16, teacher said to approve of his mental progress; height, same; weight, 52 lbs.; prescribed 2 caps. December 23, 2 caps.; looks well; December 30, 2 caps.; looks well; grown ½ in.; weight, 52 lbs.; teacher reports favorably. Miss Young reports, February 26, 1912: "Great improvement in 5 months. Can now compose and write five or more sentences in language. Writing improved very much; knows all letters; in a spelling review of 40 words for the month of January he spelled 32 words correctly. Is more careful about number work; can multiply with one number; knows tables to 11; can add and subtract; can read better, but this shows least improvement; manual work is better; has much better control; is now doing a basket of reed and raffia and is making a book rack of wood at work bench."

Case XIV.—Rose R., P. S. 12 (Miss Carol K. Young). Weight, 60½ lbs.; height, 31½ in.; age, 9 yrs. Date first visit, November 11, 1911. Family history: Mother, 43 yrs. old; one miscarriage (2 mos.) 6 yrs. ago; 5 boys, 16, 15, 12, 5, 22 mos.; all healthy mentally. Previous personal history: 9 mos. child; mother in labor 16 hrs; no forceps; walked 14 mos.; talked at 15 mos.; first went to school at 6 yrs.; meningitis at 17 mos.; in bed 10 wks.; convulsions then; not since; been in class for defectives at P. S. 12 for 3 yrs; making very slow progress. Status praesens: P., 80; R., good; T., normal. Color of skin: Healthy; rosy and robust appearance; bright expression. Special senses: Eyes now fitted with glasses; seems to have good vision. Treatment: Pineal capsules, 2 per day. December 30, has been away several weeks; grown ½ in.; prescribed 2 caps.; Miss Young reports favorable progress. Again Miss Young writes, February 26, 1912: "Began treatment in November. On account of illness in family did not go regularly. Her improvement has been notable since she began taking the gland. Before her lessons seemed to be a burden to her and now she seems to enjoy them. Does not fatigue so easily. She has always been very nervous and could not concentrate for any length of time. She does not get these nervous spells as often as she did, and sticks to her work until finished. She spells well—for her—recognizes words much better and reads much better than she did. There has also been improvement in number work. She knows her tables fairly well and can add, subtract, and multiply by one figure. She has made two sofa cushions and two aprons in school since taking the gland, and that is a great deal for her to accomplish as she is so slow. She is now monitor for the lunch table, and tries to do it *well*. Six months ago I wouldn't have thought she could ever be as good as she is. Am sure her improvement is due to pineal gland. I hope to return her to the grades in June."

Case XV.—Max L., P. S. 12 (Miss Carol K. Young). Weight, 68 lbs. Height, 55½ in. Age, 11 yrs. Date first visit, November 22, 1911. Family history: Father 50 yrs. old, normal looking; mother 43 yrs. old, healthy; five children, 13 yrs., girl; this child; others 9, 7, 7 yrs.; all others healthy (7, 7 yrs. are twins, girls). Previous personal history: Mother pregnant 9 mos.; easy labor; up in three days; child walked and talked at 18 mos.; about 2 yrs. had measles; was never mentally right afterwards; had no convulsions. Status praesens: P., 85; R., good; T., normal. Color of skin: Excellent. Special senses: Nearsighted; ears, watch 2 ft.; excellent grip. Mouth and neck: Adenoids and tonsils, to be removed next week. Lungs and heart: Negative. Abdomen: Negative. Urine: Negative; abundant; good color. Albumin: None. Treatment: 2 caps. per day. Miss Young writes, February 16, 1912 "Max has been taking pineal gland nearly five months, and has improved greatly. He seemed a most hopeless case in September. Could do almost nothing except select colors. He was very inattentive, and seemed hard of hearing. Now he understands much more quickly than before. It was impossible for me to get him to do any kind of hand work, but since taking the gland he has finished weaving a large scrap basket, and has done it beautifully and with no help, except at the start. He now matches words in the story of 'Jack and Jill,' and recognizes them. Can write some letters, which he never could before. Can cut to a line and paste designs. Recognizes numbers to 10; is more helpful about room and uses better judgment in the room and on playground."

It must be noted about this case that the boy was entered in Miss Young's class only in September last. His previous educational history is unknown. Miss Young's impression, however, is that his progress has been phenomenal.

Case XVI.—Max R., P. S. 12 (Miss Jane F. Shaw). Weight, 102 lbs. Height, 5 ft. Age, 12 yrs. Date of first visit to clinic, November 21, 1911. Family history: Mother 40 yrs. old, healthy; 5 children; this boy one of twins; other twin born dead; no miscarriages; father 42 yrs. old, healthy. Personal history: Baby born without forceps, breast-fed; said "papa, mamma" at 2 yrs.; walked at 2½ or 3 yrs.; habits good from early infancy; no convulsions; Miss Shaw wrote under this date: "The lad is very restless and nervous. He has little or no self-control. In English he does the work of a boy of 10; in arithmetic the work of a boy of 8 or 9. He can do very little hand work." Physical examination entirely negative. This boy received capsules and took them with fair regularity till the middle of January. During this time his attention improved remarkably and it was noticed that he was able to sit quietly at his desk, a thing he could never do before. In his mental work he improved so much that he was placed in the regular fourth grade, and on February 1 was reported

to be doing very well. After February 1 he got no more capsules, and on February 26 Miss Shaw wrote: "Max had a peculiar habit of holding his hand before his mouth and nose, in a way that looked as if he were trying to get more air to breathe. He did this constantly before he commenced the treatment. During the time of treatment the habit disappeared. He has started to do the same thing again, and is more restless since discontinuing the medicine."

Case XVII.—Aaron S., P. S. 64, Brooklyn (Miss Phebe Beswick). This child is a Mongol. Weight, 54½ lbs. Height, 44 in. Age, 6 yrs. Family history entirely negative. Father and mother are robust, and there are four other children, all of whom are normal. Personal history: Child born normally; walked at 2 yrs.; never began to talk till taken to school for defectives last March; now says a few words, which are hardly audible or intelligible; physical condition good, facies characteristic; organs negative. His nose was operated upon for bad breathing, and he was placed on the pineal gland treatment at once. The mother has returned regularly for the medicine, and thinks the child is improving in mentality, but the time of treatment has been too short to draw permanent conclusions as yet. On February 14 Miss Beswick wrote: "In regard to Aaron S., I feel there is some improvement. His instinct of initiation seems to be more definite than before he came under your treatment. He sits more quietly at school, and does not babble at random as much as he did. As yet he does nothing at school but indulge in free play. He puts pegs in peg-board, builds with blocks, and catches the bean-bag." On his physician the child makes a much more favorable impression than two months ago.

Case XVIII.—L. W., New York (Dr. Berkeley). Girl, 7 yrs. old. Weight and height normal for age. Family history negative. This child fifth of six children; all the others said to be unusually bright. The patient is a high-grade Mongol. Skin fair and rosy. Facies perfectly characteristic. Lungs, heart, abdomen, and urine negative. Mental age (Binet tests), 4 yrs. She was put upon pineal gland on August 5, 1911. She was seen again on December 14, at which time she had grown in height and weight, and had made good mental progress. She has been kept on the treatment by her parents, and has been reported once since as continuing to improve, though no precise objective details of her mental progress were furnished. (In reporting this case it is distinctly remembered that the parents of any weak-minded child, especially of a Mongol, are apt to be very bad judges of the child's progress. It is, however, in Dr. Berkeley's opinion, quite certain from objective signs, that the progress of this child after beginning pineal gland was remarkably rapid.)

Case XIX.—E. B., S. Carolina (Dr. E. B. Saunders). Girl, white, nearly 5 yrs. old. Admitted to the S. C. State Hospital as a "defective" by an officer of the law. Family history and previous personal history very incomplete. Repeated physical examination showed nothing abnormal. She was small, anemic, untidy, irritable, cried much, dribbled saliva; was not easily distracted from anything she had her mind on; did not notice dolls, toys, etc. She ate only fairly well and was restless at night. Began pineal gland caps. furnished by Dr. Berkeley, giving three per day for fully a month, after which on account of the scarcity of the medicine the dose was reduced to two and finally to one caps. per day. Now the child is more tidy, plays and eats well, understands everything said to her and is not so peevish. There is a marked change for the better in the tonicity of the muscular tissue. She looks healthy, and has shown no ill effects from the medication; no increase of the pulse-rate, no increase of the blood-pressure; no crying. Strikingly suggestive of the effect of the pineal gland is the fact that after she had been under treatment for several months the supply of gland became exhausted, and this treatment had to be suspended. While the pineal gland was omitted we noticed that the patient cried more frequently, was a little more irritable, and had a tendency to be more wakeful at night. At present when back on two capsules a day, she is very comfortable. This patient is still under observation.

Case XX.—J. F., South Carolina (Dr. E. B. Saunders). Small girl, exact age doubtful. Admitted to the Hospital for protection. Family history bad. Previous personal history not ascertained. Physical examination of this girl showed nothing of importance except anemia and emaciation, but her mental status was bad. She had a great tendency to untidiness and a high nervous irritability. While unusually active, she was sullen when opposed, restless, inattentive and a masturbator. She cried aloud at times during the day, and was restless at night. She was a mouth-breather and dribbled saliva. She was started upon the capsules of pineal gland, one three times a day. For three weeks there was no improvement, but it was then noticed for the first time that the little girl would listen when spoken to, and that she was pleased to play with her dolls. She soon began to show jealous resentment when her nurse showed a preference for another child, or fondled the doll instead of herself. At present she still has the tendency to run aimlessly about the ward and chatter to herself, but she is much more tidy, does not masturbate, eats in an orderly manner, and sleeps well at night. She is still under observation.

Case XXI.—Benny W., New York (Dr. Berkeley).—Weight, 42½ lbs.; height, 43½ ins.; age 7 yrs. Family history: Father not seen, but reported healthy; age not ascertained. Mother, 33 yrs. old, of excellent appearance. There are three other children, all boys, aged 13, 11 and 5 yrs. respectively; all these were seen, and all were normal, or even precocious. Date of first visit: June 15, 1911. Personal history: Child born without incident, but was always backward. Did not walk till three, and has never said any connected or intelligent words. He can repeat short sentences after his mother, but this appears to be true echolalia, as he gives little appearance of understanding what he repeats. Cannot buy a pennyworth of candy. Is said to wet himself habitually, and soils himself several times a week. Mother professed herself in despair about the child and willing to do anything for his relief. Physical examination entirely negative, except that the boy is cross-eyed (1.50 D. hyperopic astigmatism). He has no physical stigmata, but presents a vacant animal face, smiles inanely and drools continually. His muscles and skin are relaxed, and he stands with bent knees and bowed head. He is said to be very "nervous," and cries a good deal, which might be attributed to the quantity of coffee he has been allowed to have. The treatment of this case consisted solely in the giving of pineal gland. His eyes were fitted with glasses, but these he soon refused to wear, and the treatment was continued without them. June 26.—Weight 43¼ lbs. Looks brighter. Mother thinks his mental condition much improved. Has gone to toilet alone and not soiled himself at all this week. Has said some connected words; cried because younger brother was dressed before him (had never noticed this before). July 3.—Mentality still improving; talks a great deal more. Weight, 41¾ lbs—a decline due possibly to the hot weather. July 10.—Weight, 42 lbs; intelligence rapidly increasing; yesterday asked his mother for the key to the toilet; has entirely ceased to soil or wet himself. Height unchanged. Nurse and assistant at the Clinic remarked upon the patient's improved appearance. Aug. 14.—Weight, 44¼ lbs.; height 44½ ins. Understands and answers simple questions, and has acquired between fifty and one hundred words. Facial expression transformed. Habits entirely correct. This patient continued to improve till late August, when the family moved suddenly to a western city and were lost sight of.

From the total of about fifty cases it seems quite possible to draw the conclusion that in certain cases of retarded development in children pineal gland may be a remedy of value. It is certainly worthy of a much more extended trial, particularly when we read the recent reports (New York Society for the Prevention of Cruelty to Children) that there are at the present time in New York City alone 7,000 distinctly feeble-minded children, or about one per cent of the school population.

Just how the gland produces so notable a mental improvement is a matter of conjecture. By reason of the minute amount of it in the normal animal constitution the only reasonable working hypothesis would seem to be that the secretion of the gland acts as a ferment, or katalyte, facilitating the exchange of nutrient material in the cells of the brain. But this is confessedly only a hypothesis.

It must be noted further, that in cases of total idiocy and gross physical defect we have found the gland useless, and that in proportion as the patient is less characterized by physical stigmata, so much more benefit does he seem to reap from pineal medication.

Whether there be any specific mental defect of childhood which may be called *apinealism* or *hypopinealism* remains for the future to decide. I am

of the opinion that the case above described of Benny W. is a true case of hypopinealism. There is, however, no question that the gland is of benefit in many cases of simple retardation, and even in such specific diseases as Mongolism we have found it of distinct value in the cases reported.

In the case of the Vineland children (see below) it must be further observed that the *physical advance* was more marked in the control cases than in the subjects—while the subjects advanced considerably more rapidly than the controls in mental accomplishment. Till the gland has been administered continuously for a much longer period than four months we shall not be able to explain this finding definitely; but it seems quite natural to suppose that given the existence in each subject of only a certain *quantum* of energy, the more this is deflected to mental lines of development, the less will be left for physical growth.

### Report by Drs. Walter S. Cornell and Henry H. Goddard, of Vineland, N. J.

The following described experiments on the use of pineal extract were made at the Training School at Vineland, N. J. This institution has 400 inmates of both sexes and of all ages (five to sixty) and of all grades of intelligence (from the low grade idiot to the high grade moron, or almost normal).

The management of the institution considers that the greatest contribution that it can make to society is from the study of the condition of these children and by examining them in all legitimate ways with various methods of treatment.

It has maintained for five years a Department of Research, where different studies and investigations have been carried on, some of them leading to valuable results. The department is not only interested in the problems that it can work out itself, but welcomes gladly any help or suggestions from those outside of the institution and is very glad to collect data or carry on work under the direction of any competent person who has a problem to solve.

In August, 1911, a visit was received at the suggestion of Dr. C. L. Dana of Cornell University from Dr. William N. Berkeley, who came as the result of the experiments that he and Dr. Dana had been making on the use of the pineal gland extract. As the result of their studies, they were desirous of trying this gland upon a group of mentally defective children. The plan was quickly approved by the Training School and Dr. Berkeley at once proceeded to pick out a group of children. Twenty-five were finally selected, being chosen, as far as possible, from among the younger children, some of each sex, and of different grades of intelligence, from the lowest to the highest grade. We next recorded the following facts about each one of these children: Mental age; the condition of the family, that is to say, whether there was hereditary feeble-mindedness or not; height, standing and sitting; weight; grip with each hand, and lung capacity.

August 24th, 1911, the experiment began by the administration per mouth of one capsule per day of pineal gland as prepared by Dr. Berkeley.

At the same time that we selected this group we selected a control group, pairing each child that was to have the glandular extract with one of as nearly as possible the same age, physical and mental, the same hereditary history and approximately the same development. These children have been measured and tested every time with the others. While, of course, no children are exactly alike in heredity or in temperament or physical or mental condition, yet, taken as groups, the one served as control for the other.

In two months each group was again measured and tested. The result of that measurement was a very slight advantage in favor of those who had taken the pineal gland. This was shown in mental capacity and in physical development except in weight, which was, on the contrary, slightly reduced. While the improvement was not great and indeed not great enough to be of itself very significant, it was nevertheless felt that it was sufficient to continue the experiment.

The gland was consequently administered for another two months. At the end of four months, the results were as shown in the table on page 846.

The groups had been reduced in the meantime by the dropping out of four children: two were so low grade that they could not be conveniently made to take the medicine, and two left the institution. Substitutes were found for two of these. Twenty-one subjects continued through the four months' trial. Of these, seven made no change; fourteen showed a gain. Of these fourteen the average gain in mentality by the Binet tests during the four months was .65 of a year, or twice normal development. The gain of the entire control group by the Binet test was only a trifle over .25 of a year. Of the controls, only nine made any gain. The average mental gain of these was .41 of a year.

It seems certain that, although slight, there is nevertheless a distinct advantage to those who have received the extract. In several cases the controls either suffered from illness or went home for a visit, so that at the end only fourteen controls were available.

It will be seen that the greatest gain has been in groups I, VII, XII, XIV, XVII, XX and XXII, where the gain has been from .8 to 1.8 years.

The children in the idiot group (mentality of from 1 to 2 years) show no improvement whatever.

When we turn to the physical side, the data are quite different. The gain in standing height for the 21 subjects averages 18.52 mm., while for the 24 controls it was 24 mm. In sitting height, the 21 subjects gained an average of 15.26 mm., while the 14 controls gained 15.28 mm.

In weight the 21 subjects gained an average of 2.06 kg. and the 14 controls gained 2.89 kg. There was no case of an actual loss of weight in either subject or control.

In the grip of the right hand the 21 subjects gained an average of .9 of a kilogram as a group, and the 12 who gained averaged 1.58 kg. The 14 controls gained an average of 3.43 kg., the 10 who gained averaging 4.3 kg. In the grip of the left hand the 21 subjects gained an average of 1.02 kg. as a group, the 17 who gained averaging 1.28 kg. The 14 controls all gained, the average being 3.75 kg.

In lung capacity the 21 subjects gained an average of 109 c. cm., the 17 who gained averaging 134 c. cm. The 14 controls gained an average of 217.8 c. cm., the 9 who gained averaging 338.8 c. cm.

The result from the physical side would seem to be conflicting with the other.* The grip and lung capacity are good measures of mental capacity in feeble-minded children, and consequently this gain of the controls is somewhat of a contradiction.

*Dr. Berkeley's explanation of this apparent contradiction is given elsewhere.

| Date Tested, 1912 | Heredity M. | Heredity F. | Name and Sex | Chron. Ment. Age | Age by Test | Height, Mm. Std. | Height, Mm. Sit. | Weight, Kilo. | Grip, Kilo. R. | Grip, Kilo. L. | Lung Capacity, C.Cm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | GROUP I | | | | | | |
| Subj. | | | | | | | | | | | |
| August | N | Un. | D. L.—F. | 10 | $4^2$ | 1386 | 747 | 35 | 12 | 11 | 870 |
| December | N | Un. | | | $6^1$ | 1390 | 750 | 36.9 | 13.5 | 12 | 650 |
| Cont. | | | | | | | | | | | |
| August | N | Un. | E. J.—M. | 10 | $3^2$ | 1212 | 670 | 26.4 | 5.5 | 2.5 | 120 |
| December | | | | | $3^2$ | 1235 | 680 | 29 | 10 | 7 | 350 |
| | | | | | GROUP II | | | | | | |
| Subj. | | | | | | | | | | | |
| August | N | Un. | A. R.—F. | 12 | 1 | 1442 | 750 | 35 | 2 | F | F |
| December | N | Un. | A. R. —F. | | 1 | 1465 | 752 | 37 | 3.5 | F | F |
| | | | | | GROUP III | | | | | | |
| Subj. | | | | | | | | | | | |
| August | F | F | L. H.—M. | 13 | $5^2$ | 1342 | 702 | 26 | 15 | 13.5 | 400 |
| December | F | F | L. H.—M. | | $5^4$ | 1360 | 720 | 28.8 | 17 | 16 | 700 |
| Cont. | | | | | | | | | | | |
| August | F | F | E. H.—F. | 12 | $3^1$ | 1570 | 782 | 47.9 | 8.5 | 9 | 80 |
| December | F | F | E. H.—F. | | $3^3$ | 1580 | 800 | 47.5 | 20 | 18 | 700 |
| | | | | | GROUP IV | | | | | | |
| Subj. | | | | | | | | | | | |
| August | F | F | A. P.—M. | 12 | $6^1$ | 1280 | 710 | 30.8 | 11 | 7 | 1330 |
| December | F | F | A. P.—M. | | $5^4$ | 1297 | 722 | 31.2 | 9 | 6 | 550 |
| Cont. | | | | | | | | | | | |
| August | F | F | G. B.—M. | 12 | 8 | 1562 | 820 | 42.1 | 33 | 30 | 2610 |
| December | F | F | G. B.—M. | | $7^3$ | 1585 | 830 | 47.2 | 42 | 42 | 2750 |
| | | | | | GROUP V | | | | | | |
| Subj. | | | | | | | | | | | |
| August | F | F | F. J.—F. | 10 | 7 | 1400 | 742 | 31.4 | 15 | 10 | 1190 |
| December | F | F | F. J.—F. | | $7^3$ | 141 0 | 750 | 32.6 | 13 | 11 | 1000 |
| Cont. | | | | | | | | | | | |
| August | F | F | C. C.—M. | 14 | 7 | 1495 | 778 | 38.4 | 23.5 | 4.5 | 1400 |
| December | F | F | C. C.—M. | | 7 | 1530 | 792 | 46 | 26.5 | 6 | 1350 |
| | | | | | GROUP VII | | | | | | |
| Subj. | | | | | | | | | | | |
| August | N | F | W. C.—M. | 10 | $4^3$ | 1308 | 665 | 25 | 7.5 | 14 | 800 |
| December | N | F | W. C.—M. | | $6^1$ | 1330 | 690 | 27.7 | 10 | 16 | 600 |
| | | | | | GROUP IX | | | | | | |
| Subj. | | | | | | | | | | | |
| August | Un. | L | H. O.—M. | 11 | $7^2$ | 1322 | 700 | 25.6 | 13.5 | 11.5 | 900 |
| December | Un. | L | H. O.—M. | | $7^3$ | 1340 | 710 | 28.2 | 13 | 9 | 850 |
| Cont. | | | | | | | | | | | |
| August | Un. | L | R. B.—M. | 14 | $6^2$ | 1450 | 745 | 32.4 | 23 | 19 | 750 |
| December | Un. | L | R. B.—M. | | $7^1$ | 1480 | 750 | 34 | 22.5 | 21.5 | 950 |
| | | | | | GROUP X | | | | | | |
| Subj. | | | | | | | | | | | |
| August | Un. | F | L. H.—F. | 9 | 1 | 1158 | 590 | 19.7 | F | F | F |
| December | Un. | F | L. H.—F. | | 1 | 1170 | 612 | 22.4 | F | F | F |
| Cont. | | | | | | | | | | | |
| August | Un. | F | L. D.—F. | 14 | 3 | 1403 | 732 | 40 | 14 | 11.5 | 1100 |
| December | Un. | F | L. D.—F. | | $3^1$ | 1418 | 750 | 42 | 14.5 | 13 | 650 |
| | | | | | GROUP XI | | | | | | |
| Subj. | | | | | | | | | | | |
| August | N | Neu. | A. W. —F. | 14 | 1 | 1410 | 739.5 | 33.1 | 5 | 4 | F |
| December | N | Neu. | A. W.—F. | | 1 | 1435 | 765 | 37.4 | 2 | 5 | F |
| | | | | | GROUP XII | | | | | | |
| Subj. | | | | | | | | | | | |
| August | Un. | Un. | F. D.—M. | 13 | $6^1$ | 1310 | 693 | 28.2 | 12 | 11 | 420 |
| December | Un. | Un. | F. D.—M. | | 7 | 1335 | 710 | 29.6 | 15 | 13 | 450 |
| Cont. | | | | | | | | | | | |
| August | X | X | A. H.—F. | 12 | $6^3$ | 1520 | 790 | 36.2 | 19 | 20 | 1490 |
| December | X | X | A. H.—F. | | $7^1$ | 1535 | 810 | 37.4 | 19 | 20 | 2150 |
| | | | | | GROUP XIII | | | | | | |
| Subj. | | | | | | | | | | | |
| August | Un. | Un. | H. O.—M. | 10 | 2 | 1251 | 670 | 29.7 | 4 | 4 | 120 |
| December | Un. | Un. | H. O.—M. | | 2 | 1280 | 670 | 30.7 | 6 | 4 | 100 |
| Cont. | | | | | | | | | | | |
| August | | | P. Z.—M. | 13 | $3^2$ | 1360 | 735 | 31.7 | 9.5 | 8.5 | 540 |
| December | | | P. Z.—M. | | $3^3$ | 1410 | 760 | 35.5 | 11.5 | 8.5 | 300 |
| | | | | | GROUP XIV | | | | | | |
| Subj. | | | | | | | | | | | |
| August | Un. | Un. | K. H.—F. | 8 | 3 | 1100 | 608 | 16 | 7 | 7 | 300 |
| December | Un- | Un. | K. H.—F. | | 4 | 1120 | 630 | 17.4 | 7 | 7.5 | 400 |
| Cont. | | | | | | | | | | | |
| August | A | | A. S.—F. | 8 | $3^1$ | 1013 | 530 | 17.5 | 3.5 | 1. | 200 |
| December | A | | A. S.—F. | | $3^3$ | 1020 | 550 | 18.8 | 4 | 2.5 | 150 |
| | | | | | GROUP XV | | | | | | |
| Subj. | | | | | | | | | | | |
| August | Un. | Un. | F.McK.—F. | 8 | $6^4$ | 1238 | 658 | 23.6 | 14 | 14 | 710 |
| December | Un. | Un. | F.McK.—F. | | 7 | 1267 | 650 | 26.1 | 17 | 15 | 800 |
| Cont. | | | | | | | | | | | |
| August | X | X | H. H.—M. | 11 | 8 | 1341 | 692 | 31 | 8 | 12 | 1310 |
| December | X | X | H. H.—M. | | 8 | 1375 | 730 | 33.4 | 20 | 20 | 1300 |
| | | | | | GROUP XVI | | | | | | |
| Subj. | | | | | | | | | | | |
| August | X | X | E. R.—F. | 6 | 2 | 995 | 552 | 12.7 | 1 | 5 | F |
| December | X | X | E. R.—F. | | 2 | 1035 | 570 | 14.7 | F | F | F |
| Cont. | | | | | | | | | | | |
| August | X | X | I. J.—F. | 7 | $3^1$ | 1188 | 650 | 21 | 4 | 3 | 320 |
| December | X | X | I. J.—F. | | $3^4$ | 1220 | 655 | 23.2 | 6 | 8 | 320 |
| | | | | | GROUP XVII | | | | | | |
| Subj | | | | | | | | | | | |
| August | X | X | E. B.—F. | 8 | $2^4$ | 1071 | 590 | 18.9 | 5.5 | 5.5 | 300 |
| December | X | X | E. B.—F. | | $3^4$ | 1090 | 593 | 20.4 | 7 | 3 | 400 |
| Cont. | | | | | | | | | | | |
| August | X | X | L. R.—F. | 9 | $3^4$ | 1130 | 625 | 20.8 | 4 | 3 | 120 |
| December | X | X | L. R.—F. | | (Very ill) | | | | | | |

| Date Tested, 1912 | Heredity M. | Heredity F. | Name and Sex | Chron. Ment. Age | Chron. Ment. Age by Test | Height, Mm. Std. | Height, Mm. Sit. | Weight, Kilo. | Grip, Kilo. R. | Grip, Kilo. L. | Lung Capacity, C.Cm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | GROUP XIX | | | | | | |
| Subj. | | | | | | | | | | | |
| August | X | X | H. N.—M. | 13 | 6 | 1415 | 740 | 33.9 | 15 | 13.5 | 1000 |
| December | X | X | H. N.—M. | | $6^2$ | 1425 | 765 | 36.2 | 19 | 14 | 1300 |
| Subj. | | | | | | | | | | | |
| August | X | X | L. C.—M. | 14 | $6^4$ | 1452 | 745 | 37 | 18 | 15 | 710 |
| December | X | X | L. C.—M. | | 7 | 1450 | 750 | 39.8 | 20 | 18 | 1400 |
| Cont. | | | | | | | | | | | |
| August | X | X | L. V.—M. | 13 | $6^1$ | 1380 | 731 | 32.8 | 11.5 | 11 | 620 |
| December | X | X | L. V.—M. | | 7 | 1428 | 765 | 35 | 15 | 13.5 | 1400 |
| | | | | | GROUP XX | | | | | | |
| Subj. | | | | | | | | | | | |
| August | X | X | M. P.—M. | 15 | 10 | 1549 | 798 | 43.4 | 23 | 23.5 | 2610 |
| December | X | X | M. P.—M. | | 11 | 1562 | 812 | 46.4 | 23 | 26 | 2650 |
| Cont. | | | | | | | | | | | |
| August | X | X | W. D.—M. | 16 | $10^3$ | 1667 | 867 | 47.6 | 47 | 22 | 2800 |
| December | X | X | W. D.—M. | | $10^4$ | 1680 | 870 | 52.7 | 40 | 22 | 3000 |
| | | | | | GROUP XXII | | | | | | |
| Subj. | | | | | | | | | | | |
| August | X | X | L. B.—F. | 13 | $4^3$ | 1405 | 728 | 32.5 | 13 | 13 | 380 |
| December | X | X | L. B.—F. | | $5^2$ | 1440 | 760 | 34.6 | 16 | 16 | 600 |
| Cont. | | | | | | | | | | | |
| August | X | X | E. L.—M. | 12 | $4^1$ | 1280 | 668 | 23 | 10 | 9 | 650 |
| December | X | X | E. L.—M. | | $4^1$ | 1281 | 670 | 26 | 11 | 13.5 | 850 |
| | | | | | GROUP XXIII | | | | | | |
| August | | | M. B.—F. | | 1 | 900 | 491 | 11.4 | F | F | F |
| December | | | | | 1 | 910 | 520 | 12.4 | F | F | F |
| | | | | | GROUP XXIV | | | | | | |
| October | | | C. A.—F. | | 2? | 910 | 520 | 12.6 | F | F | F |
| December | | | | | 2 | 930 | 545 | 13.4 | 1.5 | 2.5 | F |

On the whole, one cannot but feel that there is a distinct influence in the extract toward mental improvement. However, all such experiments are subject to so many disturbing factors that it seems necessary, in view of the slight gain recorded, that the experiment should be continued for a longer time.

### Summary.

*Mentally.*—We find as a group the 21 subjects have gained 2.23 points. Of the 14 who gained, the average mental gain is 3.35 points. The 14 controls gained as a group 1.35 points mentally. Of the 9 who gained, the average mental gain is 2.11 points.

The subject in Groups I, VII, XII, XIV, XVII, XX, XXII, gained from 4 to 9 points mentally. In each group where there is any mental advance the children have the mentality of three years or more. Those in the idiot group (1-2) have not improved mentally.

*Physically.*—The gain in the standing height for the 21 subjects averages 18.52 mm,; for the 14 controls, 24 c.c.

In weight the 21 subjects gained an average of 2.06 kg., the 14 controls, 2.89 kg. There was no loss of weight in either subjects or controls.

In grip of R. H., the 21 subjects gained an average of .9 kg. as a group and the 12 who gained averaged 1.58 kg. each. The 14 controls gained an average of 3.43 kg., the 10 who gained averaged 4.8 kg. each.

## SALVARSAN IN CRYPTOGENETIC PERNICIOUS ANEMIA.*

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Despite the amount of careful investigation into the etiology of pernicious anemia, it must yet be regarded as cryptogenetic. Some cases will respond, temporarily at least, to treatment based upon one causative theory of the disease, while others, apparently resulting from identical etiological factors, will march rapidly on to a fatal issue. When the disease occurs in patients whose circumstances and surroundings are poor, the chances of temporary improvement seem to be much greater than when it arises in a patient whose environment is luxurious. Our hospital patients in Bellevue and St. Vincent's have responded more promptly to good feeding, with arsenic and hydrochloric acid as medicines, than have the cases seen in private practice in the homes of the well-to-do. Grawitz assigns the chief rôle in causation to the absence of great diminution in the amount of gastric hydrochloric acid. This leads to the development of an intestinal intoxication—by the absence of disinfection of food stuffs in the stomach and the failure of destruction of organisms derived from the mouth. These organisms then pass into the intestine and lead to an inflammation with the production of hemolytic toxins. Secondly, Grawitz believes that there is an incomplete destruction and metabolism of heterogeneous albumins. Based upon these ideas, he advocates a diet from which all animal albumin is excluded, carbohydrates and fats with lemon and fruit juices constituting the exclusive diet. This diet is supplemented by daily lavage with sodium chloride solution, one or two per cent., and daily colon irrigation of the same solution. He administers arsenic hypodermatically, using a neutral one per cent. solution of sodium arsenate, and warning against the use of the organic salts of arsenic.[1] On the other hand, S. P. Beebe and others have reported studies which, in their opinion, demonstrate that nitrogenous metabolism in pernicious anemia is nearly normal.[2] And A. C. Croftan advises abundant protein feeding followed by large doses of hydrochloric acid as producing results in treatment not otherwise obtainable by any means so far described.[3] The consensus of opinion at the last meeting of the American Gastro-Enterological Association seemed to be that the underlying basis of pernicious anemia was some toxin generated in the gastrointestinal tract, as a result of deficiency of hydrochloric acid in the stomach. The fact that it does not always develop in connection with cases of achlorhydria is explained by McCaskey on the supposition that an embryological fault or tendency exists only in cer-

* Discussion at Meeting of Bellevue Hospital Alumni, February 5th, 1913.

tain individuals.[4] Cabot, however, is of the opinion that neither atrophy of the gastric tubules nor gastrointestinal sepsis can be considered as the cause of pernicious anemia, as the first lesion is very possibly due to post-mortem changes, is not found in a considerable number of cases, and even when found is probably a result rather than a cause of the disease which we are studying. He also dismisses the theory of Hunter, now so prevalent, that its cause is sepsis, oral, gastric, or intestinal.[5]

The only light thrown by post-mortem study on the causation of this baffling disease is that a powerful poison has acted upon (1) the blood, producing hemolysis; (2) the spinal cord, causing systemic or patchy degeneration; and (3) the cells of the heart, liver, and kidneys, ending in fatty metamorphosis. With the enthusiasm rightly or wrongly engendered by the discovery of salvarsan, many recent cases of pernicious anemia have been injected or infused with that arsenical compound, especially when a history of previous syphilis can be extracted from a patient. Friedlander reports one case of striking benefit, the red blood count rapidly rising from 887,000 to 3,200,000.[6] Byrom Bramwell has also reported two cases with good results.[7] But in autopsy work at Bellevue Hospital, Norris has found fatty degeneration of the parenchymatous organs, especially of the kidneys, in patients dead from other diseases than pernicious anemia, who had recently undergone the salvarsan treatment. This should make us reluctant to advise its use in a disease which has a tendency in itself to produce fatty degeneration of the viscera. My experience agrees with that of Leede[8], that however useful salvarsan may be in the secondary anemia which occurs in an early stage of syphilis, its use is positively contraindicated in pernicious anemia in a man in the fifth decade who confesses to luetic infection in early life. E. F. Maynard has lately put a case of failure to benefit by salvarsan on record, in order to dispel the growing view that this drug might be a specific in pernicious anemia.[9]

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## THE DISSOLVED ALBUMIN TEST FOR GASTRIC CANCER.

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The large number of laboratory methods which in the last few years have been advanced as aids in the diagnosis of gastric cancer have, for the most part, been too complicated and too unreliable to render their clinical use popular. In this general unpopularity there is one test which has suffered undeserved neglect, that is the dissolved albumin test of Wolff and Junghans. I was much impressed with the value of this reaction as carried out in Ewald's Augusta Hospital Clinic in Berlin, and further experience, though as yet rather limited, has borne out this opinion.

The function of the stomach is to prepare soluble albumin, and it is the combined action of the hydrochloric acid and pepsin which performs this service. When one or both of them are absent we would consequently expect to find no soluble albumin in the material withdrawn one hour after a simple Ewald test breakfast. This expectation appears to be realized in the cases of simple achylia, but where we have cancer of the stomach with absence of free hydrochloric acid we obtain almost as much soluble albumin as we do in the normal stomach. To account for this the originators of the test advance three reasons: (1) The presence of ferments in the cancer itself, similar to the peptid ferment of Neubauer and Fischer; (2) Albumin secreted from the growth; and (3) The diminished absorption on account of the secondary gastritis.

The method of performing the test is very simple. One hour after a Ewald test breakfast the contents of the stomach are withdrawn, tested with congo red, and filtered. *If there is no reaction with congo red* we take six clean test tubes and with a finely divided 1-c.c. pipette measure off into the first tube 1 c.c. of the filtered contents; in the second we place 0.5 c.c.; in the third 0.25 c.c.; in the fourth 0.1 c.c.; in the fifth 0.05 c.c., and in the last likewise 0.05 c.c. The next step is to make up the contents of each tube to 1 c.c. by adding distilled water; so to the first we add nothing, to the second 0.5 c.c., to the third 0.75 c.c., to the fourth 0.9 c.c., and to each of the last two 0.95 c.c.

Now to each tube except the sixth we add 9 c.c. of distilled water, to the sixth we add 19 c.c. The dilutions in the several tubes in order are now 1 in 10, 1 in 20, 1 in 40, 1 in 100, 1 in 200, 1 in 400. After thoroughly mixing the contents of each tube we remove 10 c.c. from the last one in order to equalize the amount in each.

Upon the contents of each tube is layered very carefully and slowly 1 c.c. of the following solution: Phosphotungstic acid, 0.3; concent. hydrochloric acid, 1.0; alcohol (96 per cent.), 20.0; distilled water, to 200.0.

Examine each tube at once for a white ring at the junction of the two liquids; if present in none or in the first three only, the case is benign; if present up to and including the fourth the diagnosis is doubtful but probably cancer; if in either of the last two tubes we almost surely have to do with a malignant growth.

The cases which have been published, almost without exception, show favorable reports, and I wish to add to them a few of my own.

*Cases Which Gave a Negative Reaction.*—(1) Pernicious anemia, negative in all dilutions; (2) Secondary anemia (noncancerous), negative in all dilutions; (3) Cancer of head of pancreas (operation), positive to 1 in 40; (4) Chronic gastritis, positive to 1 in 40; (5) Visceroptosis (young women), positive to 1 in 40; (6) Visceroptosis (young woman), negative in all dilutions; (7) Diagnosis uncertain, but malignancy excluded, positive 1 in 20; (8) Chronic gastritis, positive 1 in 20.

*Cases which Gave a Positive Reaction.*—(1), (2), and (3), Gastric cancer (advanced case, palpable tumor), positive to 1 in 400; (4) Pyloric obstruction, malignant (operation), positive 1 in 200; (5) Cancer of colon, with involvement of stomach (operation), positive to 1 in 400; (6) Cancer of stomach (no tumor), positive 1 in 400; (7) Cancer of stomach (advanced case), positive 1 in 400.

There are several important precautions which

must be observed in performing the test. (1) For a positive reaction the ring must form within a few minutes; a ring which only appears after standing for some time cannot be included. (2) I have found that a solution of blood up to one in three thousand will give a faint ring, so that contents which contain more than a faint trace of blood must be used with caution. (3) One must be careful with contents which contain no free acid, but a high proportion of combined acid; peptone is usually present in these cases. (4) Cancer of the cardia is not as likely to give a positive reaction as cancer in other parts of the stomach.

The test may be criticised because of its impracticability for diagnosing very early cases of cancer, but we must differentiate between the ideal and the real diagnosis of this disease, and so excellent an aid in distinguishing between a benign and a malignant achylia will often be found very helpful.

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693 Spadina Street.

## CYSTIC POLYPUS IN THE NASAL PHARYNX OF A CHILD.

By EDWIN A. GRIFFIN, M.D.,

BROOKLYN, N. Y.

LARYNGOLOGIST AND RHINOLOGIST AT THE LONG ISLAND COLLEGE HOSPITAL DISPENSARY; LARYNGOLOGIST, RHINOLOGIST, AND OTOLOGIST AT THE BROOKLYN CITY AND NEW UTRECHT DISPENSARIES AND SAMARITAN HOSPITAL.

A lad, seven years of age, American nativity, was brought by his mother to the New Utrecht Dispensary to have his adenoids and tonsils removed. The mother said she had him operated upon for the same condition at a New York dispensary one year previous but no benefit resulted. The patient was a typical mouth breather, with a dull facial expression and a prominent nasal twang. No preliminary examination could be made of his throat or nose as he was greatly frightened by reason of his former dispensary experience. Anesthesia was induced and preparations made for the extirpation of tonsils and adenoids.

The stumps of the tonsils, which were left in after the other operation, were removed. I then inserted my finger behind the soft palate, ready to employ the adenoid curette, when a large fluctuating mass in the nasal pharynx was felt. As the patient was on the verge of coming out of the anesthetic, I quickly, by digital manipulations, delivered *en masse* a large cystic polypus with a long fibrous pedicle.

The growth, as shown in the accompanying photograph, was as large as a good sized hickory nut. Upon the second visit of the patient, I had no difficulty in making a thorough anterior and posterior rhinoscopic examination and found the nasal cavities free from any more polypi. The boy now talks and breathes normally.

I report this case because it is extremely rare to find such a large polypus in such a young patient and also it is rare not to find some associated polypi in the nasal cavities. The growth without doubt was there at the time of the previous operation one year ago.

340 Stuyvesant Avenue.

## CASE OF EXOPHTHALMIC GOITER CURED BY *X*-RAY.

By SINCLAIR TOUSEY, A.M., M.D.,

NEW YORK.

A case in which no treatment has been required and no return has taken place for seven years is certainly noteworthy.

The patient, Mrs. W. S. B., was accompanied to my office by Dr. I. N. Love of Wilmington, N. C., on September 14, 1905. She was 32 years old, weighed 116 pounds, had a blood pressure of 140 mm. and a pulse of 130. There was moderate exophthalmos; Graef's symptom was marked, the upper lid not following the motion of the eyeball when she looked down; there was such palpitation of the heart that it shook the whole bed and kept her husband awake nights; tremor of the fingers to such an extent that she could not pour out a cup of tea.

The treatment consisted in applications of the *x*-ray and high frequency currents from a vacuum electrode over the thyroid gland. The applications were made three times a week for about three months. Arsenic and strychnine were given as the only medicines and only for a short time. She returned to her home in the South a well woman with a request that Dr. Burbank, then her physician, should watch the pulse and other symptoms and send her for additional treatment if required.

Within a year she was subjected to great anxiety by the illness of her little girl but there was no recurrence of the disease. She makes a trip to New York every winter for examination but each time she has been found absolutely normal. The last time I had an opportunity to show her at a demonstration of *x*-ray dosage before members of the Congress of Clinical Surgeons of North America.

Recently such cases under my care have had the advantage of treatment with a new *x*-ray generator, the invention of which is partly due to a suggestion of mine. It is more powerful than anything I have previously had and is in effect a dynamo producing a constant direct current of from 10 thousand to 110 thousand volts. This means greater speed and safety in radiography and ability to secure simply the penetrating rays for deep seated lesions or the less penetrating rays for surface lesions instead of the mixture of rays produced by previous induction coils and transformers.

850 Seventh Avenue.

**Abortive and Familial Types of Exophthalmic Goiter.**—R. Dumont reports two cases of exophthalmic goiter. One of the patients was an unmarried woman aged 31 years, whose uncle, on the paternal side, had a double exophthalmos. Her symptoms were chiefly a tremor, extreme irritability, congestion of the face, and cyanosis of the extremities, although there was no marked enlargement of the thyroid gland. The second case was that of a male aged 21 years, whose mother was affected with typical exophthalmic goiter. The symptoms in this patient were a moderate tremor, a slight enlargement of the thyroid gland, vasomotor disturbances in the skin, irritability of temper, insomnia, and a unilateral exophthalmos.—*La Policlinique.*

MEDICAL RECORD.

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New York, May 10, 1913.

## INFANT MORTALITY.

With the approach of the summer season the health officer should be prepared to combat the mortality among infants. The months of July, August, and September draw a heavy toll on our babies as from one-third to one-half of the baby deaths are recorded during these months. That infant health is a purchasable commodity is clearly shown by the report of the New York State Department of Health, in its monthly Bulletin for March, 1913. Infant mortality as defined by the United States Census Bureau is the ratio of the number of deaths of infants under one year of age, exclusive of still births, to 1,000 children born alive. During the year 1912 the infant mortality in the whole State of New York was 108.9. This represents a marked decrease from previous years. That this decrease is not accidental is rendered probable by the fact that for the last nine years it has been steadily and uniformly decreasing year by year. Thus in 1904 it was 151, and each successive year since then has seen a lowering of the rate of the previous year except in 1910 when the rate almost exactly equalled that of the year before. Comparing city with country it is interesting to note that in 1912 the infant mortality in the country district of the State was only one per cent. higher than in the cities. In this connection, however, New York City taken alone excelled the rest of the State considered as a whole, for the infant mortality of greater New York was only 105 as compared with 108 for the rest of the State. That the general reduction in infant mortality is due to the increasing activities of local health boards in providing pure clean milk for general consumption seems a justifiable conclusion. It is also likely that the establishment of infant welfare stations and the instruction which mothers receive at the same relative to the proper care and feeding of the infant have also played their part in this reduction.

To educate the mothers and to provide pure milk is the dual problem. Although both these difficulties are being gradually met they are still a long way from final solution. The law may be ever so stringent so far as the requirements for pure milk are concerned but perfection can never be reached in the matter so long as the milk business is so cut up among small dealers and the farmers so hard pushed to make decent profits. This phase of the subject was ably presented at the last International Congress of Hygiene and Demography by John B. Williams, Secretary of the Monroe County (N. Y.) Medical Society's Milk Commission. This Commission, after careful investigation of the conditions in Rochester, N. Y., came to the conclusion that competition caused waste, carelessness, and unnecessary labor in the handling of the milk which resulted in a lowering of its quality as well as a material increase in its cost to the consumer. They found by direct experiment that milk could be delivered in their city at about one-fourth the present cost to the consumer, and that such milk could be uniformly relied upon to conform to the proper standards. As their conclusions were based upon a study of the conditions existing on some forty odd farms and among 173 vendors and 5,400 consumers, besides the direct experiment of going into the business for themselves, it would seem that they should be given great weight. If, as they claim, the chief reasons for milk remaining uncertain in quality and high in price to the average consumer are due almost entirely to wasteful and unbusinesslike methods upon the farm, and to the fierce competition among small dealers it would seen reasonable to conclude that the solution of this phase of the problem would consist in State control of both supply and distribution. And why should any one really object to such a movement? The water supply of the towns and cities has long ago been taken over by the municipalities and considered in its true sense the problem of a pure milk supply is as much of a public function as that of the water. So long as competition remains in the business of supplying this necessity of life we can expect that poor milk will always be the only kind which poor people will be able to buy. At the present time this phase of the subject is rendered less acute in many cities owing to the charity of the rich. But this supplying by charitable means what should by rights be within the reach of the poorest purse is only a temporary and at the best a poor makeshift. To control this phase of the situation effectually the State must either own and control the supply and distribution or else these must be given over to some central corporation with supervision of price and manner of conducting the business undertaken by a public service commission. But insured a pure milk supply at a price within the reach of all, the problem of educating the mothers in the proper care and feeding of the infants still remains.

Probably the work already undertaken in the way of establishing infant welfare stations and the activities of the local boards of health in disseminating leaflets containing simple instructions to mothers are the best roads to take in accomplishing the proper care and feeding of the infants. The special Public Health Commission appointed by Governor Sulzer advises in its report that "Each city with a population in excess of 10,000 and having an industrial population should have one Infant Welfare Station for each 2,000 inhabitants." Besides the factors mentioned in the reduction of infant mortality there remains one other of almost as great importance. That is the house fly. The milk may be ever so good and the mother ever so intelligent

and the baby will still sicken of intestinal trouble so long as this pest carries filth and infection. Of course intelligence on the part of the mother will lessen the danger of the fly having access to the food but it cannot eliminate it altogether.

Three remedies then for the still high infant mortality are: (1) State control of the supply and distribution so that good milk can be brought within the reach of all at a price which the poor as well as the rich can afford. (2) Education of the mothers along the lines already undertaken in a small way in some cities and towns. (3) Fly extermination. Of these remedies the public is ready to partake freely of the last two. The first one is perhaps so suggestive of socialism that it will be opposed by many who fear the results of any movement in the way of State control of business undertakings.

## HEART DISEASE AND THE MODERN RUSH.

In the annual report submitted by Dr. Newsholme, the Medical Officer of the Local Government Board in London, the truth well known among physicians is restated—that heart and arterial diseases have in recent years been increasing among those in the afternoon of life; and Dr. Newsholme attributes this to the strain, the worry, the hurry, and the dreadfully high pressure of modern commercialism, all tending to abnormal wear and tear on the precious organ which, with its vessels, must supply to the body its life-sustaining fluid. The nervous system, which is basic for all existence, and which especially controls the circulation, is under constant stimulus. Thus in England, it appears, one-third of the deaths in the age period 55 to 65 come about through damaged myocardium and sclerosed vessels.

Medical men in this country have for more than a decade recognized the phenomena referred to by the English observer. Not to add statistics-delving to the strains above mentioned, we may note simply that the Census Bureau at Washington gives the following percentages which the death rates in the years progressively from 1901-7 inclusive, represent of that in 1900—Circulatory diseases (heart and vessels): 101.2, 105.7, 110.7, 119.8, 120.0, 122.9, 134.1. And our last Census report (issued Sept. 11, 1911) states: "During the last decade there has been a large increase in the number of deaths and death rates from organic diseases of the heart and of the circulatory system in general." As to cities, heart disease is reported to have caused many more deaths in 1907 than in 1906—in Chicago and Boston 13 per cent. more, in New York 29, in Detroit 26, in Philadelphia 5, etc.

A factor coupled in its fatal consequences with the abnormal stress of modern life is, that men of affairs who have come down with pneumonia, grippe, and like infections (the toxins in which are dreadfully disintegrating of the organs and other vital tissues), can simply not be made to take the prolonged rest which is imperative during the convalescence from these diseases. Many of these patients (and elderly men, too) are in their offices when they should most decidedly be in their beds. "Such a fussy lot, these doctors," declared such an one. "Besides, an old horse that once lies down never gets up." He put on his overcoat, went to business, returned that afternoon in collapse, and died next day.

The fault is not here with the doctors, to whom it is not given to command the *zeitgeist*, to dominate the manners and customs of the age. They can but warn against fast living, undue indulgence in indigestibles and intoxicants, and against business habits conducive to such nerve tension as must inevitably wreck the organism to its untimely dissolution; they can but indicate the weak and uncertain pulse, the dyspnea, the blue lips and finger tips, the ashy face, the distended veins in the neck—and tell the dire meaning of these signs.

## THE BLOOD PICTURE OF LYMPHATISM.

One of the greatest desiderata in clinical medicine is a biometric criterion for any one of the so-called diatheses, habits, temperaments, which are believed to underlie most of the chronic diseases. The phenomena believed for years to point to lymphatism, scrofulosis, thymicism, and other related states, while possessing an anatomical substratum, have only represented approximations or averages; and such evidence as they furnished, however considerable, was not sufficient to demonstrate beyond doubt the existence of basic constitutional peculiarities.

Attempts have long been made to see in certain blood pictures something characteristic of these peculiarities. Certain authors have claimed that in lymphatism we have always a lymphocytosis, others eosinophilia. These claims have been based in part on theoretical conditions and also upon confusing a primary lymphatism with secondary conditions due to disorders of the ductless glands.

At a recent session of the Society for Internal Medicine and Diseases of Children, Vienna, Siess and Stoerk described a blood picture regarded by them as quite characteristic of lymphatism (*Berliner klinische Wochenschrift*, March 24). This is as follows: (1) Increase, often pronounced, in the number of blood plates. (2) Distinct diminution in the number of eosinophiles. The other forms of corpuscle show no constant changes and are present within normal limits. By lymphatism the authors refer solely to the so-called status thymico-lymphaticus as a primary anomaly of the anatomical constitution; and not in any way to combinations of lymphatism with other diatheses. In the pure state there is neither lymphocytosis, nor leucopenia. We may at times see a relative lymphocytosis, but this possesses no element of specificity, and is due to a diminution in the number of neutrophiles.

### Proposed Marriage-License Bill.

It is reported that the bill regulating marriage along health lines has been reintroduced in a modified form into the legislature of this State, and it is stated that the bill has been indorsed and is being actively pushed by many organizations working for physical and social betterment. That it should be possible to introduce such a bill is a healthy sign

of the times since it is a proof that public opinion, so hard to arouse, is becoming fully awake to the menace to the well being of the nation and race which exists in the uncontrolled propagation of the unfit. Whether, however, the time is yet ripe for invoking the help of the law in the direction of supervising marriages is another question. The matter is hedged in with so many difficulties that it seems almost impossible, at the present time, to devise practical means of solving the problem. But the significant feature of the situation lies in the fact that the public is taking an active interest in the subject and is beginning to understand that it is one which it intimately concerns. Even if many of the schemes brought forward are unworkable, at least, they show that steps are being taken to endeavor to save the race from deterioration and with the aid of those best qualified to grapple successfully with the problem some practical plan may possibly be evolved.

## News of the Week.

**City Death Rate.**—During the week ending April 26, there were 1,667 deaths reported in New York City, a rate of 16.28 per thousand, as against a total of 1,529 deaths and a rate of 15.42 for the corresponding week of 1912. The increased mortality extended throughout practically all of the age groups, almost one-third of it occurring among children under five years of age. There was a comparatively large number of deaths due to diphtheria, croup, and whooping cough in the Borough of Manhattan, and deaths from diseases of the heart and respiration were also much increased as compared with last year.

**Hospital Cornerstone Laid.**—The cornerstone for the new Greenpoint Hospital at Kingsland Avenue and Bullion Street, Brooklyn, was laid on April 27, by Comptroller Prendergast with appropriate ceremonies. The new building will cost $300,000 and will be six stories high.

**Police Surgeons Investigated.**—The findings of the board appointed by the Curran Committee to investigate the surgical board of the Police Department of New York City were made public on April 27. The board, composed of Dr. E. C. Bray and Dr. C. McCoombs, found much to censure and apparently little to praise. The police surgeons, of whom there are twenty-four, receive a salary of $3,500 a year each, and are eligible for pensions. According to the report some of the bad features of the present system are that the police surgeons have no set hours of duty daily; are not required to live within the districts to which they are assigned, and at times are not available when needed; that no surgeons are assigned to night duty; that they are not required to inspect the sanitary condition of the station houses; that they give only a disciplinary supervision of patients, their chief duties being to make physical examinations of applicants for appointment and retirement, and to determine whether sick leave is to be granted; that there is no proper system in force of keeping medical histories of the men examined; and that the privilege of engaging in outside practice without restrictions and the absence of regulations as to hours of duty have resulted in the surgeons making their work in the department subordinate to their private practice. The constructive recommendations made by the investigators are that the police surgeons be required to devote their entire time to the work, or that at least six hours of duty a day be required, the police work being given preference over private work; that once a year every member of the police force be thoroughly examined to determine his physical fitness; that the surgeons be required to live within their districts and to make monthly inspections of the station houses; and that they be not allowed to treat the families of policemen. The records show that during the year from March 1, 1912, to March 1, 1913, the total days of work lost to the city through sick leave in the Police Department numbered 79,788.

**Faculty Appointments at the College of Physicians and Surgeons.**—At a meeting of the Trustees of Columbia University, New York, held on May 3, the Chair of Bacteriology, made vacant by the death of Prof. Hiss, was filled by the appointment of Dr. Hans Zinsser, formerly instructor in the department under Prof. Hiss and more recently professor of bacteriology at Leland Stanford University.

The following appointments were made also: Professors of Clinical Surgery, Dr. Walton Martin, advanced from associate, and Dr. H. H. M. Lyle; Assistant Professors of Clinical Surgery, Dr. Frank S. Mathews and Dr. William A. Downes; Assistant Professor of Pharmacology, Dr. C. C. Lieb; Professors of Clinical Medicine, Dr. James Alexander Miller, advanced from assistant professor, and Dr Austin W. Hollis; Assistant Professors of Clinical Medicine, Dr. Lewis F. Frissell, and Dr. T. Stuart Hart.

**Personals.**—Dr. Maximilian Herzog of Chicago is to be placed in charge of a research laboratory soon to be established by the Jesuits at Loyola University in that city, for the purpose of testing out alleged cures for tuberculosis and other diseases, and for doing research work, particularly in serum therapy.

Dr. William S. Bainbridge of New York spoke on "Chronic Intestinal Stasis," before a meeting of the Cumberland County Medical Society at Portland, Maine, on April 19.

**Class of '98, N. Y. U. Medical College.**—The quindecennial dinner of the class of 1898, New York University Medical College was held at the Yale club on May 3, 1913. Dr. Harvey Losee of Upper Red Hook, president of the class, was in the chair. Dr. Walter B. Jennings of New York City was toastmaster. Dr. Egbert Le Fevre, dean of the medical school, spoke on "Medical Education," and Dr. Edward D. Fisher also addressed the class, after which each member of the class made a few remarks. It was decided to have a class dinner every five years. Twenty-two men were present.

**New York Society of Anesthetists.**—A meeting of this Society will be held at the New York Academy of Medicine on May 14, at 8:15 P.M. Papers will be read by Dr. J. M. Flint on "Pharyngeal Anesthesia," and Dr. C. J. Pick on "Ethyl-Chloride Anesthesia."

**Northern Medical Society.**—A meeting of this Society will be held May 19 at 8.45 P.M., at 12 Mt. Morris Park West. Papers will be read by Dr. Nathaniel Barnett on "Successful Treatment of Vulvovaginitis in Young Children," and by Dr. Wm. J. Robinson on "Should Venereal Disease Be Reported to the Board of Health?" Followed by general discussion.

**No Labels for Children.**—Pressure of public opinion caused the Board of Health of Kearny,

N. J., to withdraw its proposed ordinance requiring children living in houses in which there were cases of whooping-cough to wear yellow bands around their arms. The proposal was made because of a recent epidemic of the disease in the town, but it met with much opposition from the parents.

**Memorial to the Kaiser.**—In compliance with the German Emperor's expressed wish that all funds subscribed in connection with his silver jubilee next June be devoted to local philanthropic purposes, the executive committee of the Kaiser Memorial Fund in New York announces that the fund will be used toward the establishment of the Kaiser Wilhelm Pavilion, a hospital building now in course of erection as a part of the German Hospital and Dispensary, New York.

**Street Accidents.**—During the month of April forty persons were killed by street traffic in New York City, of whom twenty-two were children. One hundred and sixty-six persons were seriously injured, by far the larger part of the accidents being due to motor cars.

**American Medical Editors' Association.**—The annual meeting of this society will be held June 16 at the Hotel Radisson, Minneapolis, Minn. An interesting program has been prepared, covering items of journalistic as well as general information. The annual banquet will be held on the evening of the 16th at the Radisson Hotel.

**Gifts to Hospitals.**—The Long Island College Hospital, Brooklyn, receives a bequest of $5,000 under the will of the late Josiah M. Fabill of that city.

**Medical Association of Georgia.**—At the annual session in Savannah on April 17 to 19 the following officers were elected: *President,* Dr. Ralston Lattimore, Savannah, *Vice-Presidents,* Dr. J. D. Chason, Bainbridge, and Dr. S. R. Roberts, Atlanta; *Secretary-Treasurer,* Dr. W. C. Lyle, Atlanta. The next convention will be held in Atlanta.

**Louisiana State Medical Society.**—The following officers were elected at the close of the annual meeting in Baton Rouge, April 24: *President,* Dr. Fred J. Mayer, Opelousas; *Vice-presidents,* Dr. A. J. Perkins, Lake Charles; Dr. A. H. Gladden, Monroe, and Dr. W. S. Rutledge, Ruston; *Secretary,* Dr. L. R. DeBuys, New Orleans; *Treasurer,* Dr. E. W. Mahler, New Orleans.

**Medical Society of the State of California.**—Officers were chosen at the annual meeting in Oakland on April 16 as follows: *President,* Dr. Fitch C. E. Mattison, Pasadena; *Vice-presidents,* Dr. Barton J. Powell, Stockton, and Dr. George E. Tucker, Riverside; *Secretary,* Dr. Philip Mills Jones, San Francisco.

**Foundation of the American College of Surgeons.**—A meeting of the organization committee, authorized and appointed at the Clinical Congress of Surgeons of North America, was held at the Willard Hotel, Washington, D. C., May 5, 1913. Dr. Edward Martin of Philadelphia acted as Chairman, and Dr. Franklin H. Martin of Chicago as Secretary. The object of the meeting was stated in the language of the following resolution bringing it into existence:

"*Resolved,* That this largest organization of surgeons on the American continent, the Clinical Congress of Surgeons of North America, shall assume the responsibility of standardizing surgery. This should be accomplished through representative committees and along the following lines: (1) It should formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine, who is allowed to perform independently surgical operations in general surgery, or any of its specialties. (2) It should consider the desirability of listing the names of those men who desire to practise surgery, and who come under the authorized requirements. (3) It should seek a means of legalizing under national, colonial, state or provincial laws, a distinct degree supplementing the medical degree, which shall be conferred upon physicians possessing the requirements recognized by this law as necessary to be possessed by operating surgeons. (4) It should seek cooperation with the medical schools of the continent which have the right to confer the degree of M.D., under the present recognized standards, and urge these colleges to confer the supplementary degree of surgeon on each of its graduates who have, in addition to their medical course, fulfilled the necessary apprenticeship in surgical hospitals, operative laboratories and actual operative surgery. (5) It should authorize and popularize the use of this title by men upon whom it is conferred, and its use should especially be urged in all directories of physicians, in order that the laity as well as the medical man can distinguish between the men who have been authorized to practise surgery and those who have not."

This committee decided to commit the decision of the desirability of the method of organization, and the accomplishment of an organization which would fulfill the spirit of instructions of the Congress to the strongest representation of surgeons that could be gotten together. The results of the committee's efforts were that five hundred representative surgeons from all portions of the North American continent have consented to become founders of the organization under contemplation, and of this five hundred fully three hundred were present in Washington to fulfill their obligations. The Chairman stated that the object of the meeting was to formulate further and endorse the work that had been done by the subcommittee in regard to the standardization of surgery, for the benefit of the profession and the protection of the public. Every one was in sympathy with the object. The following resolutions were adopted:

"*Resolved,* That the surgeons who were invited to become the Founders of this Corporation are hereby declared Fellows of the College of Surgeons, and shall receive their election by the Board of Regents without further formality.

"*Resolved,* That such other surgeons in the territorial dominion of the College, whose surgeonship can be unquestionably approved by the Committee on Credentials be at once, without the formality of an examination, recommended to and received by the Board of Regents as accredited Fellows of the College of Surgeons.

"*Resolved,* That members of the societies of surgeons and surgical specialties holding accredited positions in the federation of societies constituting the Congress of American Physicians and Surgeons, shall also be accepted as Fellows of the College of Surgeons without the usual formality required by the Board of Regents.

The following resolutions regarding the selection of Fellows were likwise adopted:

"*Resolved,* That the prospective Fellows of the College be divided, for the purpose of classification, into four groups to be designated A, B, C, and D

classes, respectively. The A Class shall consist of the Founders of the College. The B Class shall consist of the members of the special surgical societies constituting the Congress of American Physicians and Surgeons, and one hundred each, nominated by an accredited committee, from the Surgical Section of the American Medical Association, from the Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, from the General Surgical Section of the Clinical Congress of Surgeons of North America, from the Surgical Specialties of the Clinical Congress of North America, from the American Association of Obstetricians of Gynecologists, from the Canadian Medical Association, from the Southern Surgical and Gynecological Association, and from the Western Surgical Association. The C Class shall consist of surgeons of prominence of ten years in the practice of surgery or a surgical specialty, and who, in the opinion of the Committee on Credentials, are eligible for Fellowship in the College without formal examination. The D Class shall consist of surgeons who cannot, in the opinion of the Board of Regents, be classified under A, B, or C divisions, and for whom the college must establish an examination or other evidence of acceptable qualifications.

"*Resolved*, That the Board of Regents through the Committee on Credentials limit the admission of Fellows to classes A, B, and C until the Board of Regents formulates a standard of requirements for Class D and reports the recommendations back to the Board of Governors for approval at a meeting to be called by the Board of Regents at the time of the next meeting in Chicago, November, 1913."

The following officers were elected: *President*, Dr. J. M. T. Finney, Baltimore, Md.; *Vice-President*, Dr. Rudolph Matas, New Orleans, La.; *General Secretary*, Dr. Franklin H. Martin, Chicago, Ill.; *Treasurer*, Dr. A. J. Ochsner, Chicago, Ill.

*Board of Regents:* Dr. George E. Brewer, New York City; Dr. Geo. E. Armstrong, Montreal, Can.; Dr. John B. Murphy, Chicago, Ill.; Dr. Edward Martin, Philadelphia, Pa.; Dr. F. J. Cotton, Boston, Mass.; Dr. Herbert A. Bruce, Toronto, Ontario; Surgeon-General W. K. Stokes of the Navy; Dr. William D. Haggard, Nashville, Tenn.; Dr. Geo. W. Crile, Cleveland, Ohio; Dr. McKechnie, Vancouver; Dr. Charles H. Mayo, Rochester, Minn., and Dr. Harry Sherman, San Francisco, Cal.

**Medical Society Elections.**—Medical Association of the State of Georgia: Annual meeting at Savannah on April 17 and 18. Officers elected: *President*, Dr. Ralston Lattimere, Savannah; *Vice-Presidents*, Dr. J. D. Chosen, Bainbridge, and Dr. S. R. Roberts, Atlanta; *Secretary-Treasurer*, Dr. W. C. Lyle, Augusta.

South Carolina State Medical Association: Annual meeting at Rock Hill on April 15 to 18. Officers elected: *President*, Dr. William Weston, Columbia; *Vice-Presidents*, Dr. J. R. Miller, Rock Hill; Dr. W. Ouzts, Edgefield; and Dr. J. H. Miller, Cross Hill; *Secretary-Treasurer and editor of the Medical Journal*, Dr. E. A. Tines Seneca.

Plymouth District (Mass.) Medical Society: Annual meeting at Brockton on April 17. Officers elected: *President*, Dr. Charles E. Lovell, Whitman; *Vice-President*, Dr. Nathaniel C. King, Brockton; *Secretary-Treasurer*, Dr. Alfred C. Smith, Brockton.

Middlesex South District (Mass.) Medical Society: Annual meeting on April 16. Officers elected: *President*, Dr. Godfrey Ryer, Malden; *Vice-President*, Dr. William D. Swan, Cambridge; *Secretary*, Dr. Lyman S. Hapgood, Cambridge; *Treasurer*, Dr. Charles A. Dennett, Arlington.

**Obituary Notes.**—Dr. J. Lester Carney of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1888, and a member of the New York State and Kings County Medical Societies, died at his home on April 22, aged 62 years.

Dr. John Coert Dubois of Hudson, N. Y., a graduate of the New York University Medical College in 1857, died at his home on April 29, aged 81 years.

Dr. Egbert D. Doolittle of Easton, Penn., a graduate of Bellevue Hospital Medical College, New York, in 1870, a member and former president of the Lehigh Valley Homeopathic Medical Society, and a member of the Pennsylvania State Homeopathic Medical Society, died at his home from valvular disease of the heart, on April 12, aged 66 years.

Dr. Robert Campbell of Jamaica, New York, Registrar of Vital Statistics in the Queens Borough Division of the Department of Health of New York City, at his home on April 18, aged 62 years.

Dr. Charles James Fox of Hartford, Conn., a graduate of New York University Medical College in 1876, a member of the American Medical Association and of the Connecticut State and Hartford County Medical Societies, secretary of the Board of United States Examining Surgeons of Hartford, and formerly president of the National Association of United States Examining Surgeons, died after a short illness on April 19, aged 59 years.

Dr. Samuel Bell of Beloit, Wis., a graduate of the University of Michigan, Department of Medicine and Surgery, in 1864, a member of the Wisconsin State and Rock County Medical Societies, and president of the first Board of Health in Wisconsin, died at his home on April 18, aged 72 years.

Dr. Oliver H. Koons of Brooklyn, N. Y., a graduate of the Jefferson Medical College, Philadelphia, in 1883, died at his country home in South Orange, N. J., on April 23.

Dr. Orlando W. Sutton of Bath, N. Y., a graduate of the Eclectic Medical College of the City of New York in 1891, died suddenly at his home on April 25, aged 64 years.

Dr. Marion D. Carter of Los Angeles, Cal., a graduate of the Missouri Medical College, St. Louis, in 1882, and a member of the California State and Los Angeles County Medical Societies, died in the Crocker Street Hospital, Los Angeles, as the result of injuries received in an automobile accident, on April 9, aged 56 years.

Dr. Hezekiah John Crumpton of Piedmont, Cal., a graduate of the Rush Medical College, Chicago, in 1871, and a member of the American Medical Association and of the California State and Alamedo County Medical Societies, died at his home on April 8, after a short illness, aged 84 years.

Dr. Harriet Adaline Thompson of Bridgeport, Conn., a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, in 1893, and a member of the Connecticut State and Fairfield County Medical Societies, died at her home on April 18, as the result of injuries received in a fall a few days before, at the age of 64 years.

Dr. Joel B. Yingling of Baltimore, Md., a graduate of the University of Maryland School of Medicine, Baltimore, in 1878, died at his home on April 14, aged 65 years.

Dr. W. G. Carter of West Liberty, Ky., the oldest resident of the town, died at his home after a short illness on April 12, aged 92 years.

Dr. Winfield S. Sayler of Gratis, Ohio, a graduate of the Medical College of Ohio, Cincinnati, in 1880, and a member of the Ohio State and Preble County Medical Societies, died at his home following amputation of his right leg for blood poisoning, on April 18, aged 60 years.

Dr. Frank Graham of Lisbon, Ohio, a graduate of the Medical College of Ohio, Cincinnati, in 1880, and a member of the American Medical Association and the Ohio State and Columbiana County Medical Societies, died in the Youngstown Hospital, following an operation for disease of the stomach, on April 13, aged 53 years.

Dr. Bryan B. Ashbrook of Pataskala, Ohio, a graduate of the Columbus Medical College in 1882, was instantly killed on April 21, when the automobile which he was driving was struck by a special train on the Pennsylvania Railroad. Dr. Ashbrook was 56 years of age.

Dr. P. K. Wortham of Waco, Texas, a graduate of the Missouri Medical College, St. Louis, in 1879, died at his home after a long illness, on April 8, aged 75 years.

Dr. John W. C. O'Neal of Gettysburg, Pa., a graduate of the University of Maryland, School of Medicine, Baltimore, in 1844, died at his home on April 25, aged 92 years.

Dr. Simon Hubler of Scranton, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1879, died at his home on April 24, aged 66 years.

## Obituary.

### FRANCIS PARKER KINNICUTT, M.D.,

NEW YORK.

Dr. Francis Parker Kinnicutt of New York, professor of clinical medicine in the College of Physicians and Surgeons, Columbia University, died suddenly on May 2, from apoplexy, while attending a meeting of the Practitioners' Society.

Dr. Kinnicutt was born in Worcester, Mass., on July 13, 1846, and pursued his academic studies at Harvard University, receiving the degree of A.B. in 1868 and of A.M. in 1869. He then entered the College of Physicians and Surgeons, New York, graduating in 1871, and followed this with post-graduate work in Heidelberg and Vienna in 1873-74, after which he began the practice of medicine in this city. In 1893, Dr. Kinnicutt was made professor of clinical medicine in the College of Physicians and Surgeons, and he served also as attending physician to the Presbyterian Hospital, consulting physician to St. Luke's Hospital, the Woman's Hospital, the Hospital for the Ruptured and Crippled, the Babies' Hospital, the General Memorial Hospital, Minturn Hospital, and the Vassar Brothers Hospital, Poughkeepsie, and as a member of the medical advisory board of the Department of Health of the City of New York and of the advisory board of Sailors Snug Harbor. He was a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the Association of the Alumni of the College of Physicians and Surgeons, and the Association of American Physicians, of which he was president in 1907.

## Correspondence.

### LONDON LETTER.

(From Our Regular Correspondent.)

ROYAL COMMISSION ON THE LONDON UNIVERSITY REPORT—FIBROSITIS, HARVEIAN LECTURE—ANTI-VIVISECTIONISTS' LIBEL ACTION—NAVAL MEDICAL DIRECTOR—LONDON HOSPITAL—OBITUARY.

London, April 18, 1913.

The Royal Commission on University Education in London has issued its final report. It pronounces the present organization of the London University to be "defective" and recommends a complete new constitution. The defects mainly arise from the relations of the internal and external sides and originate in the Act of 1898. The councils of the two sides are dominated by incompatible ideals, the former holding that training in a university under its teachers is the essential of university education; the latter that examinations after education in other institutions may suffice to determine whether a candidate has attained a position entitling to a university degree. The history of the London University is largely the history of this dispute. At first it was an examining body for the technical colleges it recognized and in general education for all who chose to become candidates. By multiplying examinations and fixing a high standard it was sought to make its degrees equally esteemed with the older universities. Success was not secured in this, the prestige of the ancient foundations having scarcely any relation to their examinations. The medical degrees of the London University have all along maintained a high position as certificates that the holders have acquired extensive knowledge, though it has been felt that this was rather more theoretical than practical—the result of more book work than clinical instruction. In the commissioners' new scheme a Faculty of Medicine is to be constituted when funds are available for professors and to obtain control of one or more medical schools. The reorganization thus proposed seems to be the importation of the German clinic and is sure to be opposed as inferior to the independent and competitive London schools. The commissioners do not deny that our physicians and surgeons use the aids science can give for diagnosis and treatment, but only that they do not attack the problems of disease, and so they want to set a professor over them. Is not that just what might be expected from people ignorant of the history of London medical teaching and practice?

The report has only been out two days and more time is needed to appreciate its merits or demerits, but already I hear strong condemnation of it so far as medical matters are concerned. The present external graduates will, doubtless, organize an opposition to a scheme which clearly tends to exterminate them.

The Harveian Society of London's lecture in commemoration of Harvey was this year delivered by Dr. A. E. Luff of St. Mary's Hospital. He took for his subject "The Various Forms of Fibrositis and Their Treatment," an excellent choice, as we have of late been talking a good deal about the maladies dealt with; viz., the more or less chronic affections generally labelled "rheumatic" but which the lecturer laid down at the outset are undoubtedly not the sequel of acute rheumatism and are in no sense connected with it. The pathology of these cases is an inflammatory hyperplasia of the white

fibrous tissue (hence the name) associated with exudation and proliferation of the connective tissue elements leading to swelling and thickening of the affected fibrous tissues. This may undergo absorption or pass on to the formation of nodules and patches of thickening. The articular structures (membrane, cartilage, bone) are not primarily affected, but the fibrous tissues of joints, muscles, and bones, especially the aponeuroses and insertions of the muscles, the sheaths, the bursæ, fascial, and fibrous ligaments and capsules of joints, and the periosteum. The swollen part is painful, tender, and may sometimes be felt or evidenced by elevation of the skin. Pressure or movement, especially sudden, are extremely painful, from compressing or stretching of the inflamed tissues or sensory nerve filaments. The causes of local fibrositis the lecturer considered cold, damp, and wet, extreme degrees of heat or cold, injuries, absorption of toxins from the alimentary tract, tonsillitis, pharyngitis, influenza, or febricula. This is a fairly comprehensive list and suggestive of variety of symptoms which inflammation of the white fibrous tissue may produce in any part of the body and leading the lecturer to the description of different forms of fibrositis. First of them he considered muscular rheumatism which has attained different names, according to locality, as lumbago, stiff neck, growing pains, and other names prefixed to "rheumatism" (intercostal, etc.). Pains in the shoulders or arms may be a moderate inconvenience or render the sufferer to a great degree helpless. Dr. Luff calls them fibrositis, as he does a common form of headache affecting the occipital, temporal, and cranial or other aponeuroses. Depuytren's contraction, often ascribed to gout, but in which he has never met with gouty signs, he considers is fibrositis, and so is the analogous affection of the plantar fascia. When this last affects the fascia at the os calcis we have a troublesome form of painful heel which may result in a bony spur. Bursæ are liable to the same affection with pain and other symptoms according to their locality. Dercum's disease or adiposis dolorosa is an example of the same lesion in the subcutaneous tissue as recently shown by Ralph Stockman. In the joints chronic fibrositis is common in the knuckles of those engaged in hand labor or subject to damp surroundings. Excrescences or pads on the finger joints usually are found on both hands in size from a split pea to half a hazel nut, sometimes painless, oftener not so. They seem to have no connection with gout or rheumatism, contrary to the popular belief, but are more allied to Dupuytren's contraction and often accompany it. Chronic villous synovitis is not claimed as a fibrositis. It is often mistaken for rheumatoid arthritis but may be distinguished by the crepitus on movement which is merely a creaking—not a bony grating, for there is no erosion of cartilage and no eburnation of bone.

For treatment Dr. Luff advised rest according to the severity and the locality of the attack, confinement to bed, strapping or bandages to keep special joints immovable. Of drugs a saline aperient to begin and repeated as necessary. Salicylates he pronounced of little value. Aspirin to relieve pain if severe, for no other use. Iodide of potassium he held to be the most valuable drug which seemed to remove the hyperplasia and serous exudation. Full doses are needed, 10 or 12 grains with tonics (nux or glycerophosphate). If iodism occur one of the organic compounds may be tried. Of fibrolysin his later experience has not supported the rather guarded favorable opinion he formerly expressed. Locally, hot fomentations are good and a mixture of chloral, menthol, and camphor may be painted on the painful part. Iodine paint may be used and a liniment of aconite, belladonna, and chloroform may be applied on lint. Heat and electrical treatment are powerful. Heat should at once be followed by ionization with iodine ions, the most effective in his experience on fibrous thickening and deposits. Lithium iodate and sodium salicylate may be introduced in the same way. Massage and exercises when they cause no pain may be applied to the tissues around the joints. Diet, spa treatment, and other general points were mentioned. In a few cases of nodules surgical measures have been resorted to.

I mentioned above that we had been talking of fibrositis so I may as well add that it was before the Royal Society of Medicine at the beginning of the year. Stockman has perhaps done the most to settle the pathology and show that the nutrient vessels are affected. At least there is endarteritis and periarteritis of them which may perhaps be set up as some toxin conveyed in the blood. Searching for this Goadby massaged the muscles involved and followed up by careful examination of the urine in which he reports that he found streptococci and other organisms, one of them peculiar. There is evidently room for further research.

I may add that thyroid extract has been used successfully in a number of the "rheumatic" complaints touched upon in his Harveian lecture although Dr. Luff did not name it. At the French Academy in January Mr. Gilbert reported five successes out of seven cases of Dupuytren's contraction.

The antivivisectionists' action against the *Pall Mall Gazette* for libel (technically Lind-af-Hageby) is not concluded. Yesterday was the thirteenth day of trial and it was then adjourned until next week. Just think of it! A judge and jury occupied for more than a fortnight over such a "cause." Miss Lind chose to conduct her plaint herself. Thus she had the privilege of the opening speech of which she fully availed herself by relating her own life and the horrors she had seen, but which did not at first extinguish her desire to pursue further. She also, as her own counsel, had the examination of her witnesses and the cross-examination of defendant's. She managed so well that the judge had to tell her she could not make a speech about every paragraph and she must proceed in a less lengthy way when a juryman interjected he quite agreed and counsel said they had had a four-days' opening. Later the judge had to complain that anonymous letters had been sent to him—which he did not read, however. So plaintiff put forward a number of witnesses who testified against vivisection and some added vaccination and thus altogether she obtained reports of her notions in the newspapers for ten days and so much more to come. Does it not seem that the action is merely brought as a grand advertisement of her society, her journal, and her pamphlets? Costly, perhaps, but in the view of the fanatics well worth the money.

Surgeon-General William May, C. B., succeeds Surgeon-General Sir J. Porter, K. C. B., as Director-General of the Medical Department of the Navy.

On Sunday last the Rector of St. Paul's, Deptford, unveiled a tablet "In memory of John Harrison,

founder and first surgeon of the London Hospital, who died in 1753 and was buried in this churchyard. His body lies here. His work continues at the hospital." It is now the largest hospital in London.

Sir H. R. Swanzy, the eminent Dublin ophthalmologist, died on the 12th inst. He was president of the Royal College of Surgeons of Ireland in 1906-8 and was knighted in 1907. Educated at Dublin University, he took the M. B. in 1865, the year he came of age and the next year the license of the college. After further studies in Vienna and Berlin and as a surgeon in the Prussian army he proceeded to the Fellowship of his college and M. A. of the University of which at a latter period he was made Honorary M. D. as he was of Sheffield University, D. Sc. His great work was at the Royal Victoria Hospital, though the Adelaide and others were indebted to him. His "Handbook of Diseases of the Eye" will be well known to you as will, no doubt, many of his important contributions to the societies and journals, for his reputation was world-wide. He was to have been president of the Section of Opthalmology of the International Medical Congress here next August, but he has passed away and the Dublin school of which he was so great an ornament claims the sympathy of the profession everywhere.

Dr. C. E. Shaw, of the Belfast Ophthalmic Hospital and lecturer on his specialty at the Queen's University, died on the 10th inst., at the early age of 49. He had been in delicate health for a long time, but he continued the unequal struggle with courage to the last, contributing largely to societies and literature. His book on "Diseases of the Eye" published in 1895 has maintained a good position.

Lieutenant-Colonel F. G. Maidment, late of the Indian Medical Service, which he entered in 1886, has died at the age of 54. He took part in the Burmese Expedition of 1887-9 as well as in that of China in 1900.

Major J. J. C. Watson, M. D., late of the Royal Army Medical Corps, has died at the age of 51. He joined the corps in 1885, attained the rank of major in 1898. In 1900 he served with the North China Field Force and took part in the relief of Tientsin and Peking, was mentioned in despatches and received the medal with clasp, as well as the Companionship of the Order of the Indian Empire. He retired in 1910.

## Progress of Medical Science.

### The Boston Medical and Surgical Journal.

*April* 24, 1913.

1. Trichinosis. T. F. Leen.
2. The Diagnostic Significance of the Leucocyte Count in Osteomyelitis and Tuberculosis of the Bones in Childhood. E. W. Fiske.
3. Some Features of the Milk Situation. J. O. Jordan.
4. The Production of Certified Milk. J. A. Foord.
5. The Medical Milk Commission of Boston. R. I. De Normandie.
6. Discussion of Papers of Professors Jordan and Foord and of Dr. De Normandie. J. L. Morse.

1. **Trichinosis.** T. F. Leen notes that Zenker in 1860 was the first to report a case of this condition. The symptom-complex may be divided into three parts corresponding to the life-cycle and pathology of the worm. The early symptoms are inconstant. General constitutional and gastroenteric disturbances are the rule. Discomfort, anxiety, dull heavy headaches, dizziness, nausea and vomiting, choking sensations, chillness, and diarrhea, with more or less violent colicky abdominal pains, are present. The vomiting and diarrhea may become intense, and the latter may be followed later by obstinate constipation. The appetite usually disappears. During this period of lassitude an increasing fever appears. Occasionally very early an intense lameness of the muscles appears, in the flexors, in the neck, and in the lumbar region. When this and the diarrhea subside, the patients think they are convalescing and some try to work, but are compelled to go to bed. This muscle-lameness appears before the beginning of embryo-wandering, and cannot be explained by muscle-invasion. The most important pathognomonic sympton, quite constant and often generally the first, is the edematous swelling of the eyelids and of the face. Seldom is it lacking and first appears on the seventh day. Somewhat later, from the ninth day on, there is edema of the extremities, more often the legs than the arms, and as well at times the scrotum. The lid edema after some days disappears and may return later, but that of the legs is obstinate and persists a long time into convalescence. Delirium has been noted in a few fatal cases, accompanied with violent attacks of dyspnea. A meningitic picture is present in some cases. Epigastric pain occurs in the second week and is ascribed to the migration of the young brood to the diaphragm. Complete skin anesthesia, lasting for a few days, has been reported, and itching and paresthesia have been noted occasionally. A characteristic symptom is profuse sweating. The blood changes are important. The first stage shows a polycythemia and a polychromhemia, and later a mild anemia develops. There is a leucocytosis which is due to the great increase in the eosinophiles. The severer the disease the greater the eosinophilia. The treatment of trichinosis is as follows: If only a short time has elapsed after the patient has eaten the infected food, copious stomach washings and thorough catharsis should be tried. Strong antithelmintics, such as santonin, extract of male fern, glycerine, and benzol may be given in frequent large doses. Cathartics are given, as calomel, compound infusion of senna, castor oil, etc., to keep the intestine thoroughly clean and wash away any worms which have temporarily lost their grip. Salvarsan and neosalversan are well worthy of trial to kill the embryos in the blood. Colloidal silver in doses of 4 to 6 c.c. of a 2 per cent. solution has been tried intravenously in order to destroy the embryos.

2. **The Leucocyte Count in Osteomyelitis and Tuberculous Osteitis in Children.**—E. W. Fiske has found that the routine examination of children with tuberculosis of the bones and osteomyelitis, two-thirds of the cases in both diseases being in an acute stage, shows an average white count of 11,600 for the former and 16,200 for the latter, a significant difference of about 5,000 leucocytes. That this difference is constant, and is a reliable factor in diagnosis, is shown by the fact that in osteomyelitis but 24 per cent. of the counts were below 12,000, as compared with 66 per cent. in tuberculosis, while 39 per cent. of the former were over 18,000 and but 13 per cent. of the latter over 15,000. This difference is still more emphasized in the acute cases, which make up the majority seen in hospital practice, the average of osteomyelitis being 22,200 and for tuberculosis 11,400, a difference of nearly 11,000.

### New York Medical Journal.

*April* 26, 1913.

1. Inoperable Primary Carcinoma of the Breast. G. E. Pfahler.
2. Intravesical Diagnosis and Treatment. L. Buerger.
3. Operation, When Required, in All Common Rectal Diseases, without General Anesthesia or Pain. W. F. Burrows.
4. A Single Case of Vitiligo. N. T. Beers.
5. Orbital Cellulitis. A. Wiener.
6. Thyroid Medication in Children. M. B. Gordon.
7. Newer Teachings of Diseases of the Gastrointestinal Canal. M. I. Knapp.
8. Electricity in Rectal Diseases. F. H. Williams.
9. Treatment of Tuberculous Bone Abscesses and Sinuses with Tuberculin. W. S. Niblett.
10. Ointment in Granulating Wounds. G. B. Massey.
11. Syphilis. H. M. Greene.
12. Morphine in General Practice. C. J. Douglas.

1. **Inoperable Primary Carcinoma of the Breast.**—G. E. Pfahler concludes that in inoperable cases of

carcinoma of the breast, *x*-ray treatment offers a reasonable hope of relieving the patient of the symptoms of the disease, prolonging life, and possibly causing complete disappearance of the disease. Patients have been relieved of the symptoms of the disease for from one to eight years. No other method of treatment has ever accomplished as much in this class of patients. A careful mastery of technique is essential to success.

2. **Intravesical Diagnosis and Treatment.**—L. Buerger states that it was with a view to making certain operative procedures in the bladder feasible through the cystoscope that he began working some five years ago. It soon became apparent that the catheterizing cystoscope, even though it was provided with a single catheter outlet, would have to be modified so as to permit of the introduction of instruments of adequate size. Two types of operating cystoscope were then developed. One of these was provided with two sheaths (a convex and a concave) and its capacity was adequate for a No. 12 French catheter. The second type was fitted with an angulated eye piece, thus permitting the introduction of straight instruments. The author has devised a series of instruments for the purpose of the ablation of tumors, for the excision of callous refractory ulcers, for the dilatation of strictures of the ureter, for expediting the passage of ureteral calculi, for the removal of foreign bodies and calculi, for the cure of papilloma by a snaring process, and for the diagnosis of renal tuberculosis by microscopical examination of excised pieces of the ureteral orifice.

3. **Rectal Operations Under Local Anesthesia.**—W. F. Burrows notes there are three sequences of anorectal operations done under general anesthesia which are absent when such procedures are performed under local anesthesia. Whereas with the former, shock and reflex impulses are so marked that voluntary micturition is frequently impossible for a day or more, requiring catheterization of the patient with its concomitant dangers of cystitis and kidney infection, with the latter no such difficulty is encountered, and, in the author's experience, without exception, voluntary emptying of the bladder is possible. Second, the loss of weight and strength which accompany the use of ether or chloroform, due both to the toxic effect of the anesthetic and the enforced confinement to bed, is entirely absent following operations performed by the author's method, which necessitates no toxemia nor confinement. Lastly, the indications for making the bowels constipated for a period of two to four days or more, thought so necessary in major operations performed for minor rectal conditions and leading to abdominal discomfort, distention, and perhaps autoinfection, are rarely present. The ideal solution for local anesthesia is easily sterilized, effective, nonpoisonous, and one which causes a minimum amount of postoperative reaction and pain. Cocaine, novocaine, tropacocaine, betaeucaine, stovaine, alypin, quinine and urea hydrochloride, saline, or distilled water may be used. Novocaine is satisfactory, and, in a 0.25 or 0.5 per cent. solution, as generally used, is a safe anesthetic. Quinine and urea hydrochloride, satisfactory in selected cases, causes undue swelling, at times sloughing and delayed repair at others. Local anesthesia leads to less delay among patients in obtaining the relief, which, on account of the fear of pain or of the supposition that the use of a general anesthetic is required, they have neglected to secure until complications have frequently ensued and the health has suffered. When one comprehends that there are but three or four rectal and anal cases in a hundred, apart from cancer, which do not permit of ready relief and cure through operation, if required, performed under local anesthesia, there will no longer exist uncertainty in regard to the proper procedures to advise. Only too often in the past has dissatisfaction arisen over confinement exceeding the time thought necessary.

5. **Orbital Cellulitis.**—A. Wiener states that it is a well known fact that the nose and its accessory cavities are etiologically responsible for many of the orbital and ocular complications with which we meet. The antrum of Highmore, the anterior ethmoidal cells, and the frontal sinus are in close proximity to the floor, inner wall, and roof of the orbit. On the other hand, the posterior ethmoidal cells and the sphenoidal sinus are in immediate contiguity to the posterior half of the inner wall, the posterior part of the floor and roof of the orbit, and optic foramen. When disease exists in these sinuses, infection may be carried into the orbit, either through the vascular return which empties into the superior and inferior ophthalmic veins, or by caries and destruction of the intervening bony wall. Dehiscences, gaps, and defects in the osseous floor of the frontal sinus or lamina papyracea of the ethmoid may also permit infectious material to find its way into the orbit. A fatal case of this nature which recently came under his care is reported by the author.

8. **Electricity in Rectal Diseases.**—F. H. Williams concludes that electrolysis is a safe and painless method of treating all cases of varicose internal hemorrhoids. Patients are not confined to the room, or detained from their usual duties while under treatment, except in extreme cases. Weak and aged patients who are unable to take a general anesthetic stand electrolytic treatments admirably. Electrolytic treatments are not as easily given as electrocautery treatments, the former requiring more time and more exactness of technique. There is no hemorrhage during or after treatment. Ulceration, stricture, fistulæ, or abscesses have never been observed as a sequel to this method. Records covering a period of ten years after treatment indicate that cures are permanent.

9. **Treatment of Tuberculous Bone Abscesses and Sinuses with Tuberculin.**—W. S. Niblett has been systematically using old tuberculin locally with good results. This method of treatment is very stimulating to the sluggish granulations and converts the creamy pus into serosanguineous pus. After two or three injections the sinuses appear healthier and the discharge is markedly decreased. The technique is very simple and consists in the injection of about 120 minims of 1 to 500 old tuberculin solution into the depths of the sinus by means of a syringe or a small, soft rubber catheter, which is withdrawn as the injection is made, in the endeavor to bring the tuberculin into immediate contact with the walls of the sinus. After three or four injections the strength of the tuberculin is increased from 1 to 500 to 1 to 250, or even 1 to 50. This is governed by the reaction, both local and systemic. The injections are given biweekly. There is some systemic as well as local reaction after the first injection. The patient's temperature may reach 101° or 101.5° F., with some lassitude, but this is less marked after the first two or three injections, and usually disappears entirely after subsequent treatments. Great care must be taken to use a weak tuberculin solution, as it is desirable to avoid a rise of temperature. The sooner one gets the sinus closed or thoroughly plugged, aside from the treatment of the granulations with the tuberculin or some other substance to stimulate the walls of the abscess or sinus, the better it is for the patient.

10. **Treatment of Granulating Wounds by Means of Ointments.**—G. B. Massey after many experiments with various ointments has selected two as the most useful for the small and large wounds remaining after the destruction of malignant growths, and their occasional use in other wounds has shown their general value also. One of these, and the most important, is zinc oxide ointment diluted with four times its weight of semifluid petrolatum. This is used on the wounds so freely that it alone comes into contact with the granulations. A gently antiseptic, gently stimulating action will be shown in a few

hours. No water or other irritating substances are allowed to come in contact with the wound surface, and only the surrounding skin is cleaned with soap and water or alcohol when the dressing is changed. If an abundance of the ointment is used the wound will be self cleansing. The other ointment, which is sometimes used for a time when the diluted zinc oxide ointment appears to have overreddened the granulations by overstimulation, is the boric acid ointment of the pharmacopeia; but this is seldom required.

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## Journal of the American Medical Association.

*April 26, 1913.*

1. The Danger and Prevention of Severe Cardiac Strain During Anesthesia. W. D. Gatch, D. Gann, and F. C. Mann.
2. A Case of Congenital Heart Disease. G. E. Ebright.
3. Report of a Case of Brain Tumor. E. E. Morrison.
4. Large Urethal Caruncle in a Girl of 9 Years. A Preliminary Note, with a Summary of the Subject. C. G. Buford.
5. Early Diagnosis of Cancer of the Esophagus. A New Technique of X-Ray Examination. A. Bassler.
6. Simplified Transfusion. S. Pope.
7. Two New Circuiar Bone-Saws. F. C. Zapffe.
8. Rectrocecal Appendicitis. J. N. Jackson.
9. Prophylactic Vaccination Against Epidemic Meningitis. J. H. Black.
10. Medical Ethics. By a Physician's Wife.
11. Causes of the Migration of the Omentum. A. E. Hertzler.
12. Surgical Method of Clearing Up Chronic Typhoid Carriers. Report of Two Cases of Removal of the Gall-Bladder and the Entire Cystic Duct. T. J. Leary.
13. "The Branched Form of the Tubercle Bacillus" as a Specific Factor in the Treatment of Human Tuberculosis. A Preliminary Note. S. G. Dixon.
14. A Needle-Holder for Submucous Resection of the Septum. H. B. Hitz.
15. Recovery in Brain Syphilis After the Use of Salvarsan. N. B. Eddy.
16. Complete Situs Transversus. W. J. Stone.
17. Fatal Peritonitis Due to Infection with Bacillus Coli. A. L. Grover.
18. Burn of Eyeball Due to Caustic Contents of Golf Ball. L. W. Crigler.

1. **Prevention of Heart Strain During Anesthesia.**—W. D. Gatch, D. Gann, and F. C. Mann conclude that the Trendelenburg position is harmless for patients with normal hearts, provided their respiration is free and unobstructed. In case of partial or complete failure or obstruction of the respiration, the patient should at once be placed in the horizontal or semirecumbent posture. The Trendelenburg position should be used only with the most extreme caution in cases of cardiac disease. To prevent a too sudden inflow of blood to the heart the patient should be placed gradually in the Trendelenburg position, and to prevent a sudden failure of the circulation the patient should be gradually lowered. The effect of struggling and of pressure on the abdominal viscera is to increase greatly the strain on the heart. These agencies also are harmless to injure patients with normal hearts and arteries, provided the breathing is adequate to prevent cyanosis. During asphyxia all of the three agencies considered tend to produce a rapid dilatation of the right side of the heart. A heart once overdilated while in a state of asphyxia is temporarily, and possibly permanently, injured. This is suggested as a possible explanation of certain cases of sudden postoperative death. Robust patients should be given morphine, and alcoholic patients morphine and alcohol before operation, and should be anesthetized without being permitted to become cyanotic. Patients with cardiac disease, pneumonia, or empyema should be given morphine before operation and should be anesthetized cautiously and slowly in the sitting or semirecumbent posture. The production of a hypercapnia protects to a marked degree from respiratory failure during anesthesia, and hence from the harmful effects of the agencies which promote a free supply of blood to the heart. Under ether certainly, and probably under nitrous oxide, cardiac failure is always secondary to asphyxia. Morphine and moderate ether narcosis do not impair vasomotor tone in man. Hence in the absence of hemorrhage the semiupright posture is not harmful to man under this form of anesthesia.

4. **Urethral Caruncle.**—C. G. Buford points out that the results of annoyances from caruncles deserve much consideration. Loss of sleep from frequent urination, urethral tenesmus and multiple vague pains may destroy the health of an otherwise healthy woman "and in her desperation she submits to anything offering relief." The condition is usually mistaken for urethritis or cystitis. The treatment is not that of irrigation of the bladder, the dilatation of the urethra, or the use of caustics. Temporary remissions come not from these treatments but in spite of them. Complete excision well outside and under the tumor should be performed and the wound closed so as to leave the least possible cicatrix and a wide external meatus, thus providing against stricture. When the distal portion of the urethra is excised in a circular way it should not be allowed to retract; the skin of the vestibule should be drawn in and united to the urethra by horsehair sutures. When caruncles are not completely removed they recur. Instances are recorded of primary carcinoma occurring in the urethra or periurehtral glands from which caruncles had been excised.

6. **Simplified Transfusion.**—S. Pope after mentioning the technical difficulties of transfusion with the usual methods, those of the Carrel suture and the Crile and Elsberg cannulas and even the Brewer tube, states that to obviate the difficulties, there have been used for some time past in the research laboratory of the medical department of the University of California, a rubber tube with small glass tips and with its interior lined with a mixture of petrolatum and paraffin as a connecting medium. A piece or rubber catheter will do for the cannula and the glass tips are easily drawn from glass tubing over the Bunsen flame and may be of various calibers. They should be slightly flared at the point and smooth at each end. Both tube and tip should be boiled in equal parts of white petrolatum and paraffin. Great caution should be observed that this coating is evenly distributed and that no bare spaces occur in the cannula. The usual technique of transfusion may then be followed. During the transference of blood the tube can be both seen and felt to pulsate vigorously. Reciprocal transfusion in dogs has been kept up for over half an hour without evidence of clotting and for fifteen minutes in the human being with the veins still spurting on disconnection. With this method, transfusion is hardly more difficult than an intravenous injection. Should thrombosis supervene, as might happen with any method with imperfect technique, it would be unwise to dislodge the clot without disconnecting the cannula.

8. **Retrocecal Appendicitis.**—By J. N. Jackson. (See MEDICAL RECORD, January 25, 1913, page 180.)

9. **Vaccination Against Meningitis.**—J. H. Black finds that prophylactic vaccination against meningitis produces a high degree of immunity in most cases, this immunity being demonstrable at the end of one year. Some individuals may show an actual increase in immune bodies at the end of one year over those demonstrable soon after vaccination. Fixation occurred with the serum of a positive control who had recovered from meningitis but this fixation did not reach as high dilutions as did that of some of those vaccinated. This had previously been found also in other individuals who had recovered from the disease. Experimental evidence warrants one in concluding that prophylactic vaccination is a measure of the greatest value in the control of epidemic meningitis.

10. **Medical Ethics.**—A "Physician's Wife" alludes to the scant attention paid to the teaching of medical ethics in medical colleges. She states that during a trip through Europe she reached Vienna one day and drove out to a cemetery where many illustrious dead are buried. In walking through one of the avenues she found the grave of Virchow on which lay a large wreath of fresh flowers; on the ribbon attached she read the words: "To the master from his affectionate students." Virchow lived, labored, and died in Berlin.

11. **Migration of the Omentum.**—A. E. Hertzler discusses the causes of the movement of the omentum toward areas of inflammation in the abdomen which migration has been supposed to be due to peristalsis, though this is not proven. A constant factor in the migration of the omentum is that it moves only toward areas which are injured and then only when the injury is attended with the formation of a fibrinous exudate and the accompanying cellular infiltration. Where these two are not found migration of the omentum does not occur. If there is necrosis there is no attachment of the omentum. The author explains these movements on the basis of the influence of the cells and the fibrin-forming elements and not of any peculiar inherent properties of the omentum. Cornpith migrates in the abdomen under the same conditions. The migration depends on the preliminary formation of fibrin, and the movements are produced by the same forces that attract sells to any field of inflammation. The carrying along with them of the omentum network is purely accidental.

12. **Surgery and Typhoid Carriers.**—T. J. Leary presents the following conclusions: The removal of the gall bladder and the cystic duct as a means of clearing up chronic typhoid carriers is a very valuable one and should be given further trial by military and civil surgeons. The treatment of all typhoid carriers should be carried out only in conjunction with the laboratory men and the different medicinal treatments, more especially the continued typhoid vaccine treatment, should be carried out thoroughly in the beginning. These methods failing, all typhoid carriers should either be kept quarantined or be operated on for removal of the gall-bladder and all of the cystic duct. Only time and a larger series of cases will determine whether or not the removal of the gall-bladder and the entire cystic duct will clear up all of these cases. The author has had the opportunity of carrying out this operation on only two chronic typhoid carriers, and both of these cases cleared up within nine days. No after-effects followed the removal of the gall-bladder and cystic duct in either case.

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## The Lancet.

*April* 19, 1913.

1. The Principles and Technique of the Operative Treatment of Malignant Disease of the Mouth and Pharynx. W. Trotter.
2. The Morbid Anatomy of Periodontal Disease. J. F. Colyer.
3. Abdominal Pain in Infants. E. Pritchard.
4. Extradural Abscess at the Apex of the Petrous Bone. A Complication of Acute Inflammation of the Mastoid Process; Operation; Recovery. H. F. Tod.
5. Pneumococcal Abscess of the Lung in Children. L. E. Barrington-Ward.
6. A Case of Periosteal Sarcoma of the Fibula with Unusually Rapid Though Typical Complications. F. J. Wadham and E. L. Horsburgh.
7. The Use of Sugar in Heart Disease. S. E. Denyer.
8. Freud's Theory of Dreams. W. Brown.

2. **Morbid Anatomy of Periodontal Disease.**—J. F. Colyer states that the conclusions to be drawn from the examination of specimens in man and animals are the following: The bone lesion is a progressive rarefying osteitis commencing at the margin of the alveolar process. The disease is purely local in origin and has its immediate cause in the formation of stagnation areas around the teeth. The varying density of the bone influences the rate of destruction.

3. **Abdominal Pain in Infants.**—E. Pritchard notes that an infant cries for other reasons than because it is in pain. Crying is a protective reflex. A baby cries in the first instance because by so doing it benefits itself—for example, by expanding the lungs, attracting attention, or obtaining oxygen. The cry, however, may soon become a habit, and may continue long after it has ceased to confer any advantage. The causes of abdominal pain in infants in the approximate order of frequency are as follows: (1) Dysperistalsis of the intestines, including enterospasm caused by irritation, obstruction or nervous incoordination. (2) Disturbances of the motor functions of the stomach, including pyloric spasm, hour-glass contraction, spasm of the cardiac sphincter from wind, food, or other causes. (3) Incoordination of the motor functions of the bladder, spasm of the sphincter vesicæ, etc. (4) Referred pain from the thoracic cavity, pneumonia, pleurisy, empyema, etc. (5) Renal colic. (6) Spinal caries and osteomelitis. (7) Peritonitis, appendicitis, etc. Dysperistalsis or incoordination of the motor functions of the intestine, and chiefly of the colon or rectum, is undoubtedly the commonest cause of pain in infants. Indeed, in infants under six months of age it is a more frequent cause of pain than all other causes put together. As regards the treatment of cases of abdominal pain due to dysperistalsis or enterospasm: excluding all those cases which have an organic basis, they may well be divided into the two classes—acute and chronic. In acute cases the chief desideratum is to relieve the spasm and keep the bowel at rest until the exciting cause has been removed. To effect these purposes there is probably no better treatment than the old-fashioned remedies, castor oil and opium. Small and repeated doses of paregoric during which one can watch the effect, are much safer than the comparatively large dose. One drop given every hour to an infant three months old is not likely to lead to much trouble. Brandy is always a useful antispasmodic, and may be given in 10 to 15 drop doses to an infant of the same age. All food should be suspended until the symptoms have subsided. In the chronic cases there is a vicious cycle of events; the nervous system is made irritable and explosive by the constant sensory impressions which reach it, and the dysperistalsis is encouraged by this very irritability of the nervous centers. It is important, therefore, to dull the excitability of the nerve cells by a nerve sedative such as bromide or opium, while the intestine should, of course, be relieved of all unduly powerful stimuli. The adjustment of the food is naturally one of the factors on which success most depends; cow's milk is a powerful stimulus, especially in the unaltered state; completely peptonized it is less stimulating. Veal broth, whey, or even condensed milk, often help one to tide over temporary difficulties. The most valuable drug in all these cases of irritability of the bowel is petroleum, and this best in the form of an emulsion. Petroleum soothes the bowel; it lubricates its surfaces, and it seems in some way to check decomposition.

4. **Extradural Abscess at the Apex of the Petrous Bone.**—H. F. Tod states that an extradural abscess is the most frequent complication of acute inflammation of the mastoid process, being due to direct extension of the infective process through the bone to the outer surface of the dura mater, and is almost invariably found in the region of the tegmen tympani or of the lateral sinus, the latter being most frequent. In this particular instance the situation of the abscess at the inner part of the anterior surface of the petrous bone is exceedingly rare. The author reports a case in detail. Failure to discover such an abscess invariably leads to death from meningitis, usually from rupture of the abscess through the dura mater into the subdural and subarachnoid spaces on the posterior intracranial fossa; and necropsies proving this can no doubt be recalled by the majority of those who have had an extensive experience in aural surgery.

5. **Pneumococcal Abscess of the Lung in Children.**—L. E. Barrington-Ward points out that three varieties of acute abscess of the lung are met with in children. There is the abscess which arises from the presence of a foreign body in the bronchus; these are the multiple abscesses often following bronchopneumonia and debilitating illnesses, which abscesses are found scattered throughout the lung, are due to a variety of organisms and are not

amenable to surgical interference; and the single abscess due to the pneumococcus with or without a preceding lobar pneumonia. Barrington-Ward concludes that pneumococcal abscess formation is a possible mode of termination of a lobar pneumonia. The origin of this type of abscess appears to be in a patch of pneumonia, which instead of resolving after consolidation becomes the seat of pus formation. In fact, the pneumococcus takes on an action which is common to it in other parts of the body, but is rare in the lung itself. Possibly the age and resistance have a bearing on this point. Guinon describes the case of a boy of 4 who succumbed to a pneumococcal abscess of the lung not recognized before necropsy, and suggests the name of "hépatisation grise suppurée" for the process.

7. **The Use of Sugar in Heart Disease.**—S. E. Denyer states that physiologists have experimentally proved the nutritive value of sugar with reference to heart muscle. It has been established clinically that sugar undoubtedly gives good results in some forms of heart disease. In other forms no benefit has been observed from its use. Cases with edema, cases with anginal pain, and cases in which cardiac disease is secondary to renal disease do not seem to be improved by it. In a case of general paralysis of the insane, in which the pulse was failing, the author tried sugar, but it had no effect.

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### Münchener medizinische Wochenschrift.

*April* 8, 1913.

**Acromegaly Following Female Castration.**—Goldstein relates the following case: At the age of 38 the uterus and adnexa were extirpated for multiple myoma. Menses at once ceased. The menstrual history had been one of continuous dysmenorrhea. Within a year after castration the woman's bones, which had always been thicker than those of her sisters and brothers, exhibited distinct enlargement, and this increase in size has continued slowly for nine years. Patient wears shoes and gloves two sizes larger than formerly. The chin, cheek bones and superciliary ridges have become more prominent. She perspires strongly and chills readily. She has rheumatoid and neuralgiform pains, marked vertigo, palpitation, polyuria, diminished sight and hearing. An *x*-ray picture of the skull shows no anomaly in the pituitary region, the hypophyseal recess being small rather than large. The forearm and leg are relatively longer and thicker than the upper arm and thigh. That the acromegaly was due directly to castration is evident; for according to authorities in one type of female castrates the bones become elongated. The patient had already present the anlage for acromegaly as seen in the abnormal thickness of some of her bones. Some unknown factor was evidently required in this case, however, for the author is unable to discover others like his own. The small size of the hypophysis appears to show that this gland was not primarily at fault. The tendency in childhood to excessive growth of bones does not speak for an acromegalic dystrophy, but rather for the closely related condition gigantism.

**Lecithin and Cholin as Antituberculous Remedies.**—According to Mehler and Ascher it has been known for some years that lecithin, as well as some of its constituents (cholin, glycerophosphoric acid) has a certain degree of bacteriolytic power. The authors, working in this direction, have found that certain cholin salts have little of this quality in vitro, but in certain combinations cholin is split off in vivo and may exert bacteriotropic and bacteriolytic properties. The proof of this is seen in the fact that certain cholin salts can determine a typical tuberculin reaction in the florid tuberculosis. It is not yet claimed that this property of the salt will make it an actual addition to our chemotherapeutic armamentarium. The action is by no means specific for tuberculosis, for cholin acts to some extent on bacteria in general. In the future we shall have a series of these substances to use as synergists. In addition to the tuberculins and lecithin constituents some of the heavy metals may be enumerated. Combinations of lecithin with copper, gold, etc., have been used for some time as chemotherapeutic remedies. The authors have caused to be placed on the market an unknown cholin salt with a proprietary name for those who wish to test the value of this class of substances.

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### Deutsche medizinische Wochenschrift.

*April* 3, 1913.

**Functions of the Cerebellum.**—Edinger states that if the following up of the spinocerebellar paths brings us to the supposition that the cerebellum was originally intended to maintain the statotonus, another supposition is permissible, as the consequence of tracing the posterior columns of the cord by way of the thalamus, cerebral cortex, and pons into the cerebellar hemispheres, to wit, that the latter are stimulated by the impressions of the muscle position sense. Something is thereby added to the cerebellar functions of the inferior vertebrates in regard to the motor apparatus; and the sensory disturbances in cerebellar affections and the ataxia which follows extirpation of the cerebellum have further light shed upon their mechanisms. Clinically we may anticipate that atony and variations of movement are to be referred principally to the vermis, sensory disturbances to affections of the hemispheres expressed as true ataxia, the latter being something besides mere muscular weakness. The clinic will also indicate the distinctions between interruption or stimulation of the paths in the cerebrum, pons and cerebellar hemispheres. Affections of the latter may be simulated by cerebral affections and in the future one should be better able to explain how this comes about. What we most need at present are new investigations as to sensation, especially as concerns space orientation. The author supports the recent conclusions of Anton and of Kleist, that the symptom akinesia—slow execution of all movements as if inhibited—should be referred to the pons, which also may have to do with adiadochokinesis and asynergy.

**Eye Studies in German East Africa.**—Krusius states that he began his study of African eye diseases in Egypt, starting at Cairo and going up the Nile to the confines of Soudan. Throughout this region he found the same conditions, so that he was moved to follow them up with a possible discovery of an original focus. As he could go no further up the Nile he traveled by caravan to the Red Sea and then down the coast, where he took ship for German East Africa, finding everywhere the same conditions, which, however, seemed to attack principally the nomad element and to a much less extent the stationary black residents. In general there was a surprising agreement between the eye affections here and those of upper and lower Egypt. The percentage of those involved was a shockingly high one, also agreeing with Egyptian incidence. Smallpox blindness was but little in evidence, for the community has been well vaccinated. More common were the effects of acute purulent ophthalmia—leucoma, phthisis bulbi, etc.—which affects by preference the very young. Gonorrhea could be excluded in this connection. The vast majority of cases found were examples of trachoma and its sequelæ. As far as can be learned this affection has been endemic for centuries. The author finds nothing to justify a belief that this trachoma originated in the far South, because the negro of this locality has been largely exempt. The nomadic tribes studied, on the other hand, have reached this locality from more northerly regions. They are presumably of Semitic or Coptic origin and it is rational to suppose that they have carried the disease southward.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS

BY THE INSURANCE EDITOR.

ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

*The Loading:* The net premiums only have been referred to, heretofore, as the question of creating an insurance fund devoted solely to the purpose of paying death claims was given first consideration. Furthermore, simplicity was gained by excluding the matter of expenses in the discussion of that part of the subject. The expenses must be taken into account, however, before the gross premiums, the premiums which the policyholders pay, can be definitely determined.

It is imperative for the sake of unquestionable security that the companies be properly managed, and this can only be accomplished by men with special training and ability in the various branches as the business of life insurance is a most complicated one. The hypothetical company which has been useful for the purposes of illustration, could be terminated after meeting the requirements of the last contracts and the expenses of running such a company would be comparatively small. For practical use, however, it would be of little value and confined to a very small part of the community. As a matter of fact, a regular company is made up of a great number of groups similar to the hypothetical company which are being formed continuously and under one management. An actual company must be virile and permanent, —not an affair which will pass away in a few years. To inspire confidence and afford absolutely certain protection to the present and future generations, it must be conducted on as perfect lines as it is possible to attain and this cannot be accomplished without certain expenditures.

The chief item of the expenses is composed of the commissions for the procurement of new business. The cost of collecting the premiums and keeping the old policies in force must be charged up. Then come the items of rents, the salaries of the officers and the large clerical staff, the medical fees for examinations and miscellaneous expenses. Taxes levied by the various states constitute an important part of a company's expenses, and these are usually a percentage of the premium income.

Aside from expenses, provision must be made for all possible contingencies. While the assumptions as to mortality and interest in the computation of the premium have been made on a most conservative basis, it must be remembered that human judgment is fallible and mistakes possible. No one can foretell the contingencies of the future or the ordeals which life insurance companies may be subjected to by reason of wars, pestilence, adverse legislation, oppressive taxation, depreciation in securities, fall in the rate of interest, inefficient management, etc. With these in view, it is essential that the contract rate must always be more than adequate. When the rate charged is higher than necessary, it is a simple matter to return the excess in the form of a dividend, whereas if the rate is too low, there is no source from which a company can draw to make good the deficiency.

The allowance for expenses, taxes and contingencies is termed the loading, and is the difference between the gross premiums which appear in the rate books and the net premiums. The methods of loading vary. Sometimes it is a certain percentage of the net premium; at other times it is a more elastic plan composed of two parts, a constant sum (as $2.00 per $1,000 of insurance) for all ages and a percentage of the net premium.

The addition of loading is determined in an arbitrary manner and the amount varies slightly in the different companies according to the opinions of the respective actuaries, the companies having the privilege of fixing the rate as they see fit. Extravagant or reckless management which would call for an excessively heavy loading is, however, effectually prevented by the sharp competition which necessitates a standardization of the rates, and by the publicity of all the details of the business of every life insurance company as required by law in practically all the States.

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**A Suggestion Towards the Prevention of Fraud in Life Assurance.**—At a meeting of the Life Assurance Medical Officers' Association, held in London, on May 1, 1912, Dr. Ogier Ward suggested that every local examiner, before launching into insurance work, should read carefully the volume of transactions of the Society he was addressing. The art of examination for insurance not being a natural gift, but acquired only after careful training and experience, the knowledge obtained from the transactions might avert many a blunder on the part of the ambitious examiner. Insurance companies should compel every doctor, qualifying for the position of examiner, to spend a day or two at the head office, in order to gain information about the methods used by the revising examiner, or medical director.

He referred to a previous paper, in which he had pointed out: (1) The need of special caution by examiners, when called upon to examine risks outside of their prescribed district, as many hidden or obscure cases might thus be passed. (2) The advisability on many grounds of avoiding the examination of one's own patients. (3) The importance of unvarying refusal to tell applicants (or agents as a rule) the result of the examination. (4) The importance of complete answers to every question. Thus, "Is he a Caucasian?" may appear unnecessary; but it is of import to a company issuing policies all over the world. (5) "Occupation?" (6) "Any connection with the liquor trade?" (7) "What is your daily consumption of alcoholic beverages? Have you ever taken them to excess?" Applicants, habitual drunkards, but "total abstainers" for the three months previous to applying, have, through these questions, been rejected. (8) "Have you ever had discharge from the ears?" This question, through its importance, has now become almost universal. (9) Urine.

Endless tricks, Ward says, have been played or attempted in this connection. Substitution is, of course, frequently attempted. Also, the use of drugs to get rid of functional albuminuria and traces of sugar. "Have you taken any drugs within the last fortnight?" would probably settle the drug question. Many insurance companies demand a second specimen of urine when the specific gravity of the first is below 1015 or above 1025, unless some comment is made in the report. Ward thinks this Association should compile a pamphlet, brief but comprehensive, for the benefit of the general practitioner, as the several books on life insurance, while excellent, are too large for ordinary work.

# Book Reviews.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By Sir William Osler, Bt., M.D., F.R.S., Fellow of the Royal College of Physicians, London; Regius Professor of Medicine, Oxford University; Honorary Professor of Medicine, Johns Hopkins University, Baltimore; formerly Professor of the Institute of Medicine, McGill University, Montreal, and Professor of Clinical Medicine in the University of Pennsylvania, Philadephia. Eighth Edition, largely rewritten and thoroughly revised, with the assistance of Thomas McCrae, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine, Jefferson Medical College, Philadelphia; formerly Associate Professor of Medicine, Johns Hopkins University. New York and London: D. Appleton & Company, 1912.

In comparing the third edition of "Osler" published in 1899 with the twelfth edition which has just appeared, one notes that the text of the latter fills practically the same number of pages as that of the former, 1150 and 1147 pages respectively, but that in the later edition there is a much more elaborate index, which fills 76 pages, instead of 30 pages, as in the earlier edition. It is also interesting to compare the tables of contents of the two editions. The infectious diseases are grouped in a different order and those of doubtful etiology are considered separately. The newer grouping indicates the important advances that have been made in this branch of medicine. These advances are notably seen in the recognition of the colon bacillus infections, in the discussion of pneumococcic infections, apart from the pneumonias, in the separate and more extensive treatment of the subject of the non-bacterial fungus infections, as the sporatrichoses, and of the protozoal infections, such as syphilis. There are new sections on Leishmaniasis, poliomyelitis, pellagra, disorders of metabolism, caisson disease, ochronosis, hemochromatosis, the disorders of the organs of internal secretion, and the diseases of the blood. In the section on typhoid fever one notes the important advance that has been made in the more liberal dietetic treatment of this disease. Although the latest edition of this popular textbook of medicine has been thoroughly revised, its original charm has not been impaired. There are still to be discerned in its pages those happy turns of expression which have become almost proverbial in the language of medicine. One serious defect of the earlier editions has been remedied in the last one, namely, in the somewhat more adequate presentation of the subject of treatment, though the conversion of the author from therapeutic nihilism to rational medicine is very gradual and by no means yet complete. The work still maintains its position among those in the front rank of the single volume textbooks on medicine.

The Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume I; Numbers V (October) and VI (December). Published bi-Monthly. Philadelphia and London: W. B. Saunders Company, 1912.

The interesting features noted in the past issues of this series are continued in the numbers herewith, and as the style, etc., has not varied further comment as to the general makeup of the book is unnecessary. Number V contains clinical reports of cases of renal calculus, cholecystitis, exophthalmic goiter, and a number of abdominal, cranial, and other surgical conditions. Although there is nothing particularly noteworthy in any of these cases the speaker has surrounded them with considerable interest by his well-known colloquial treatment of the same. As such, they are of undoubted value to many practitioners. In number VI of the volume there is interpolated a talk on carcinoma of the breast by Professor Bastianelli, whose work in this field is well known. Dr. Caan of Heidelberg likewise contributes an article on the treatment of malignant tumors with radioactive substances, in which he speaks of the good effects obtained with the same, which cannot be regarded, however, as an invariable cure. The inclusion of a case of salpingitis in Dr. Murphy's list of clinical lectures shows that he is not averse to invading the field of the gynecologist in his operating, but on the contrary that everything is fish which comes to the net of the "abdominal" surgeon. A number of excellent reports of bone cases, in which Dr. Murphy's abilities are undoubted, are also included in this number, which closes with a complete index of the entire volume. These books have met with a very favorable reception and will undoubtedly continue to be received with great interest by the many followers of this well-known Chicago surgeon.

Psychoanalysis: Its Theories and Practical Application. By A. A. Brill, Ph.B., M.D., Chief of the Neurological Department of the Bronx Hospital and Dispensary; Clinical Assistant in Psychiatry and Neurology at Columbia University Medical School; formerly Assistant Physician to the Central Islip State Hospital, and to the Clinic of Psychiatry, Zurich. Price $3.00 net. Philadelphia and London: W. B. Saunders Company, 1913.

The Freud theories have passed through a rather long evolution before reaching their present state. Freud himself has not yet given us a textbook presenting his conception in a systematic manner. Most of his writings have appeared fragmentarily in separate papers, subsequently united into volume form, in which even the German reader finds it difficult to follow him clearly; and this may be responsible for much of the criticism directed against Freud. Again, Freudian works thus far accessible to the English reader deal largely with his theories and less with their practical application. While in the present book a noteworthy feature is the many interesting and convincing analyses of cases drawn from the writer's large personal experience.

The first chapter deals with the theories of hysteria, obsessions, doubts and phobias and their relation to sex, dreams and psychopathological actions. The second chapter gives a full account of the rules of dream interpretation citing many very interesting examples. The third chapter deals with anxiety neuroses anxiety hysteria, and neurasthenia. The fourth treats of the compulsion neuroses, giving analyses of cases. The fifth chapter shows the application of psychanalysis to the psychoses as done in the clinic of psychiatry at Zurich, where Freud's theories were confirmed experimentally. This chapter also contains a lucid account of Jung's association experiments. The sixth chapter treats of the psychological factors of paranoia and belongs to Freud's later writing. The seventh chapter —the psychopathology of everyday life—is illustrated by very interesting and instructive examples, proving the theory of absolute psychic determinism. The eighth, ninth, tenth and eleventh chapters deal respectively with hysterical factors and dream states, the Œdipus complex, the only or favorite child, and anal eroticism and character, all of which abound in many novel and instructive facts. The last chapter is a thorough analysis of Freud's theory of wit in its relation to unconscious mental activities, to dreams, and to psychoneuroses.

Manual of Medicine. By A. S. Woodwark, M.D., M.R.C.P.; Junior Curator of St. Bartholomew's Hospital Museum; Physician to the Royal Waterloo Hospital and the Miller General Hospital for Southeast London; Late Casualty Physician, St. Bartholomew's Hospital, and Senior Resident Medical Officer, Royal Free Hospital. Price $3.75. Edinburgh, Glasgow and London: Henry Frowde and Hodder & Stoughton, 1912.

The purpose of this little book, as stated in the preface, is to supply a "vade mecum for the student clerking in the wards or out-patient department, and a convenient reference for the general practitioner." This book is unique in its succinct presentation of the subject matter, as the result of which a vast amount of material is gathered within its four hundred pages. The style is synoptic, which makes the book admirably adapted for quick reference, and particularly for purposes of review to one who is already familiar with the larger text-books on medicine.

Health and Longevity Through Rational Diet. Practical Hints in Regard to Food and the Usefulness or Harmful Effects of the Various Articles of Diet. By Arnold Lorand, Carlsbad. Price $2.50 net. Philadelphia: F. A. Davis Company, 1912.

In view of his large practical experience in the dietetic treatment of many disorders at Carlsbad and of his extensive traveling and observation, the author is peculiarly fitted to handle his subject. He has done this in a broad and comprehensive way, discussing the influence of food upon man, pointing out the effects of the various components of food upon the different organs of the body, the fundamental laws of rational feeding, the good and evil effects of various food substances, and the advantages and disadvantages of an exclusive vegetable or an excessive meat diet. In addition he has discussed subjects which have hitherto seldom been touched upon in scientific works, as, the manner in which various functions such as, intelligence, the sexual function, etc., can be activated through the diet. As Victor C. Vaughn, who has written the introduction to the American Edition on this work, points out, the book is remarkably free from the fads that render so many writings of this class harmful to the laity. It can be heartily recommended to all those who are responsible for the choice and preparation of food and may be read with profit by the physician, unless he has given more time than is often the case to the study of dietetics.

# Society Reports.

## REPORT OF TUESDAY AFTERNOON CLINICAL CONFERENCE OF THE NEUROLOGICAL INSTITUTE.

FIRST DIVISION—DR. JOSEPH COLLINS.

**Acute Degeneration of the Cauda Equina Simulating in Its Clinical Display New Growth in This Region.**—Dr. JOSEPH COLLINS after demonstrating a patient from whom a tumor of the cauda equina had been removed a year ago said that he wished to present a patient whose history and objective symptoms were absolutely parallel to those of the patient in whom a tumor had been successfully removed but in whom upon opening the lumbosacral spinal canal no indication of new growth was found. On the other hand a lesion of the tail was found to which as yet no descriptive name can be given. We refer to it here as an acute degeneration rather than inflammation or edematous state as it has no ocular appearance of either of these. The case could be taken as substantiation of the statement that tumor of the cauda equina, despite the fact that it causes a definite symptom complex, cannot be diagnosticated with confidence. There occurs an inflammatory or edematous state of the cauda equina, in some instances following

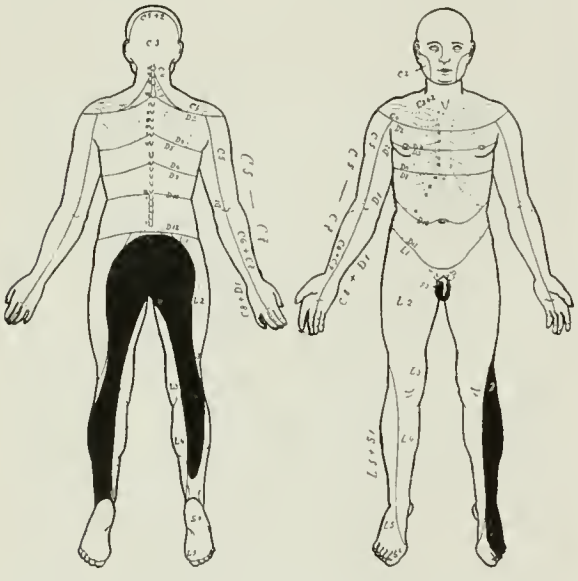

Fig. 1.—Areas of anesthesia to pin scratch.

trauma, in others occurring in the wake of infection, constituting caudal neuritis whose clinical features in the earlier career of the disease at least cannot be distinguished from caudal tumor. By its more benign course in some instances and by the eventuation in partial or complete recovery it finally differentiates itself.

The patient, a married clergyman, 46 years old, was able to discharge his pastoral duties up until November 3, 1912. His illness, however, dated back to January, 1910, possibly even longer than that. The important facts in his medical history seem to be:

(1) Lumbago off and on for the past eight years. (2) Six years ago, while ascending the Alps, slipped and fell several yards. Able to walk home, suffered acute pain at the tip of his spine. This passed away in a fortnight. (3) November, 1909, was lifting a heavy piece of furniture and strained himself. This was followed by considerable pain in his lower spinal region, which lasted with variable intensity for several weeks. (4) January, 1910, had a fall while skating, striking his back on the ice. Acute pain in his spine and down the right leg. Experienced a good deal of pain and difficulty in walking home. Pain in his spine off and on till April, 1910. (5) April, 1910, consulted a surgeon, who diagnosticated his case as a displacement of one of the lower vertebra, most likely caused by his frequently bending over his desk. Put on a brace to keep his spine in an erect position. He contracted pneumonia the following day, but made an uninterrupted recovery. (6) July, 1910, had not improved, so he discarded the brace and felt the better for having done so. (7) January or February, 1911, sudden attack of lumbago in small of back, a sharp pain went down his right leg. Tingling of the toes of both feet; left more than right. Was unable to raise himself on his toes because they felt too weak to support his weight. This passed away in a month's time. (8) November, 1911, attack of shingles on the right side. (9) 1912, spent part of the Spring in England, and was able to walk, cycle, and lead a normal life, free from pain or inconvenience. (10) August, 1912, sudden attack of "lumbago," followed by pain down the right leg to heel. Had to sit down frequently, which gave him relief for the time being. (11) October, 1912, consulted a surgeon, who took *x*-ray pictures with negative results. He made a diagnosis of periostitis, and applied the cautery and strapping to his spine. He did not improve under this treatment. (12) November 4, 1912, while bending over the washbasin, felt a sudden shaking and jerking sensation in

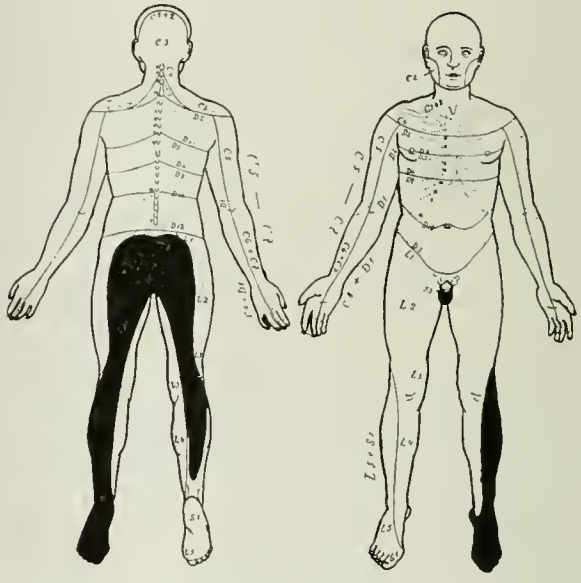

Fig. 2.—Areas of touch (brush) anesthesia. The areas of temperature anesthesia are of the same general contour, but 1 to 2 cm. wider all around

his lower spinal region, followed by intense desire to go to stool. He seemed to collapse, and found he was paralyzed from his waist down. Was dragged into bed by his wife. Since this time he has been catheterized regularly, though he feels normal sensation in his bladder and rectum. Has never had any incontinence. Though the sensations are blunted, he still feels the contact of the bed clothes and other objects to his feet, legs, etc.

His complaint on entrance to the Neurological Institute, February 1, 1913, was of: (*a*) Inability to stand or walk, (*b*) inability to urinate, (*c*) pain referred to the glans penis, and described as if the glans were thrust into boiling water, (*d*) numbness of the toes, (*e*) insomnia and great mental depression.

Physical examination reveals that the skin over the peroneal surface of the legs is thin and glossy, and that there is atrophy of both thighs and calves, more pronounced on the left side. He can flex the thighs slowly upon the abdomen to a limited extent, and he can flex the knees to a slight extent. He has very slight motion at the ankle joints and the feet are in position of double foot drop. He has very little capacity to flex or extend the toes. The tendon jerks of the lower extremities are unelicitable, nor could any plantar response be obtained.

The cremasteric, abdominal, and epigastric reflexes are normal. The sensory disturbances were profound and are depicted by the accompanying charts (Figs. 1 and 2). There is pronounced arcus senilis which has developed since November, 1912. The pulse is rapid, of low tension, and dichrotic. The systolic blood pressure 115, the diastolic 70. The spinal fluid, which was straw color, contained an excess of globulin; but no other abnormality.

In view of the negative *x*-ray findings, the history of the development of the paralysis and of the bladder trouble, and particularly the attacks of pain that he had had taken in conjunction with the objective sensory disturbances, a diagnosis of tumor pressing upon the cauda equina was made and operation was recommended.

Dr. Charles E. Elsberg, the surgeon to the institute, did a laminectomy on February 4, 1913. No tumor was found. The tail was lusterless, of faint bluish tinge, instead of white and glistening. It had the appearance as if it had been treated with some caustic chemical. The patient made a prompt recovery from the operation, since when his condition has been unchanged, save that the bladder symptoms are not so distressing. What the outcome of the case will be time only will determine. That it may eventuate in recovery, however, is probable. The nature of the lesion in such cases must be determined by further study. It is not at all unlikely that such cases are not rare.

The pronounced arcus senilis and the low tension dicrotic pulse, such as we encounter in fever like typhoid, suggests that we are dealing with some process dependent upon a circulatory toxin. But the condition is not due to bacterial invasion with toxic products, as there is an absence of fever and the leucocytes are not called out, nor are there any polymorphonuclear cells of infectious type. It must therefore be a metabolic change, either a failure in secretion or excretion. Then, too, the appearance of the cauda equina would suggest some such process. This is further borne out by the excess of globulin and the straw color of the spinal fluid, which in the absence of a secreting tumor is nothing more than transudation of the blood serum, possibly due to irritation or diseased vessel walls.

SECOND DIVISION—DR. PETERSON.

**Myasthenia Gravis.**—Dr. Foster Kennedy presented C. K., female, age 17, who was referred to the hospital complaining of double vision and dropped eyelids. Her previous health had always been good. Seven healthy children, she being the sixth child. For five months before the onset of the present condition patient had been employed in painting with water colors.

In the latter part of October, 1912, patient had severe frontal headache, no vomiting, no shivering, no feeling of fever. A week later, on a Wednesday night, the left eyelid felt heavy, and she found that she was unable to keep it but half open. The right eyelid was then normal. No diplopia. She felt well.

After a week's time the left eyelid slightly improved, but the right eyelid became heavy, and in a few days was in a condition similar to that of the left side. She had acute double vision, with involvement of the right eye. The relationship of the images has been very changeable since then. Condition of her eyelids has fluctuated much; sometimes there was little or no ptosis present; at others ptosis, particularly of the left eyelid, is complete.

No history of any other forms of muscular weakness. Blood count and blood Wassermann both failed to show anything abnormal.

On examination the optic discs are normal; there is complete immobility of the eyeballs for conjugate movements upward. The left eye has limited downward movement. This is true, but in a lesser degree, of the right eye, also. Slight weakness of outward movement in the left eye. Diplopia not found on examination. The right

Fig. 3.—Showing complete ptosis of the left eye, semi-ptosis of the right eye, elevation of eyebrows, and enforced attitude of the head.

pupil is consistently larger than the left, but both pupils show normally brisk reactions. There is a high degree of left-sided ptosis; a slight degree of ptosis in the right eyelid; well marked overaction of the frontalis muscle. There is no weakness, no wasting elsewhere in the body; there is no sensory change, and the reflexes are all normal.

Diagnosis in this case is somewhat obscure, but it was pointed out that the onset was subacute and differed therein from the paralysis of the eyeballs associated with Wernicke's name. Beyond headache, the onset was unaccompanied by any constitutional disorder. The variability of the condition since October has militated against a

Fig. 4.—Showing range of downward movement of the eyeballs.

neurogenic causation being probable, and has made almost certain that the proper diagnosis is myasthenia gravis. The one factor in this case difficult to explain on this hypothesis is the persistent inequality of the pupils.

THIRD DIVISION—DR. PEARCE BAILEY.

**A Case of Tumor of the Right Temporal Lobe.**—Dr. Louis Casamajor, in presenting this case, said: The right temporosphenoidal lobe of the brain, while relatively "silent" so far as known physiological function is concerned, nevertheless has a symptomatology of its own by means of which localization is possible. The sensations of smell and taste have bilateral cortical centers situated in the tips of the temporosphenoidal lobes, the irritation of which causes hallucinatory outbursts of smell and taste sensations usually of unpleasant nature. From the observations of Alzheimer and others on the sclerosis of the cornu ammonis in so-called idiopathic epilepsy one may expect epileptiform seizures in temporal lobe tumors, and this is usually the case. Again, the close proximity of the tip of the temporal lobe to the optic tract and the thalamus add to the picture symptoms of involvement of tongue became thick and he had difficulty in pronouncing words. In July, 1912, he again had an unconscious spell, in which he fell while walking in the street. He was picked up and taken home. He felt very weak after this, but the weakness of the left arm and leg was not increased. One month later a similar attack occurred, with similar results. Since this he has become suddenly weak while walking in the street, on three or four occasions and fell without losing consciousness. For a couple of months before admission he frequently noticed a bad taste and smell in his mouth, as of decaying meat, lasting from five minutes to a half hour.

Physical examination on admission showed normal pupils which were equal in size. Normal ocular movements. Vision 20/30 in each eye. A complete left homonymous hemianopsia for small objects (see Fig. 5), while the vision for larger objects was good in the left field, at times the hemianopsia was complete. There was a papilloedema of 3 to 4 diopters in either eye. The facial muscles were weaker on the left side, which weakness was more noticeable on laughing than on voluntary movement. There was no perceptible weakness of the left

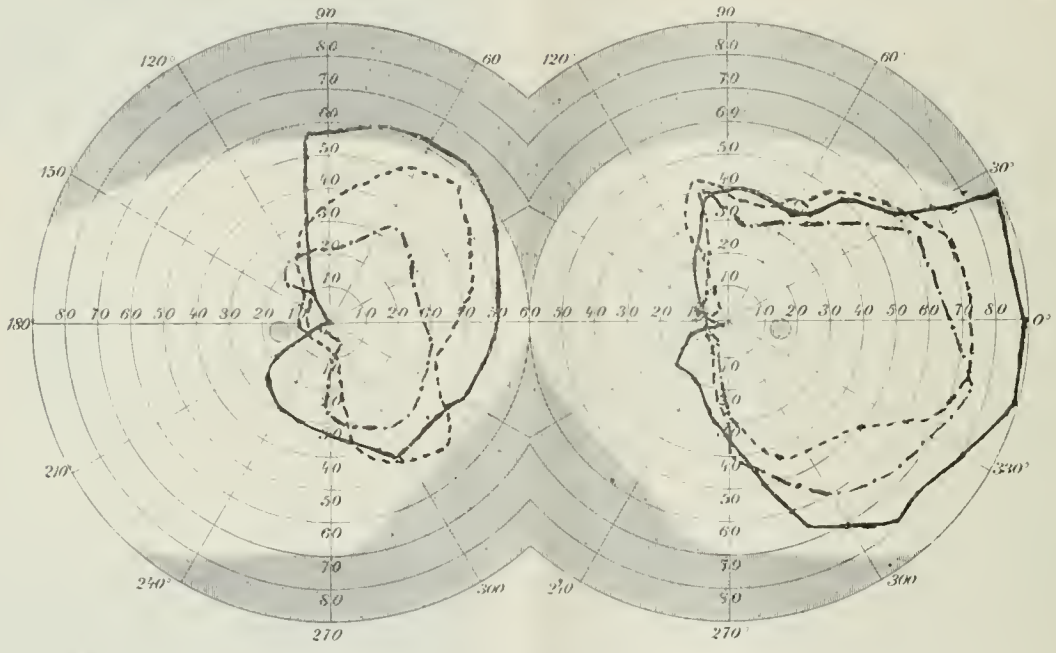

Fig. 5.—Visual fields in Dr. Casamajoris case; straight line, perception of white; dotted line, of red; broken line, of blue.

these structures, *i.e.* contralateral homonymous hemianopsia from optic tract involvement, and sensory disturbances, etc., from that of the thalamus. The case reported here brings out well these points.

A. E., 37 years of age, metal worker, born in Sweden, was admitted to the Third Division on December 17, 1912, complaining of headache, weakness of the left arm and leg, intermittent blindness of left eye (?) (hemianopsia), and occasional attacks of unconsciousness.

His family history was negative, as was that of his early life. Luetic infection was denied. His present trouble dated from April, 1912. At this time had his first attack of unconsciousness. He was straining at stool when his head turned suddenly to the right, his eyes felt peculiar, he bit his tongue and fell to the floor unconscious. After forty-five minutes consciousness returned, and he found that his left arm and leg were paralyzed. After two weeks his left hemiplegia receded to such an extent that he was able to resume his work. After this he had very frequent and severe headaches. At times his left visual fields would be blurred for a few minutes. Occasionally he became confused for a few minutes and did not know where he was. Frequently his arm and leg, but the deep reflexes on this side were increased and the superficial reflexes diminished. There was no clonus and the Babinski on the left side was doubtful. Both arms and legs showed an intention tremor which was most marked on the left side. Careful sensory examination demonstrated hypesthesia and hypalgesia on the entire left half of the body.

The Wassermann reaction was negative, the urine normal. A diagnosis of tumor of the right temporosphenoidal lobe was made upon the following points: (1) Right temporosphenoidal lobe signs: (*a*) Intermittent attacks of foul odor and taste in the mouth as of decaying meat; (*b*) general epileptiform attacks and momentary periods of confusion. (2) Neighborhood pressure signs: (*A*) Right optic tract left homonymous hemianopsia for small test objects, fluctuating in character; (*B*) right optic thalamus, (*a*) hypesthesia and hypalgesia; (*b*) weakness of the left face on smiling and laughing. (3) Tumor signs: (*a*) Optic neuritis of 3 to 4 diopters swelling, (*b*) severe constant headache.

On December 23, 1912, an exploratory craniotomy was performed by Dr. A. S. Taylor and the right temporosphenoidal lobe exposed. There was a considerable pres-

sure. By incising deep into the tip of the lobe a soft tumor mass about one inch in diameter was exposed and removed, which on microscopical examination was found to be glioma.

Recovery from the operation uneventful.

## MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(Special Report to the MEDICAL RECORD.)

(*Continued from page* 826.)

SECTION ON MEDICINE.

*Wednesday, April 30—Second Day.*

**Election of Officers.**—*Chairman,* Dr. CHARLES STOVER of Amsterdam; *Secretary,* Dr. George Reese Satterlee of New York.

**Typholalbuminuria.**—Dr. HEINRICH STERN of New York read this paper. He said that in alimentary albuminuria in general and typhloalbuminuria in particular there was one main channel, and in uncomplicated cases it was probably the only one, through which the protein was conveyed to the urine. It was the route taken by the chyle in the condition known as chyluria, and a similar, if not the same one, often followed by the colon bacillus invading the urinary tract when the infection was not of the ascending type. There existed no, or but an inconsiderable, globulin excretion in the albuminurias of intestinal origin. This factor at once precluded the blood as the protein carrier in these types of albuminuria. Typholalbuminuria was an alimentary albuminuria proceeding from the cecum. It was probably the most frequent of all the intestinal albuminurias. It was irregularly intermittent, that was, it disappeared and returned at irregular intervals, independent of the protein intake just preceding it. It might be continuous for several days and again be absent for weeks at a time. It invariably occurred in persons with habitual constipation. Its pathogenic factors were cecal atony, rapid absorption of liquid from the cecum, the resulting extreme dryness of the feces, and coprostasis. One could not speak of typholalbuminuria unless the cecum appeared to be at the bottom of the albuminuric phenomenon. The structurally or functionally defective cecum was bound to disturb the intraabdominal equilibrium in general and the visceral lymphatics in particular. The lymphatics, including those of the cecum and its mesocolon, became readily overfilled, and a lymph stasis might ensue. The escape of some of the contents of the engorged lymph channels through newly formed lymph varices near the surface of the lining epithelium of the urinary tract was but a natural consequence. The occurrence of typholalbuminuria did not depend more upon the amount of protein ingested at any one time than on the interrupted draining of the lymph stream into the venous system.

Dr. L. F. BISHOP of New York said that the paper had some very suggestive ideas. The connection between the lymph channels and the urinary tract was an important idea in connection with the remarkably new knowledge of the process of protein digestion and absorption. Dr. Van Slyck of the Rockefeller Institute announced in his lecture before the Harvey Society that the amino-acids were broken up in the intestines and absorbed into the blood but almost immediately were taken up by the tissues. For this reason they could only be found in the blood for a short time after digestion. Thus they had the astonishing picture of a meal of albuminous food being almost immediately deposited in the cells of the body. From the tissues this crude material must be reabsorbed into the blood for gradual disposition by the kidneys, liver, etc. It was easy to see that this must bring about a condition by which the lymphatics could well become the source of albuminuria rather than the blood-vessels.

**Cardiospasm: What Is It? What It Seems to Be.**—Dr. ANTHONY BASSLER of New York read this paper. Cardiospasm, which had always been described as a spasm of the cardiac orifice of the stomach was shown to be epicardial in almost every instance. The lower extremity of the esophagus, or cardiac orifice of the stomach, had no, or only a faintly developed, sphincter. Since it had not been proven that cardiospasm was not what its name implied, he made observations in the hope of elucidating this point. As a result of the dissection of five cadavera, he pointed out among other things that at the esophageal opening of the diaphragm the normal gullet was wider than above it, and that below the opening it was funnel shaped; that there was a length of esophagus in the abdomen about the distance of the height of one vertebra running from the esophagus opening of the diaphragm to the cardiac orifice; that there was a bulb or dilatation in the gullet above the diaphragm due to the anatomy of the esophageal opening; that a status of tonus existed in the fibers of the crura which tended to press upon the gullet; this was not demonstrable during anesthesia or at death; that the barrier to foods from the stomach into the esophagus was brought about by the pressure of the left lobe of the liver, folds of mucous membrane extending into the stomach from the gullet, and the resisting opening in the diaphragm and not by any arrangements of the circular or oblique fibers in the esophagus or cardiac orifice of the stomach; that the study of the arrangement of the fibers proved that when they were spasmed the logical result would be an opening of the tube or orifice rather than a stricture; that the anatomy of the muscular fibers of the crura surrounding the esophageal opening was such that by tonus of them they contracted upon the gullet drawing the central tendon of the diaphragm sharply into the esophagus; that the operative literature against this assumption was meager; that his *x*-ray observation in seven cases of cardiospasm suggested that the stricturing factor was the esophageal opening of the diaphragm, and not the gullet itself; that when these cases were dilated mechanically the effects were produced by stretching the esophageal opening, and that if the interpretation of his studies were correct it seemed warranted to consider an operative procedure for intractable cases which had to do with the division of the crura either at their insertions or the bisection of the inner portions of both at the back of the gullet or some portion of the esophageal opening.

**Cooperation of State Medical Societies in Public Health Education.**—Dr. ELEONORA S. EVERHARD of Dayton, Ohio, read this paper. She said that through the work of Pasteur came to the medical profession the beginning of that knowledge by means of which all infections might be stamped out. Yet in the year 1913 1,500,000 persons would die of preventable disease. This loss would be due in part to ignorance of the victims, in part to willful disregard for laws of health, and in large part of the defencelessness of the innocent in the presence of ignorance and willfulness. For the protection of the health of the community statutory regulations were wise and just; but laws were enacted only at popular demand, and if enacted without the support of public opinion they failed of enforcement. General education of the public would insure better health regulations. It was neither possible nor desirable to make of each individual his own sanitarian. Help him to see the need for sanitation and to quicken an appreciation of training in the officer who was to be the custodian of the common health. Of what avail was legislation if the local health officer was lacking in either time, knowledge, or inclination to enforce the law. In 1909 the women physician members of the American Medical Association were requested to take the initiative individually in their respective associations in the organization of educational committees to act through women's clubs, mothers' associations, and other similar bodies, for the dissemination of accurate information touching the nature and prevention of disease and to elect from among their number a committee to take charge of the same. At the same time, all county, district, and other local medical societies were requested to hold annually one or more open meetings to which the public should be invited, and which should be devoted to the discussion of the same subject and to the general hygienic welfare of the people. Before the end of the second year work was organized in 45 states, 238 counties, Alaska, the Philippines, Hawaii, and the Canal Zone. The last annual report showed audiences aggregating little less than 400,000. The report for this year would show a material increase over those figures. The Committee of the American Medical Association found its most appropriate field in coordinating the educational work of the several states and making known to all those methods found effective in any. To the State Medical Society remained the privilege of cooperating with that committee by assisting the county societies and through them encouraging the individual physicians, thus guarding health interests within the State.

Dr. JOHN A. WITHERSPOON of Nashville, Tenn., did not believe that any more important subject could be brought before such a body of medical men, and he called attention to the fact that the American Medical Association had spent a large sum of money in educating the people in these matters.

**The Industrial Disease-Reporting Law.**—LEONARD W. HATCH, Ph.D., State Statistician, New York State Department of Labor, read this paper. He said that compulsory reporting by physicians of certain industrial diseases was inaugurated in New York State, September 1,

1911. It was the purpose of his paper to set forth the fundamental reasons of such compulsory reporting of industrial diseases, and to illustrate from actual experience how this purpose was to be worked out in practice; also to emphasize the necessity for certain details required in reports, and to suggest the larger opportunities beyond mere legal requirements which lay at the physician's door in this field. With reference to the general purpose of compulsory reporting of industrial diseases by physicians, the New York law did not represent something novel and untried. On the contrary, if one looked to the experience of other countries, it would be found that such registration represented only settled practice. Thus, in Great Britain reporting of industrial diseases, precisely like that in New York, had been required for eighteen years. In fact, the New York reporting act copied the British law directly. In the same year that the New York law was passed (1911) five other states (California, Connecticut, Illinois, Michigan, and Wisconsin) took the same step. Last year two more states (Maryland and New Jersey) passed similar acts, making in all seven states which had adopted the system. It was probably safe to say that it was only a question of time before such registration of industrial disease would be generally required in this country. But there was better reason for such a law than its mere existence elsewhere. In endeavoring to make this clear he asked them to consider three points: First, that the law has a very practical end in view which was of great importance as a matter of public welfare and social justice; second, that the method of reaching this end commended itself as scientific, and third, that no other plan could as well effect the purpose. The act of 1911 made only six diseases—poisoning by lead, phosphorus, arsenic, or mercury, anthrax, and caisson disease—reportable. By an amendment passed this year two others—poisoning by wood alcohol, or brass—were added. But outside of these eight there was a long list of poisons and diseases whose causes were to be found in circumstances of occupation. In Great Britain, where work in this field was further advanced, more than a score of industrial diseases had been so clearly identified as due to hazards of occupation that they had been included under the workman's compensation act which insured to workers automatic compensation for injuries arising from the nature of their employment. It was this broad pioneer field which was here pointed out to the physicians of New York State as one needing investigation in order that the present rising demand for legislation along these lines might be guided by accurate knowledge of the facts, and as one which the physician by reason of his professional knowledge was peculiarly fitted to study.

**Experience with Neosalvarsan at the Harlem Hospital.**—Dr. Howard Fox of New York read this paper, which gave the results of his personal experience with 175 tubes of the new remedy received from Professor Ehrlich. The experimental work was done in the out-patient department of the Harlem Hospital, the patients being allowed to go home immediately after treatment. Of the 56 patients that were treated, 45 were given intravenous injections. One of these received two injections, 17 received three, and 27 received four, the treatment being given, so far as was possible, every other day. No other antisyphilitic remedy was used. The cases included various forms of cutaneous syphilis, syphilis of the mucous membranes, of the eye and bone; also a few cases of latent syphilis, and one of tabes. Muscular syphilides disappeared as a rule within a week, and most of the papular syphilides in from two to four weeks. Very gratifying results were obtained in cases of the nodular syphilide, while they varied in cases of gummata. The mucous membrane lesions showed the same tendency to rapid disappearance that was so characteristic of salvarsan injections. One case of condylomata, however, did not clear up until the end of five weeks, although three intravenous injections had been given. One case of iridocyclitis cleared up in three weeks; in another patient an iritis appeared during the course of treatment. A most gratifying result occurred in a case of marginal keratitis. The redness and photophobia disappeared on the second day after the injection, and on the third day the patient could read. There was no improvement in a child with interstitial keratitis; at the end of one month the second eye became involved. No change occurred in two cases of atrophy of the optic nerve, or in a case with paralysis of the superior rectus muscle with ptosis. The result of treatment in several cases of bone syphilis was very satisfactory. One patient had suffered from osteoperiostitis of the tibia for two years; this caused a great deal of pain and difficulty in walking. After a single intramuscular injection the pain disappeared in twenty-four hours, and at the end of a month the patient could walk without difficulty. The improvement was also shown by accompanying radiograms. Another patient with periostitis of the ankle and knee was given three injections. Although the knee had been stiff for six months, it became perfectly normal on the day after the second injection. In a case of osteoperiostitis of the femur practically no change except a lessening of the night pains occurred. One case of tabes dorsalis showed an improvement in gait and general strength. The Wassermann tests were made, as far as possible, at monthly intervals. Of 36 cases treated by three to four intravenous injections, and followed serologically for an average of over five months, one became negative and remained so for four months; two became negative and two almost negative, but later relapsed and became partially positive. A lessening of the strength of the reaction took place in 16 cases, while in 15 cases there was no change. In giving the intravenous injection it was not possible to obtain water that was absolutely freshly distilled. It was possibly due to this fact that chills or chilly sensations were noted after 27 injections, nausea after 30 injections, as well as other symptoms, none of which, however, were severe enough to prevent regularity of attendance at the clinic and return for further treatment. Among the general effects was a marked increase in the appetite and gain in weight. Eleven patients gained an average of 13 pounds. There was no disturbance in the menstrual function. The local effects of the intravenous injections varied from the formation of a tiny nodule to complete occlusion of the vein. This was as a rule so slight that four intravenous injections could be given in the same vein. The intramuscular method was tried in 11 cases; the results were excellent, although the pain and induration which followed more than counterbalanced the time and trouble of giving several intravenous injections. Dr. Fox offered the following conclusions: 1. Neosalvarsan was an excellent symptomatic remedy in the treatment of syphilis. 2. Its symptomatic action seemed to be slightly weaker than salvarsan when used in corresponding amounts. 3. Its serological action seemed to be considerably weaker than salvarsan when used in corresponding amounts. 4. It possessed a decided advantage over salvarsan in the greater ease and rapidity with which it could be prepared and injected intravenously. 5. Intravenous injections of neosalvarsan were much less disturbing to the veins than intravenous injections of salvarsan.

**Results of Salvarsan Therapy in Malignant Syphilis Precox, Syphilide of the Palms and Gumma of the Tongue.**—F. L. Ziegel of New York read this paper.

*Malignant Syphilis Precox.*—This was previously published in the Medical Record, 1909, Vol. LXXVI, p. 645, under the title: "Precocious Tertiary Syphilis: Report of a Case with Manifold Manifestations." The subsequent history of this case showed that in malignant syphilis with severe mucous membrane lesions which had been resistant to mercurial treatment, brilliant symptomatic results could be obtained with salvarsan. When in July, 1910, the patient passed temporarily out of observation, the Wassermann reaction was still strongly positive; contrary to advice he discontinued treatment because the patient was free from symptoms and lesions. When he returned in July, 1912, he was cachectic; there was profuse foul discharge from deep ulcerations, and broken-down gummata in the nares and pharynx. The Wassermann test was strongly positive. Neguchi's luetin test was positive, of a pustular type. After intravenous administration of 0.6 gm. of salvarsan the ulcerations healed rapidly, the discharge ceased, and the patient's weight increased from 112 to 130 pounds. The salvarsan treatment was repeated and followed by gray oil injections. In December, 1912, the patient was free from symptoms and lesions, but the Wassermann and luetin tests were still positive, and the patient was far from being regarded as cured of syphilis. Conclusion: Salvarsan caused rapid involution of severe syphilitic lesions, but did not effect a cure in malignant syphilis.

*Syphilide of the Palms.*—After three years of mouth treatment following primary luetic infection twelve years ago, a scaly eruption appeared on the palms which had been unsuccessfully treated with ointments when the patient first came under observation, three years ago. Twice apparent cure followed salicylate of mercury injections, but the Wassermann remained positive and the scaliness returned. Accordingly, 0.5 gm. of salvarsan in iodipin suspension was given intramuscularly and repeated in two weeks. Even before the second injection the palms had become soft and free from scales; up to date, during a period of two years of observation, there had been no recurrence. Nine days after the second injection the Wassermann was negative; twice subsequently it was nega-

tive. Luetin test negative in March, 1913. Seven months after marriage, nine years ago, there was a still-birth. Two years ago the wife's Wassermann was negative. She was now pregnant eight months, and the fetus was living. Conclusion: In scaling syphilide of the palms salvarsan was to be chosen as the specific in preference to mercury.

*Gumma of the Tongue.*—In 1905 a New York physician who failed to make it a rule to wear rubber gloves in his obstetric work noticed a pimple-like swelling on his right index finger which suppurated and refused to heal under surgical measures. Seven weeks later atypical secondary symptoms developed. First, with inunctions, and later with salicylate of mercury injections, the treatment was systematically kept up for four years, and was followed by negative Wassermann reactions from 1909 to 1911. In October, 1911, a protuberance of pin-head size was noticed on the dorsum of the tongue; the swelling increased in size to that of a pea in three days. Wassermann was now faintly positive. Intravenous injection of 0.6 gm. of salvarsan was followed by prompt regression of the tumor. One year later (in October, 1912) the Wassermann was negative, but neosalvarsan was given as a precautionary measure. In March, 1913, Wassermann and Noguchi's luetin tests were negative. Conclusion: Thorough mercurial treatment for four years after extragenital infection was followed in two years by a superficial lingual gumma which "melted away" after the administration of salvarsan.

**The Polygraph.**—Dr. George W. Ross of Toronto, presented this instrument. The MacKenzie ink-writing polygraph, and also his modification of the Dudgeon instrument were shown, and their manner of use explained. The great advantage of the polygraph was that it enabled one to record simultaneous tracings of two separate points in the cardiovascular system—for example, of the radial pulse and the jugulocarotid pulse, and to interpret the meaning of the various waves recorded. This was of especial importance with respect to the so-called venous pulse, inasmuch as certain of the waves gave valuable information concerning the vital activities of the right side of the heart—information that was commonly unobtainable except by instrumental means. The modern conception of heart anatomy and physiology was briefly reviewed, and the most important irregularities linked therewith. Next was considered the following arrhythmias: (1) Sinus, (2) Extra Systole (Premature Contraction), (3) Partial and Complete Heart Block, (4) Auricular Fibrillation, (5) Pulsus Alternans. The recognition of these by means of the polygraph was referred to and also their significance.

*Thursday, May 1—Third Day.*

**The Present Obligations of Physicians Regarding Syphilis as to Both Patients and the Public.**—Dr. F. Wood Ruggles of Rochester read this paper. He said that the advance in their knowledge regarding syphilis during the past eight years had been greater than that during the history of medicine. What had been learned previous to that time was purely empirical, at least, outside the pathology of the disease. Whether the disease existed at all prior to 1493 was problematic. It was certain at that time, at the siege of Naples, in both armies, it spread rapidly over Europe as a plague, and that until the whole world had been syphilized it had a high death rate. Soon after this outbreak it began to be recognized that mercury was the sovereign remedy against the disease, and this discovery was undoubtedly accidental, resulting from a trial of numerous remedies. In 1832 it was found that iodide of potassium was also a valuable remedy. A knowledge of these facts, however, had never been shared by the whole profession. Lereux and Metchnikoff succeeded in inoculating apes with the disease in 1905. Later Schaudin discovered a spirillum which he termed the spirocheta pallida, on account of its feeble staining properties. Physicians as a class were altruistic. They cheerfully sought that which no other profession or trade had ever done, to make their employment unnecessary by decreasing the number of diseases in the world through the teaching of prophylaxis, hygiene, sanitary methods, protesting against contaminated water supplies, etc. Yet the physician must live from his profession, without malice on his part; there was, however, a certain gratification when he was called to treat a chronic case which promised to be remunerative. Dr. Ruggles desired to arouse a new morality in regard to their attitude toward syphilis. In the presence of such a scourge, if they could do anything to lessen its consequences for the unfortunate victim, and diminish the chances of his communicating the same pestilence to others, they should forget all selfish, pecuniary motives, and do their utmost for a swift and sure eradication of the disease. It was his opinion that it was absolutely immoral for a physician to let a suspicious genital sore remain a single week without taking advantage of the darkfield method and making an early diagnosis, if possible. It should be borne in mind that the use of two or three injections of salvarsan obliterated the contagiousness of syphilis, as a rule. In his opinion, the most positive proofs of the superiority of salvarsan over mercury in the treatment of syphilis were the numerous cases of early reinfection and freedom from mucous plaques, with the rare occurrence of other secondaries. In his own practice, even after he had given up internal mercurial treatment, and was using only intramuscular, or inunction treatment, practically every case would present some mouth or throat lesions during the first year, some quite frequently, so that every week there were several mouths to be treated. At present, in spite of having a greatly increased number of syphilitic cases under treatment, he saw absolutely no mucous patches, except in patients sent for consultation who had not received salvarsan.

**Examination of the Exposed as a Factor in the Prevention and Relief of Tuberculosis.**—Dr. John H. Pryor of Buffalo said that the paramount importance of early diagnosis was to secure admission of patients to a sanatorium, and thus secure effective relief, education, and prevention at the opportune time. Only about 1 per cent. of consumptives in a given locality are sent to a sanatorium during the incipient stage, and about 99 per cent. were discovered too late or treated at home too long to secure benefits of modern knowledge and management. More and more patients were learning the truth and would ask why they were too advanced and the chance for proper relief and control lost. The excuse that patients did not consult a physician early enough was too often untrue. The new method of examining for pulmonary tuberculosis was not properly taught, and the text books were not up to date. Examination of the exposed did not apply alone to the danger of infection by long and close contact. They must remember that the same predisposing and contributing causes were at work, and they were often aggravated if the wage earner was afflicted. They knew that one case was often followed by another, and they should remember that they were dealing with a communicable disease. Watch for new developments in the home. The procedure of examining others exposed was so rational and necessary that it was strange it was not a routine practice. If not employed in a dispensary for tuberculosis the work was partial, faulty and worthy of criticism. The advanced case should lead to the incipient one, and others protected from somebody's blunder. The procedure was surrounded with difficulties now, and required much work for little or no remuneration, but obstacles would disappear if it became a recognized custom by the medical profession. At the Buffalo Tuberculosis Dispensary, where the method of examining the exposed was begun in 1907, the following report was presented where all the families were examined and one case existed: Pulmonary tuberculosis was found in one or more members of 248 families (35 per cent.). In 87 families 100 cases of pulmonary tuberculosis were discovered. In 113 families where other members were examined before and after the death of a consumptive other cases were found or reported in 40 per cent. It was a serious blunder to wait for symptoms, as many truly incipient cases were symptom-free, and might not appear for weeks after the diagnosis had been made. Hemoptysis was the exception, but it had occurred in 8 per cent. of 2,000 cases under observation. The examination of the exposed afforded the best opportunity to learn the art of early diagnosis. By the introduction of a rather new method, used principally by experts at present, there was little excuse for failure to recognize early cases. He referred to auscultation with cough. If this was not employed the area of disease might withhold its secret, and furthermore, the limits of invasion could not be clearly defined. Auscultation with cough was probably more valuable than all other means combined. The regions most frequently overlooked were over and at the edges of the sternum, and along the spine. The sternum was often not examined, and the free edges of the lungs not searched. A chart was added showing the comparative frequency of the initial location of invasion as revealed by physical signs.

**Auscultation of the Acromial Process: Its Importance in Apical Disease.**—Dr. Robert Abrahams of New York said that he had studied auscultation at the acromial ends of the clavicles for more than three years, and had come to the conclusion that this deserved a place in physical diagnosis. The method of procedure was very simple: the bell of the stethoscope was placed over the acromial end of the clavicle, and was adjusted in a way that there was perfect adaptation between instrument and bone. The

patient was told to breathe, to count, to whisper, to cough. Once in a while, in spite of best efforts, the adjustment could not be made, due either to instrumental or anatomical difficulties; then the procedure was a failure. When the apices were diseased the following was to be observed: (1) Right apex. In a case of a very early infiltration, auscultation at the ecromion process would yield an appreciable, prolonged expiratory sound, a louder spoken voice, and a slightly increased whispered sound. First-stage tuberculosis of the right apex would reveal tubular breathing, bronchophony, and whispered pectoriloquy, signs when found over lung tissue would indicate absolute consolidation. In other words, the usual acoustic phenomena which were, or should be, apparent in the first stage of tuberculosis of the apex, were greatly exaggerated, and made evident when the outer process of the right clavicle was auscultated. (2) Left apex. In incipient tuberculosis of the left apex, breathing conducted through the acromion end of the clavicle became pronounced bronchovesicular, and an increase in voice and whispered sound became marked and notable. The same changes were with difficulty perceived by auscultation of the apex itself. When the infiltration reached a fair degree of advancement, like unto the first stage, breathing heard at the acromial process assumed a tubular character; the voice changed into bronchophony, and the whispered sound sounded like pectoriloquy. The same signs, under the same condition of the apex, would be found over the apex, but not nearly so clear, demonstrable and pathognomic.

**Tuberculin Treatment.**—Dr. Edward R. Baldwin of Saranac Lake read this paper. He said it was evident that tuberculin treatment was often given ignorantly. The nature of tuberculin was important to understand. It was a poison to tuberculous individuals. All forms were similar in action when enough was given. If they produced no reactions, they were inert. The object of the treatment was either to reduce the hypersensitiveness or to stimulate the tuberculous tissue to heal by intermittent reactions. Cases for treatment should be built up in health and nutrition, and rested until acute symptoms subsided. All bad complications—intestinal, ulcerated larynx, fever of 100° F., or over, and weakness were contra-indications. Scrofulous cases were often favorable. Reactions were to be avoided; they might be local, focal, and general, with or without fever. The treatment was empirical, and an experiment in each patient. Rules about dosage were not hard and fast. Skin tests at the start formed some guide to dosage. Cures were not made by tuberculin alone, but might be assisted or retarded by it. It might produce much symptomatic good by lessening sensitiveness to itself, or it might aggravate the disease.

**The Incidence of Renal Involvement in Pulmonary Tuberculosis.**—Dr. Harry S. Bernstein read this paper and made the following summary: One hundred urines from cases of pulmonary tuberculosis were examined for the presence of the tubercle bacillus by guinea-pig inoculation. Ten (or 10 per cent.) produced tuberculosis in guinea pigs. Symptoms referable to the urinary tract were absent in each case. Control inoculation in five of the cases corroborated the first findings. Six of the positive urines were negative for albumin. Three urinary sediments contained pus cells. Cystoscopy of three cases revealed no pathological condition of the meati. In one case the urine from each kidney produced tuberculosis in guinea pigs. In two cases only one kidney was positive. The post-mortem records showed a percentage of 3.4 of kidney involvement in pulmonary tuberculosis.

Dr. Charles Stover of Amsterdam said that when they took into consideration the large number of hopeless cases of pulmonary tuberculosis which had continued after many months of treatment, and the fruitless search for health, the results that had been secured by the employment of artificial pneumothorax and with tuberculin were worthy of consideration. But this work should be done by the expert, and not attempted by the average physician. However, one must come to the conclusion that the successful treatment of this disease, tuberculosis, came finally to the question of sociality. He called attention to the good work done by the social workers, those who followed up patients at their homes and who were of great value in educating these sufferers, especially those in the incipient stage sufficient funds should be had to make this work successful. There should be complete organization, and they should take advantage of every State Aid Charities societies which existed in every town.

Dr. Baldwin emphasized the importance of getting at the early cases of tuberculosis. When an early case was discovered, what should be done with it? He confessed that this was a big problem confronting them. One must use a great deal of judgment and tact in making an explanation of the condition to these patients. He did not believe they should call a person tuberculous who had no symptoms of the disease. The tuberculin test was often a delusive aid, but it often helped, especially in children. With regard to artificial pneumothorax, from his point of view it was very important, especially in the treatment of the advanced cases of tuberculosis.

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SECTION ON SURGERY.

*Wednesday, April 30.*

This was a joint session of the Section on Surgery with the Section on Medicine. The topic under discussion was duodenal ulcer.

**Etiology and Morbid Anatomy.**—Dr. Marshall Clinton, of Buffalo, read this paper. He said duodenal and gastic ulcer were so closely allied anatomically and etiologically that in a discussion of the etiology of duodenal ulcer they should take some notice of the factors that produced gastric ulcer. A great amount of experimental work in the production of ulcer had been carried out by different workers. Ulcers produced by direct trauma of the stomach wall, by feeding filth to animals, by using stomach scrapings injected into other animals to produce a cytolysis of the mucous membrane, had been followed by acute ulcer. All this experimental work had failed to this extent: chronic ulcer of the stomach or duodenum had not been produced. Acute ulcers had been formed as a result of these various experiments, but they came under the head of acute ulcers, while by custom now, when they spoke of duodenal ulcer they meant a chronic indurated ulcer. Chronic ulcer was generally rounded or oval with the long axis of the ulcer at right angles to the axis of the stomach or duodenum. The gastric juice played an undoubted rôle, for it was the usual clinical observation to find ulcer associated with an excessive quantity and a greater degree of acidity than normal. As to the pathological anatomy of ulcer, the ulcer has a typical punched out appearance. Sections of the ulcer did not seem to bear out the old idea that thrombosis played a part in its production. They believed that ulcer of the mucous membrane and deeper structures to be the result of mechanical trauma, plus a chemical action of the gastric juice. To become chronic, this trauma must be frequently repeated. The disturbance of the action of the pylorus by reflex impulses from other structures or the increase in quantity and acidity were the essential causes of chronic duodenal ulcer.

**Complications of Duodenal Ulcer.**—Dr. John B. Harvie, of Troy, said that the complications of duodenal ulcer were cancer, hemorrhage, and perforation, which would call for the most vigorous and energetic treatment. Obstruction due to contraction would permit of greater deliberation. Unfortunately, malignant disease had usually passed beyond all likelihood of successful surgical intervention when the diagnosis was made. He had met with a number of cases of inoperable carcinoma occurring in the pylorus and upper part of the duodenum, starting at the base of an old ulcer, and while careful analysis of the symptom-complex might have led to an earlier diagnosis, he had not been fortunate enough to have these cases in time to be of material benefit to the patients. If there was one department of medicine in which diagnosis was called for more promptly than others, it was the right time to interpret the significance of serious abdominal lesions. The differential diagnosis between perforation of duodenal ulcer and perforation of any other hollow viscus would present difficulties, and interpretation of the site of the lesion when general peritonitis was established, and the abdomen distended with contents, made any attempt at localization largely speculative. Males suffered more frequently than females from duodenal ulcer.

**Non-Surgical Treatment of Duodenal Ulcer.**—Dr. Charles G. Stockton, of Buffalo, said that treatment was not directed toward curing the ulcer, but in controlling the patient and in managing the digestive tract that the ulcer might heal spontaneously. The indications for treatment were (a) to require that the patient be kept in bed continously for several weeks, for it was known by assuming the upright position, bending the trunk or making movements which involved the action of the abdominal muscles, the relations of the duodenum to other parts were changed, and undue tension might thereby strain the walls of the ulcer; (b) to manage the patient so that involuntary motion of the pylorus and duodenum might be minimized, that the elements of overtonicity and spasticity of the parts might be avoided; (c) to lessen the amount of gastric secretion, with decreased acid and enzyme activity of the gastric juice before it passed the pylorus. Adrenalin in

gastric and pyloric spasm in four out of six cases was given with favorable results. In the use of adrenalin they had a fresh means of relieving a proportion of cases of gastric and pyloric spasm. Another method which acted in overcoming pyloric spasm was duodenal alimentation as advocated by Einhorn. They had in this method a new and improved means for the treatment of gastric and duodenal ulcer. He believed the time was near when this plan of treatment would supersede operative interference in a number of cases where the need of operation was now felt.

**Surgical Treatment of Duodenal Ulcer.**—Dr. JOHN B. MURPHY, of Chicago, said that the acute cases yielded very well to medical treatment. The best results were obtained by physiological and physical rest. Both medical and surgical rest was obtained in a large number of cases after the plan outlined by Dr. Stockton, if it was followed. His personal observation of twenty-one years in work of this kind had shown that they got better results in the chronic cases from surgical treatment, and that they had greater freedom from recurrences of attacks. Surgical treatment was usually instituted at a time when it was not easy to save life; but they were making great strides. When one compared the mortality of duodenal perforation of fifty years ago with the mortality of today, it was very much to the credit of the medical and surgical branches of the profession. Ninety-three per cent. of all lesions of the duodenum or duodenal ulcers occurred on the anterior surface and in the first portion. When perforation occurs, stop the leak always. Do it quickly. It was unnecessary to do gastroenterostomy at that time. Relieve the tension of the products of infection and of the material that had escaped into the free peritoneal cavity, using the Fowler position and lower abdominal drainage. Restore the patient's arterial tension immediately on the table, and while they were closing the abdomen have your assistant give intravenous transfusion if the patient was below par. On this plan a great reduction in mortality had been made. The best results at the present time were obtained by following simple means, namely, infolding of the ulcer area after the plan of Mitchell, who reported nineteen cases, with eighteen recoveries.

**The Diagnosis and Prognosis of Duodenal Ulcer.**—Dr. JAMES TAFT PILCHER, of Brooklyn, presented this paper in analysing the histories obtained from some two hundred cases of duodenal ulcer personally observed recognized in the great majority of them four pre-eminent factors. First, the *chronicity* of the complaint; second, the *periodicity* of the exacerbations of epigastric distress; third, the occurrence of *pain* of a peculiar character with precise time of onset; and, fourth, the *control* of this discomfort by the ingestion of food or alkalies, remarking that in the cases observed lately the marked period of chronicity had been reduced owing, probably, to the growing familiarity with the condition. Regarding the usual anamnesis obtained, he typified it as being found in a male who usually remarked that in the beginning of his trouble he noticed the onset of pain or burning in the pit of the stomach accompanied by sour eructations, belching and possibly regurgitation at time of small quantities of acrid material, which condition lasted from a few days to several weeks, when it suddenly ceased and was followed by a varying interval of complete health, when the same syndrome was repeated. In many cases the interval of relief was not so complete and the patient merely had his good and bad days with exacerbations at varying intervals of time. Dr. Pilcher considered the most corroborative subjective symptom possibly to be the peculiar effect that the ingestion of food had upon the epigastric distress, which act he had observed almost without exception was to be found to give immediate relief, at least in the earlier stages of the condition before complications had arisen. This phenomenon he had shown experimentally to be effected through the mechanical stimulus thus given to the stomach which excited the reflex flow of the alkaline duodenal secretion which thus neutralizes the hydrochloric acid present in the duodenum. The pain complained of was, usually, characterized as a burning or gnawing, frequently as an intense hunger amounting to an actual ache. It was also described as an "all gone" sensation. The most noteworthy fact relative to it was the remarkable precision and exactitude with which it occurred after eating, usually averaging from between two and a half to four hours, and, while differing in different patients, practically never changed in an individual case until other processes were engrafted on the original lesion. The nearer the pylorus the ulceration was the earlier seemed to be the onset of this distress. Attention was called also to the fact that in the duodenum two distinct pathologic processes were found, in that the ulcers on the anterior superior surface differed very markedly in character from those on the posterior wall. The former, as a rule, showed a very slight defect in the mucous membrane in no way corresponding to the area of infiltration felt from the outside, the orifice seldom exceeding the size of a B.B. shot, frequently being recognized as a mere slit; while those on the posterior wall approached in character the typical punched out round gastric ulcer. The latter seemed to perforate rapidly through the several coats of the intestine and were usually found to have their base formed by the pancreas which was frequently deeply invaded by them. The variation in the symptomatology evidenced by these two types of duodenal ulceration offered further data for differential diagnosis, since it was noted in the cases considered that the callous round posterior ulcers gave a much longer history, were not so acute in the differentiation in the cardinal diagnostic factors, did not suffer so much acute distress, but complained of a more continued discomfort which in turn was not affected so definitely by the intake of food and usually caused the maximum of duodenal deformity and consequently the greater degrees of stenosis. Further, they were much more easily demonstrable in the radiograph, while the anterior small ulcerations evidenced the more typical syndrome, seldom caused much deformity or stenosis, usually bled more easily and continuously and were not so easily diagnosed by *x*-ray. Regarding the accessory aids to the diagnosis of duodenal ulcer, he considered the *x*-ray as the most important, but cautioned against making too positive a diagnosis owing to the many artefacts obtainable in this region. Gastric analysis showing a marked hyperacidity was considered merely as suggestive and probably the greatest importance which might be ascribed to test meal findings was to be obtained by the analysis during one of the intervals free from distress at which time it had been noted that the acidity was usually normal or even subnormal. Blood in the stools was too variable a factor to give a position of any real diagnostic importance. Dr. Pilcher considered that one of the most essential elements to be recognized in cases of duodenal ulceration was to ascertain the etiologic factor of the process, and suggested that in referring to the condition it might be advantageous as well as instructive, whether the case be treated medically or surgically, to prefix a surname indicative of the underlying cause suggesting the terminology as jejunal, ileocecal, appendical, colonic, membranous pericolitic, static, ptotic. The prognosis was regarded as a relative question. That of anterior ulceration owing to the fact that these were the ones that perforated most frequently and also as they were the most frequent in occurrence, led one to make a rather unfavorable prognosis, if such ulcers be allowed to continue their course. Those situated posteriorly, on the other hand, although seldom perforating into the abdominal cavity were prone to inaugurate complications such as pancreatitis, common duct obstruction and duodenal stenosis, which might eventually prove quite as dangerous as the acute perforation. The engraftment of carcinoma was so rare that it might be disregarded. In many instances the prognosis was determined by that of the etiologic factor, several cases being quoted in which death occurred due to a ruptured appendix in whom duodenal ulcer was found at post mortem. While many cases entered into a state of chronic invalidism, others which must represent a large class, suffered but slight discomfort, or none at all, the speaker concluding that in cases properly chosen for medical or surgical treatment the prognosis in the very great majority was good.

Dr. ALLEN A. JONES, of Buffalo, said that hunger pain was an important symptom in the diagnosis of duodenal ulcer. Most of the cases of duodenal ulcer that came to them had this hunger pain very marked. It was not a symptom, however, on which they should diagnose positively duodenal ulcer. *X*-ray examinations were important in the chronic cases in which adhesions had formed, or in which there was partial stenosis of the pylorus and duodenum just beyond. Hematemesis was as common with duodenal as with gastric ulcer. They should advise against surgery in all cases where there was a profuse hemorrhage. Acute abdominal pain, at all times, with other symptoms was of extreme importance.

Dr. MAX EINHORN, of New York, said he had had several cases of ulcer of the stomach which had come to operation later that presented the characteristic symptoms mentioned by Dr. Pilcher of duodenal ulcer. That duodenal ulcer was no more frequent than gastric ulcer could be proven by experience. Hemorrhage was not an indication for operation. He thought ninety-nine per cent. of the cases of duodenal ulcer got well under careful, judicious medical treatment.

Dr. Robert T. Morris, of New York, said in regard to acute duodenal ulcer calling for immediate treatment that he had but one new point to offer, namely, their whole tendency was to conserve the strength of the individual in such a way that he might produce his own leucocytes, his own phagocytes, and carry on the processes of elimination himself.

Dr. Charles L. Gibson, of New York, said that one pitfall in the diagnosis was the question of free air in the peritoneal cavity masking or obliterating liver dullness. He was sorry this sign was invented, because it was one of the greatest pitfalls they had. Practitioners had refused to make a diagnosis because this sign was absent. Another pitfall was to lay undue stress on blood examinations in duodenal ulcer. One sign that occurred as a transitory one came within the first half hour, namely, pain, quite marked, in the supraclavicular fossa, right or left, more often the left in his experience. The indications for gastroenterostomy in these cases were extremely restricted.

Dr. Anthony Bassler, of New York, said the cases of duodenal ulcer with perforation were surgical; cases in which there was recurrent hemorrhage were surgical, even if the hemorrhage was moderate in amount.

**Radium in Surgery.**—Dr. Howard A. Kelly of Baltimore presented this paper. He said that radium was destined to make a change in their surgical and medical work not less and perhaps even more decided than that which followed the introduction of the *x*-ray. Radium in surgery would definitely cure many forms of cancer, especially in the early stages; it would cure ninety-six per cent. of skin cancer; it would wipe out many recurrent uterine cancers, and, if taken early, some cases of rectal cancer; it acted most favorably on parotid growths; it would cure some cancers of the lip, tongue and breast and acted positively also upon sarcomata. It also cured various other fibrous and epithelial growths, especially on the surface of the body. One of its happiest effects was in curing angiomata, even the large vascular growths which could not be treated at all surgically. In gynecology radium acted happily, aside from its value in cancer, in checking the growth of fibroid tumors of medium size, in stopping uterine hemorrhages, and in relieving some forms of pelvic inflammatory trouble. One of the happiest uses was in the cure of obstinate pruritus of the vulva and anus. In exopthalmic goitre there was a good promise of a definite field of utility resulting from Dr. Robert Abbé's work. Its use in general surgery, in dermatology and in medicine bids fair to bring about either a realignment or at least a readjustment of the work in these branches. His first experience was with a woman upon whom he had operated six years previously for carcinoma of the uterus. She had hemorrhages and he found a sinus in the right vaginal vault leading back into the posterior pelvis over the uterosacral ligament, undoubtedly a cancerous recurrence absolutely beyond operative relief. He applied radium for twenty-four hours on three successive occasions at an interval of a week. The patient recovered promptly and had remained well and free from recurrence since. Another instance was that of a patient upon whom he operated for a cervical carcinoma in a distant city. Some months later, she was sent to me by her physician with a cancerous efflorescence at the vaginal vault. Without preliminary curettage or treatment, and solely with repeated applications of radium, the disease disappeared and the patient had remained free from recurrence a year and a half. This patient received in all 4,000 millegram hour treatments. In another instance, a doctor brought his wife to him who had an extensive carcinoma infiltrating both broad ligaments. Realizing the utter impossibility of extirpating the disease, he literally carved the uterus out from the infiltrated broad ligaments and left open both the abdominal and vaginal routes in order to have free access to the diseased area. The result was a remarkable modification of the disease, the tissues becoming brawny and leathery. The excessive hemorrhagic discharges never recurred and pain was relieved, though she died subsequently from the continuance of the disease; the use of the radium was palliative in an extraordinary way. Radium was also of the utmost value in certain classes of fibroid tumors, in checking hemorrhage and stopping growth. It would check hemorrhages from hemorrhagic uteri and thus save extirpation. It was also of great value in curing certain forms of pruritus about the genitalia and anus. The outlook for radium in gynecology was therefore a hopeful one.

**Possible Errors in the Diagnosis of Abdominal Cancer—A Plea for Exploratory Laparotomy: Illustrative Cases.**—Dr. William Seaman Bainbridge of New York discussed the importance of early exploratory laparotomy in obscure abdominal conditions in which, despite the application of all modern external diagnostic measures, the true state of affairs could not be ascertained. The purpose of the paper was to emphasize the importance of exploratory laparotomy, not by statistics, but by illustrative cases, not as a last resort, but as an early means of making an absolutely correct diagnosis as to the presence, extent, and site of abdominal cancer. The most telling arguments in favor of opening the abdomen and of seeing and feeling conditions as they existed were cases in which patients had been allowed to go untreated, or to be incorrectly treated, until it was too late for curative surgical intervention, and cases in which, through inexperience, perhaps, the surgeon was unable to make the correct diagnosis even when the abdomen was opened. More frequent resort to exploratory laparotomy, and the development of skill in differential diagnosis when this was done, would be the means of saving many lives, and of prolonging the span of very many more. Dr. Bainbridge illustrated his contentions with cases falling under six categories, as follows: (1) Cases diagnosed as cancer, with no cancer present. (2) Cases of cancer, not recognized as such, but diagnosed and treated as something else. (3) Cases of small cancer, diagnosed as cancer, but having far more of something else present, the latter condition or conditions being mistaken for malignancy, or being considered too serious, in conjunction with the cancer, to warrant operative interference. (4) Cases of advanced cancer, diagnosed as such, but made seemingly hopeless by an added condition which, in itself, was not of serious moment so far as prognosis was concerned. (5) Cases in which the error in diagnosis concerned the stage or extent of the cancer. (6) Cases of cancer in which the error in diagnosis concerned the type of malignant growth. In conclusion, however, he said he would not advocate exploratory laparotomy indiscriminately.

# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

### Medical Examiners of New Jersey.

*October, 1912.*

(*Continued from page 782.*)

#### PATHOLOGY.

1. Describe contractures, give causes, and varieties.
2. Give causes and symptoms of increased cerebral pressure.
3. Describe leucocytosis.

#### BACTERIOLOGY.

1. Give technique and meaning of Widal reaction.
2. Define antibodies, and state how produced.
3. What do you mean by agglutination?
4. What are Koch's postulates?

#### PRACTICE OF MEDICINE

1. Differentiate pallor, anemia, and chlorosis.
2. Differentiate vesicular and bronchial breathing.
3. Differentiate hepatic, renal, and intestinal colic.
4. Give four physical signs present in consolidation of lung tissue.
5. Describe (1) dry, and (2) moist râles, and give significance of each.
6. Describe the artificial feeding of an infant, month by month, during the first year.
7. Describe the eruption of (1) measles, (2) scarlatina, (3) varicella, and (4) variola.
8. Describe the *x*-ray. What are its uses, its dangers, and how can the latter be avoided?
9. Where and what is the cause of a systolic murmur heard at the ensiform cartilage?
10. Describe the various steps in making a complete uranalysis, giving your reasons and what you expect to find in each.

#### OBSTETRICS.

1. Define the three stages of labor, and give management of third stage.
2. Give symptoms of different degrees of mastitis, and treatment of each.
3. Give indications for the use of forceps, and describe in detail the application of median forceps.
4. Give indications for podalic version, and describe in detail how it is performed.
5. What is placenta prævia? Give symptoms and treatment.

## ANSWERS.

### PATHOLOGY.

1. *Contractures* are "states of the body in which the mobility of the limbs is lessened, and the position assumed by a limb is gradually fixed, so that it cannot be moved from that position. This occurs in two ways—a limb, for example, may be flexed by the activity of flexor muscles which are continually in a state of spasm, or by the action of normal flexors, *unopposed* by extensors, because the latter are paralyzed, while the former still receive the normal tonic impulses. This latter form of contracture is termed passive." (Adami and Macrae's *Pathology.*)

3. *Leucocytosis* is an increase in the number of leucocytes normally present in the blood. It may be *physiological* and *temporary,* as during digestion, in pregnancy, in the newborn; or *pathological,* as the result of fevers, infections, leukemia, and other diseases.

### BACTERIOLOGY.

1. *Widal's reaction* "depends upon the fact that serum from the blood of one ill with typhoid fever, mixed with a recent culture, will cause the typhoid bacilli to lose their motility and gather in groups, the whole called 'clumping.' Three drops of the blood are taken from the well washed aseptic finger tip or lobe of the ear, and each lies by itself on a sterile slide, passed through a flame and cooled just before use; this slide may be wrapped in cotton and transported for examination at the laboratory. Here one drop is mixed with a large drop of sterile water, to redissolve it. A drop from the summit of this is then mixed with six drops of fresh broth culture of the bacillus (not over twenty-four hours old) on a sterile slide. From this a small drop of mingled culture and blood is placed in the middle of a sterile cover glass, and this is inverted over a sterile hollowground slide and examined. A positive reaction is obtained when, all the bacilli present gather in one or two masses or clumps, and cease their rapid movement inside of twenty minutes." (From Thayer's *Pathology.*)

2. *Antibodies* are substances in the blood serum or other body fluids which antagonize or restrain the destructive action of bacteria. The antibodies now recognized are the antitoxins, bacteriolysins, opsonins, agglutinins and precipitins.

"Anti-substances may be arranged, as has been done by Ehrlich, into three main groups. In the first group, the anti-substance simply combines with the antigen, without, so far as we know, producing any change in it. The antitoxins are examples of this variety. In the second group, the anti-substance, in addition to combining with the antigen, produces some recognizable physical change in it; the precipitins and agglutinins may be mentioned as examples. In the third group, the anti-substance, after it has combined with the antigen, leads to the union of a third body called complement, alexine, or cytase, which is present in normal serum. As a result of the union of the three substances, a dissolving or digestive action is often to be observed. This is the mode of action of the anti-substances in the case of a hemolytic or bacteriolytic serum. So far as bacterial immunity is concerned the antiserum exerts its action either on the toxin or on the bacterium itself; that is, its action is either antitoxic or antibacterial." (*Encyclopædia Britannica.*)

3. *Agglutination* is the property possessed by the blood or blood serum of animals (and men) whereby, after an attack of an infective disease, the blood causes "clumping" of the infective agent in liquid cultures to which the serum is added. It is particularly noticeable in the case of typhoid fever.

4. To *prove that bacteria cause disease* it is essential: (1) That the microorganism be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal. These are called the rules or postulates of Koch.

### PRACTICE OF MEDICINE.

1. *Pallor* is a mere symptom, consisting of a whitish or ashen appearance. *Anemia* is a disease characterized by a diminution in the number of red corpuscles. *Chlorosis* is a disease characterized by a diminution in the quantity of hemoglobin.

2. *Vesicular breathing* is the breathing heard over the lungs in a state of health. *Bronchial breathing* is the breathing heard over the trachea and in the region of the seventh cervical spine in a state of health; and over areas of consolidation, in disease.

3.

| INTESTINAL COLIC. | BILIARY COLIC. | RENAL COLIC. |
|---|---|---|
| 1. History of having eaten improper food. | 1. History of colic, vomiting, followed by icterus. | 1. History of previous attacks and passage of calculi. |
| 2. Pain chiefly in region of umbilicus. | 2. Pain in region of liver, radiating toward umbilicus and right scapula. | 2. Pain in region of affected kidney, radiating down thigh, often accompanied by retraction of testicle. |
| 3. Absence of rigor. | 3. Sweats and chills frequent. | 3. Rigors pronounced. |

(*Pocket Cyclopedia.*)

4. *In consolidation of lung tissue,* there will be: (1) Dullness on percussion; (2) increased vocal fremitus; (3) bronchophony, and (4) bronchial or harsh respiration.

5. "*Dry râles,* for the most part, are produced by the vibration of thick fluids which the air cannot break up and which therefore temporarily lessen the caliber of the bronchial tubes. When the narrowing exists in the smaller bronchial tubes the resulting sound is high-pitched or the râle is said to be sibilant or whistling; when the narrowing exists in the larger bronchial tubes the râle is low-pitched, more musical in character, or sonorous. Dry râles are particularly prone to be dislodged by coughing, and when they are uninfluenced by the acts of breathing and coughing they do not depend upon the presence of secretions but upon the narrowing of the air-tubes from the pressure of a spasmodic contraction of the air tubes."

"*Moist râles* are those produced by the air passing through thin fluids, such as mucus, blood, serum, or pus, during the respiratory movements. When the fluid exists in the smaller bronchial tubes the râles are termed small bubbling, mucous, or subcrepitant. When the fluid is in large bronchial tubes the râles are said to be large bubbling or mucous. Moist râles are not persistent but vary in intensity, and shift their position as the air drives the liquid which occasions them before it during violent attacks of coughing or after copious expectoration." (Hughes' *Practice of Medicine.*)

6. The following formulæ, by Winters, are from Edgar's *Obstetrics:*

For the second week. *Upper 2½ ounces from a quart of milk 16 hours after milking.* Cream, 2¾ ounces; milk-sugar, 1 ounce; lime-water, 2 ounces; filtered water, 10 ounces; quantity at each feeding, 1½ ounces. Ten feedings in 24 hours.

For the fourth to eighth week. *Upper 9 ounces from a quart of milk 16 hours after milking.* Milk-sugar, 2 ounces; lime-water, 4 ounces; filtered water, enough to make 1 quart; quantity at each feeding, 2½ ounces. Ten feeding in 24 hours.

For the ninth to twelfth week. *Upper 11 ounces from a quart of milk 16 hours after milking.* Milk-sugar, 1.9 ounces; lime-water, 4 ounces; filtered water, enough to make 1 quart; quantity at each feeding, 3 ounces. Eight feedings in 24 hours.

For the fourth month. *Upper 13 ounces from a quart of milk 16 hours after milking.* Milk-sugar, 1.8 ounces; lime-water, 4 ounces; filtered water, enough to make 1 quart; quantity at each feeding, 3 to 4 ounces. Seven feedings in 24 hours.

For the fifth and sixth months. *Upper 15 ounces from a quart of milk 16 hours after milking.* Milk-sugar, 1.7 ounces; lime-water, 4 ounces; filtered water, enough to make 1 quart; quantity at each feeding, 5 to 6 ounces. Six feedings in 24 hours.

For the seventh, eighth, and ninth months. *Upper 17 ounces from a quart of milk 16 hours after milking.* Milk-sugar, 1.4 ounces; lime-water, 4 ounces; filtered water, enough to make 1 quart.

For the tenth and eleventh months. *Upper 21 ounces from a quart of milk 16 hours after milking.* Milk-sugar, 1.1 ounces; lime-water, 4 ounces; filtered water, enough to make 1 quart.

7. *Variola:* The eruption usually appears first on the forehead and wrists, and on the third or fourth day; it is first macular, then papular, then vesicular, and finally pustular; it does not appear in successive crops; the spots are multilocular, and do not collapse on being punctured; the papule is hard and shotty, and does not disappear on stretching the skin. *Varicella:* The eruption usually ap-

pears first on the trunk, is evident on the first day, comes in successive crops, is not shotty, and disappears on stretching the skin; the spots are unilocular, and collapse on being punctured. *Scarlet fever:* Period of incubation, from a few hours to seven days. Stage of invasion, twenty-four hours. Character of eruption, a scarlet punctate rash, beginning on neck and chest, then covering face and body; desquamation is scaly or in flakes. The eruption is brighter, is on a red background, punctiform, and is more uniform; the temperature is higher, the pulse quicker; the tongue is of the "strawberry" type, the lymphatics in the neck may be swollen, and there is sore throat; Konlik's spots are absent. *Measles:* Period of incubation, ten to twelve days. Stage of invasion, four days. Character of eruption, small, dark red papules with crescentic borders, beginning on face and rapidly spreading over the entire body; desquamation is branny. The eruption is darker, less uniform, more shotty; the temperature is lower, pulse slower, the tongue is not of the "strawberry" type; coryza, coughing, and sneezing may be present; Koplik's spots are present.

8. *X-rays* are "the ethereal waves or pulsations emitted from a Crookes' tube, excited by the bombardment of the anode target with the cathode rays; they are believed to be a series of short pulsations following each other at irregular intervals." (Stedman.) They are used to aid in the diagnosis of fractures, calculi, presence of foreign bodies, arthritis, aneurysms, consolidations; also as a therapeutic agent. The *dangers* are burns, dermatitis, and sterility. The rays should be used by experts only, the utmost care should be exercised, and all protection (such as lead masks, etc.) utilized.

9. A systolic murmur heard at the ensiform cartilage may denote tricuspid regurgitation.

10. *An analysis of urine* includes: Estimation of total quantity passed in twenty-four hours, color, odor, reaction, specific gravity, total solids (by aid of Haeser's coefficient). Then examine for albumin by Heller's test, or by heat and nitric acid; then for glucose, by Moore's test, with potassium hydroxide, or with Fehling's solution, which contains copper sulphate, sodium hydroxide, and Rochelle salt; then for blood with potassium hydroxide solution; then for bile pigments by Gmelin's test; then for indican, using lead acetate, hydrochloric acid, ferric chloride, and chloroform. Then quanitatively for urea, using solution of sodium hypobromite; for chlorides, with silver nitrate solution; for sulphates, with barium chloride solution. Microscopical examination should then be made for casts, cylindroids, crystals, and tubercle bacilli.

OBSTETRICS.

1. Labor is divided into three stages: The *first stage* begins with the commencement of labor, and ends with the complete dilatation of the os uteri. The *second stage* begins with the complete dilatation of the os uteri, and ends with the birth of the child. The *third stage* immediately follows the second, and ends with the expulsion of the placenta and the beginning contraction of the uterus.

"*During the third stage.* 5i of fluidextract of ergot is administered and irritation of the uterus by friction through the abdominal wall is practised for 10 or 15 minutes. If the placenta is not expelled by this time the uterus is firmly grasped between the thumb and 4 fingers and compressed. Firm pressure is then made from above downward and backward in the direction of the pelvic canal. This usually causes delivery of the placenta. A vulvar pad of salicylated cotton and carbolized gauze and an abdominal pad and binder are then applied." (*Pocket Cyclopedia.*)

2. ACUTE MASTITIS. "*Symptoms:* The breast is swollen, painful, and tender, and, owing to the soreness of the nipple, the breast is not relieved of its secretion, so that it is distended. If suppuration follows, redness, edema, and fluctuation occur over the site of the abscess. The abscess may be—(1) supramammary, the pus lying between the skin and breast; (2) intramammary, or the common form, in which the pus is in the substance of the breast; (3) submammary, which is beneath the breast, and may spread from the deep lobules, but more frequently is due to disease of the underlying ribs. *Treatment,* before suppuration occurs, consists in supporting the breast with a bandage, emptying the gland regularly with a breast-pump, and applying a belladonna plaster over the gland to stop the secretion and allay the pain. When pus is present an incision should be made at once, or the abscess may burrow extensively and riddle the breast. The incision should be made in a line radiating from the nipple, so as not to cut the ducts; it should be free, and all pockets opened up with the finger. Then a large drainage-tube is inserted and shortened daily, as the wound heals by gravitation. If necessary, several incisions are made."

CHRONIC MASTITIS. "*Symptoms:* There may or may not be pain in the breast, but a number of small scattered lumps are usually found. Both breasts are usually affected. The skin is seldom attached over the lumps, but the lymphatic glands may be slightly enlarged. Distinct cysts may be felt in some cases. The disease slowly progresses, and ends in atrophy of the breast or general cystic formation. It is said that cancer is likely to follow interstitial mastitis. *Treatment* consists in supporting the breast and applying a belladonna plaster. Single cysts should be removed, but if the whole gland is cystic complete removal is better." (*Aids to Surgery.*)

3. *Indications for the use of forceps* are: "1. *Forces at fault:* Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. 2. *Passages at fault:* Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. 3. *Passengers at fault:* A.—Dystocia due to (*a*) occipito-posterior, (*b*) mento-anterior face, (*c*) breech arrested in cavity. B.—Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). 4. *Accidental complications:* Hemorrhage; prolapsus funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both." (From Jewett's *Practice of Obstetrics.*)

Forceps should not be used when the os is undilated, when the head is not engaged, except in placenta prævia, when the membranes are unruptured, when the disproportion between the child's head and the parturient canal is too great, or in impossible positions and presentations. Before applying the instruments they should be sterilized, preferably by boiling; and the patient anesthetized and placed in the lithotomy position. Two fingers of the right hand are introduced into the vagina; the left blade of the forceps is then held almost perpendicularly by the left hand, with the tip of the blade opposite the vulva; the tip is introduced into the vagina, passed along the floor toward the sacrum. The blade is rotated outward in its long axis in order to escape the promontory of the sacrum. The right blade is introduced in a similar manner. To facilitate locking, one of the blades must be rotated forward. If the head occupies the right oblique diameter, as in L. O. A and R. O. P. positions, the right blade must be rotated; if it occupies the left oblique diameter, the left blade must be rotated. Traction is made in the direction of the pelvic axis until the perineum is well distended. The perineum is then protected by one hand, while the face is swept over it by an upward movement of the forceps. In posterior positions it is necessary to remove the instruments after the head is drawn down to the pelvic floor; after anterior rotation is secured they may be reapplied. If the occiput rotates into the hollow of the sacrum the hands should be depressed as the face is swept out under the symphysis pubis. (*Pocket Cyclopedia.*)

4. The *indications for podalic version* are: (1) Transverse presentations; (2) placenta prævia; (3) malpresentation of the head; (4) simple flattened pelvis, and in minor degrees of pelvic contraction; (5) prolapsed funis; (6) sudden death of the mother; and (7) any case where speedy delivery is imperative.

*Braxton Hicks' method of bipolar (podalic) version:* "The patient should be placed in the lithotomy position and be deeply anesthetized, to relax the parts and allow the whole hand to be pushed into the vagina. The external hand is placed over the breech, so as to depress it; while the presenting part is tilted away from the brim by the fingers inserted through the os. The fingers press against the front of the child and flexion is lessened. When the head is out of the brim the external hand can be used to elevate it towards the fundus. As soon as a knee or foot comes within reach of the internal fingers, it should be caught and brought into the brim, the membrane being ruptured at the same time. If the os is fully dilated, delivery may be finished at once, as in an ordinary breech case; but if the os is only partially dilated, it must be left to nature, to allow of dilatation." (Jardine's *Delayed and Complicated Labor.*)

5. *Placenta prævia* is the condition in which the placenta is attached in the lower uterine segment, and may be near or over (partially or completely) the internal os. *Symptoms:* Sudden hemorrhage, accompanied by syncope, vertigo, restlessness, and feeble pulse. *Treatment:* Stop the hemorrhage by a vaginal tampon; this must be tight and thorough. *Accouchement forcé* is indicated; this consists of dilatation of cervix, version, and immediate extraction of the child.

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## Original Articles.

### CERTAIN ELEMENTARY CONCEPTS IN EDUCATION APPLIED TO MEDICINE.*

BY J. GEORGE ADAMI, M.D., SCD., LL.D., F.R.S.,

MONTREAL.

WHEN your president honored me with an invitation to deliver the annual oration before your Society, and expressed the wish that I should take up an educational topic, I found on looking back that I had given expression to opinions upon divers aspects of general and medical education before various bodies—medical students, graduating nurses, educational experts, and even that distinctively Canadian institution, a "Canadian Club," but never before a general assembly of members of our profession such as this, never before the body which beyond all others is most vitally interested in the subject. I have arrived at very definite, not to say unorthodox conclusions, and now at the risk that some here present may have happened upon reports of those previous addresses—though I do not think that the chance is other than remote—and may recognize in what I say to-day very audible echoes of these previous pronouncements, it has struck me that it would be serviceable to put before you the opinions of an outsider upon modern educational methods, in vogue in this country, and more particularly in this State. It may be that as an outsider, of necessity not so intimately informed as are the inhabitants of the State, my impressions in regard to certain matters may be wholly wrong. I doubt, however, whether my knowledge of conditions be found very erroneous and that, because we in Canada are terrible copyists of Statesian fashions: we belong, after all, to the same race, and have before us the same difficulties. I trust, therefore, gentlemen, that you will not regard me as a Balaam and —to continue the parable—I trust that no one here present and so regarding me will turn balky. But, speaking seriously, it would pain me did anyone for a moment think that I ill repaid your hospitality by criticising educational conditions in this country. I can only say that I have been permitted to enter into the medical life of the States to such an extent that I have been made to regard myself as one of yourselves.

I want in the first place to put before you sundry basal considerations regarding education in general, to apply them to medical education, and then more particularly to the requirements of the State of New York as determined by that august body the Regents. It is because that august body lays such stress upon preliminary education and fences admission to the study of our subject with a series of such cast-iron requirements that I have to make so elementary a start. And as these requirements are based upon the primary and secondary school system of the State of New York, I have therefore the temerity to enquire into the value of that system. Wherefore, if you like so to consider it, of malice prepense, I may shock some of you. It is easy, in these days of general well-being, to hold with Candide that all's for the best in the best of all possible worlds; that the system of education which has been elaborated in this great country, the system under which most here present have been brought up, is the system best adapted to the genius of your people: that there is no nobler system than the public school system of the United States, and coming nearer home, that there is no more perfect system of preparation, education, and examination in medicine than that devised and demanded in their wisdom by those grave and reverend seniors, the Regents of this State. Permit me to give you to think.

To begin with, what is the main object of State-controlled education? Is it to ensure that every citizen is provided with a certain common or minimum stock of information upon various subjects, or is it, on the other hand, to ensure successive generations of citizens capable of serving the State? This last possibility may be a new thought to some here present, but on consideration I think you must agree with me that this, and not the benefit of the individual, is the primary object. However much it may matter to the individual to be an efficient scholar, it matters little or nothing to the State that a given proportion of its boys and girls know the Latin irregular verbs, or only so much as it affords evidence that these have gained the habit of application; it matters everything that during the labile years their characters be developed and brought out, that the State be provided with capable citizens. *Instruction,* the pumping-in process, is of use only so far as it provides a basis of data for *education,* the drawing out of what is best in the individual. And I would bring two indictments against the public school teaching of the State, and doing this I indict equally the teaching of other States, and of the Canadian provinces, including my own benighted province of Quebec, namely, that there is too much instruction, too little education, with the resultant danger of the production of a race that is thoughtless and characterless.

In the words of one who has done very much to raise the standard of medical education on this continent, who may indeed be regarded as today the leader in the movement: "Where you have a weak secondary school system, you cannot expect to improve the schools above it until you have made the secondary school all it ought to be." We university professors have presenting themselves before us what I suppose are the pick of the products of the public school system. What do we find? It is a painful admission, but the majority when they

*Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

reach us are fair poll-parrots; they can pump out what has been pumped in; but it is distinctly the minority, and let me say, a small one at that, who can utilize their frontal lobes and put two and two together. Now it is right that training should begin with respect for authority, that the pupil should begin with a respect for the written word, that he should look up to his pastors and masters and accept their statements as true and sufficient. The instilling of respect for authority is the first step in education. But this does not mean that the pupil is only to memorize and not to think; that by the time he is seventeen or eighteen he is still to be fearful of testing conclusions for himself; that he is not to be drawn to use his brain and make his own conclusions. And yet I am credibly informed that so essential a part of the present system have become the methods of the University of Cairo, that these extend to certain American colleges and universities, and in them it is forbidden to put examination questions which, for a correct answer, do not immediately refer to the *ipsissima verba* of the lecture and the recommended text book, but require some correlation of the data afforded in the course, some application of thought and not merely of memory. Now for us medical men, each case, as we know, possesses factors which make it a different problem from all that have gone before; each case to be correctly diagnosed and treated requires thought. I may be wrong, but it seems to me that the youth should be trained to think before reaching the medical school. I feel this very strongly: I feel that the secondary education is seriously defective in permitting such lack of thought; that the system of examination is wrong which makes entrance to medicine depend purely upon knowledge of facts, which is based wholly upon the capacity for the recollection of unrelated statements, which does not by an essay, or still better, by an oral examination, test the intelligence as distinct from the memorizing power of the candidate. Naturally what appeals to examining boards as most appropriate is that system of examination which can be carried out most simply and most economically; and if a board, instead of employing expert and highly paid examiners, places the actual reading of examination papers in the hands of clerks who have no intimate knowledge of the subject of examination, but who automatically mark according to a schedule which is provided to them, it is evident, in the first place, that those questions only can be set which afford a stereotyped answer and call for no thoughtful weighing of *pros* and *cons*, no evidence of the power to balance evidence, and, in the second place, that a heavy penalty is by this method exacted against teachers who in their classes encourage anything beyond exact poll-parrot memorizing. If this be the case—and I sincerely hope that it is not even partially true—there is likely to be opposition to the suggestion that there be appointed examiners who are truly examiners, experts in their respective subjects, men capable of judging qualitatively as well as quantitatively.

He who studies the Public Health Law of the State of New York as it refers to medical education and the regulations for the admission to medical practice, cannot but be impressed by the rigid rules laid down in regard to preliminary training. Thus, according to Section 165, the candidate must submit evidence that prior to the beginning of his second year of medical education he has acquired that "general education required preliminary to receiving the Degree of Bachelor or Doctor of Medicine in (the) State." In other words, no university in the State can determine for itself whether a candidate is of proper standing, not for the State license, but for its own degrees in medicine. That is determined for it by the Regents, and is dependent primarily upon the nature of the education the candidate has received prior to entering the medical school. If a student has graduated in arts in another state or country, such graduation is only accepted if from a registered college, and then on the conditions that "such college course shall have included not less than the minimum college requirements prescribed by the Regents for such admission to advanced study." If he possess a diploma or license conferring full right to practise in some foreign country, that diploma or license is not sufficient, he must also submit evidence that "he is a graduate in arts of a registered college in that other country, or that he has satisfactorily completed a full course in a registered academy or high school" (registered, that is, by the Regents); "or had a preliminary education accepted by the Regents as fully equivalent." Then there are regulations providing for the conditional matriculation of a student deficient in not more than one year's academic work of 15 counts of the preliminary education requirements, provided that the deficiency is filed at the Regents' office within three months after matriculation; provided, also, that on and after January 1, 1913, such conditional matriculation shall not be permitted. At the present moment, therefore, no student can enter medicine unless his preliminary training conforms with the requirements of the Regents to the uttermost jot and tittle.

The preliminary requirement determining admission to registered medical schools is the completion of an approved four-year high school course or its equivalent. The official evidence of the fulfilment of this requirement may be secured in various ways: By certificate to this effect from an approved secondary school; by passing the Regents' examination in the schools; by presenting evidences of the successful completion of one full year's work in an approved college or university, or of work in another state or country equivalent to this four-year course in a New York secondary school; by presenting evidence from a registered school of theology, law, dentistry, pharmacy, or veterinary medicine of the completion of work equivalent to one or more year's work in an approved secondary school, together with sufficient additional credits to make the full equivalent of a four-year course in an approved high school; or if by any one of these means the candidate is unable to enter, then he must pass the Regents' examination, but doing this must gain a rating of 75 *per cent.* in each of *nine* subjects, namely, in English, algebra, plane geometry; two out of three following subjects, chemistry, physics, and biology; one second year foreign language, ancient history with civics, and two or more (15 counts) of a long series of electives—English, ancient and modern languages, advanced mathematics, history, geography, economics, bookkeeping, shorthand, drawing.

As to what constitutes an approved secondary course, the Regents are thoughtful enough to lay down a time table for each of the four years, giving the number of periods which they regard as essential in each subject, even down to manual training and vocal music. As I say, it is most thoughtful of them. For a medical school to be approved by the Regents, all matriculants must afford evi-

dence of a general preliminary education equivalent to at least a four-year high school course after eight years of preliminary education. Any medical school that matriculates a student who has not completely complied with the admission requirements must be forthwith excluded from the list of approved schools. "A medical degree from a registered institution does not meet with the educational requirements for admission to the licensing examination; evidence of preliminary education as well as evidences of required attendance at a registered medical school are essentials."

I have recited to you in detail all these bald regulations of the Regents that I may impress upon you what is evidently the main premiss of the Regents, namely, that the requisite standard of medical education can only be attained by rigidly fixing the minimum preliminary training of the student; however distinguished has been his record as a medical student, unless that preliminary standard has been attained, it is hopeless for any one to seek to practise medicine in this State, save under conditions that are tantamount to exclusion. If the matriculation examination of a university outside the State of New York does not in the opinion of the Regents exactly conform with that demanded by them, that university cannot be registered. If that university influenced by different ideas and different traditions has evolved a somewhat different matriculation standard and medical curriculum from those regarded as right and fitting by the Regents of the State of New York, either it must humbly submit to the dictates of that august body, or must incur the penalty of seeing its graduates prevented in perpetuity from practising in the State, and that however thorough their medical education, however distinguished their Alma Mater, however excellent their degree; their preliminary education requirement was not such as to satisfy the fastidious tastes of the Regents.

Surely there is "something rotten in the State of" —New York and its educational system that this should be, that the Regents must thus force all the universities of this continent to bow to the graven image which they have erected. Of course, I know the basic reason for this conduct: that the education afforded in certain medical schools in the State has, in the past, been deplorable, that these schools have to be brought into line, that in the past every illiterate Tom, Dick, and Harry could enter as a medical student; that this had to be stopped; that to prevent any backsliding on the part of these weak schools the regulations have to be of the sternest and there must not be even the appearance of making concessions to universities outside the State, however admirable the courses they provide and however great their reputation, lest, doing so, precedents and loopholes be afforded to these weaker brethren for evasion of the regulations, and opportunity for their alumni to creep or intrude or climb into the fold.

This, it will be observed, is an argument of expediency, not of right. The Regents will not pretend to say that theirs is the only correct ideal, that they do well in hampering other universities outside the state in their endeavors to evolve a sound course of medical education along lines which in important respects differ from the New York regulations, or do they? and is there a belief on this continent as indicated by their action, and to some extent, I think, by the first Carnegie report, that it is possible to plot out the whole working years of the would-be practitioner from the age of sixteen until his graduation—to construct an ideal time table, any departure from which is an intolerable step from grace. Such hidebound rules are, to say the least, unscientific and bound to fail. Education is a progressive science; while what is admirable in one community may be disastrous in another. Let me give you an example. The quality of the instruction in elementary science in the secondary schools is still a matter of debate. I think all will agree that those secondary schools can usefully afford instruction in the very elements of science, the student, for instance, should arrive at the medical college knowing of the existence of elements, and the nature of a chemical reaction. I have serious doubts whether, save in the rarest cases, the teaching of the secondary schools is according to the right ideals of education in elementary science. To quote my colleague, Dr. Ruttan, "You will never acquire a scientific training from a mere literary acquaintance with chemical facts and theories; in this way you will acquire only scientific information, an altogether different thing." Even if laboratory courses are afforded, the method of following an accredited text book has practically no educational value. What is needed is that each experiment in the laboratory is made an exercise in rigid observation, and in the solving of problems, the answer to those problems being observed and recorded by the student, and not discovered from the text book, or announced by the teacher. Obviously he will be in a better position to grasp the fundamentals of chemistry, physics, and biology in the laboratories of the medical school or university under university teachers than in the too often imperfect surroundings of the high school. In one hour under these more favorable conditions, the student should acquire more chemical and biological knowledge than in five spent in the high school. But the grave Regents, with their vertebral ankylosis, think otherwise: they demand the same number of periods wherever and whenever the instruction be gained. They penalize the medical school which seeks to afford the more thorough course.

Instinctively, when it is placed before you in all its baldness, you realize that there is something inherently defective in these regulations, and if I may place my finger upon the weak spot it is this: that the fundamental conception upon which the whole superstructure of the primary, secondary, and university training is sought to be built is false. The whole system, you will observe, is based upon "periods" and "counts," upon the *quantity* and not upon the *quality* of the teaching. The quality is of secondary importance. No matter how excellent the training to which the applicant for a license has been subjected, if he cannot afford certificates that he has undergone so many periods, so many hours of instruction, equivalent to eight years' primary schooling and four years' secondary, he cannot enter into the State of New York. The outward and visible sign of the inward and spiritual grace is not intelligence but "counts." The machine has become of higher value than its product.

Do you see what this aspect of affairs signifies, not merely for our profession, but for the upbringing of all the inhabitants of the State? And here let me again emphasize that I am using the State of New York as a text, not as the one and only malefactor. This precise laying out of every hour in every public school throughout the state means intellectual perdition. It means, if logically fol-

lowed out, that at the present hour in every secondary school throughout the State every boy and every girl who is in, say, the second class, is having identically the same facts doled out to them. It means that at the conclusion of the school course every individual has one common set of ideas. If there be individuality among the scholars, the State has done nothing to foster, but on the contrary everything to discourage it. It means that we are drifting to a Chinese civilization, with official arrest of all initiative. This may be gloriously socialistic, but does not make for the progressive development of the people. Where all the members of a community have a common dead level of training, they manifest the same character, or, more accurately become manifestly characterless.

It means that with this emphasis upon the necessity of completing so many periods in each subject, teachers and taught are alike discouraged from effort and ambition. I believe that all who have inquired into the subject will absolutely uphold me when I lay down that a reasonably intelligent youth can easily master the subjects demanded in the four years' secondary school course in three years; some tell me, in two. But no, he must not do so; he must remain so many months in this class, so many in that—that he may complete the required number of periods; he must be kept back so that he does not advance beyond the others of his year; he must acquire habits of mental sloth. And this all because of this precious belief of the powers that be in the virtues of a pernicious system. The minimum of encouragement is given to the teacher to enter into the highest joy of teaching, that namely, of stimulating and pressing forward the promising scholar.

It means, also, gentlemen, the domination of the female teacher. Such precisely devised system is exactly suited to her inherent genius, it is wholly alien to the genius of the ordinary male; I do not here refer to those who evolved it; they are extraordinary.

Do not regard me as digressing, if as a *vox clamans in deserto,* I proclaim my opinion of the female teacher as an educator of male youth. Now that I am embarked upon a criticism of secondary education it is essential that I refer to this other weakness that is overwhelming the continent. Once again we revert to the main thesis that the pedagogues who have developed and are still developing our system appear to be absolutely blind as to the all-important distinction between instruction and education. Even so distinguished and well-meaning a body as the Carnegie Foundation in that report upon medical education to which I have already referred, was tarred with the same brush. In criticising and laying down what they regarded as the elements of a good medical education, not one word was said by the authors of that report regarding anything beyond the acquirement of a knowledge of medical facts and technique. It is tacitly assumed that this is everything. And yet you, gentlemen, who are in practise know perfectly well that in life such knowledge does not count fifty per cent. It is the man within the medical shell that is all important. What J. Pierpont Morgan said but a few weeks before his death regarding business credit is equally true of professional reputation and success; it is character that counts, character that makes the man. What a man teaches is not half the game; how he teaches it counts, I would almost say, everything. Of greater value than mere facts is the attitude of the medical teacher towards life, his method of approach toward the patient, all those traits of manner, expressive of the inner being, which at the most receptive period of life appeal to the student, are imitated and become in turn a part of his being. Of prime value also is the university education outside the classroom, the laboratory, and the ward; so valuable is this that the medical school must be an integral and intimate part of a university of several faculties, in order that the student may mingle with men of other ideals, other habits of thought and modes of life. Your medical man to be of service to this kind must have an education in, and must know humanity. Unfortunately all these aspects of his training were completely ignored in that most important and otherwise most stimulating report.

But this education is the man's duty to his neighbor, this training in service to others must begin in the secondary school—aye, in the primary school. Heaven save the youth who between the years of twelve and eighteen is in the hands of women—women only—as teachers, who is devoid of practical training in manliness. It is the right and proper thing that the early teaching of the little boy should be in the hands of women; it is well that there be a gradual tansition from the mother's influence at home to the rougher world outside; but there comes the time when the boy begins to "feel his oats," when the budding youth fast becomes restive, when if the boy is to develop aright a masculine hand is needed at the reins. Of course, there are "sissies" and boys of phlegmatic temperament who remain eminently docile under feminine guidance; your boy with any vigor and initiative, the boy who is going to do something in the world, must be under a man. For otherwise he soon recognizes that he is too strong for his teacher, he sees that she is powerless to compel him, recognizes that owing to her physical weakness she has to appeal rather than to compel, that she has to gain her ends by oblique methods—by persuasion and not by command. He learns thus to get around difficulties without facing them manfully; does as he pleases heedless of others; becomes a selfish individualist. You may say that this is too strong a statement. I only know that a few months ago I was discussing this very matter with a remarkable woman, one whom I may without exaggeration describe as the foremost woman educationalist in Canada. "Yes," she said, "you are right. Only last week a bright school teacher admitted to me that the one means she had discovered whereby she could manage hulking youths was by indulging in a mild flirtation with them." The aboriginal woman's way, but, oh, God; the miserableness of it all! Is that how we want our boys brought up?

I feel in this relationship most heartily in sympathy with a colleague of mine—incidentally a Presbyterian minister—though I doubt if in that audience I would have had his noble temerity. It was a few weeks ago, at a meeting in support of our University Settlement, and my friend was called upon to address the assembly, a large one, composed almost entirely of the gentler sex, there being but three or four of us men present. "And don't get into your heads," said he, "that you are going to run this settlement, that you are going to reform these street urchins and potential hooligans by 'lev' —'Lev!' Bah! If you try that they will fool you every time. No! It must be by manly guidance and by manly methods, even including an unhesitating knockdown blow when need arises. It's the manly man they will look up to, and by whom they will

most surely be influenced. They will not 'lev' him, they will worship him. I hold it to be the supreme argument for design in this universe that the boy is so constituted that the greatest number of nerve endings of the greatest number of nerves find themselves in that portion of his anatomy where knowledge can most neatly and effectually be instilled and that with absolutely no harm to the rest of the economy."

I freely admit—we all admit—that in those qualities which are the common property of both sexes, the woman is demonstrably man's superior; but in the matter of enforcing authority on the growing youth of the male denomination she is hopelessly and helplessly behind. To the present exaltation of feminine and lowering of masculine influence in the home and in the school I would ascribe both the growing increase in juvenile crime, and the appalling increase in domestic misery in this country. Boys and girls spoiled in the training, undisciplined, not to say encouraged to carry out their own wishes, become immoral individualists, cannot bear with patience the necessary give and take of married life, and the divorce court is the result.

Once again let me repeat that education is much more than the instilling of facts into the brain. It is the whole proper development of the individual. In the playground, even more than within the school, the masculine influence is needed, that the boy be instructed to play not for himself, his own advantage, and his own glory, but before all other considerations to act as one of a team, for the good of that team and for the honor of the school. How can the female teacher participate and direct the game of football, of hockey or baseball? How can she practically instil these lessons of obedience and willing subordination of the individual for the common good which constitute the essence of all games worth the name, which constitute the essence of civic virtue and public spirit. It is not in her. Better an unlettered drill sergeant. The playground teaches civics better than any number of periods in class, and the master is needed to enthuse the right spirit. You know how things are going in this State; the situation is notorious. But it is as bad, and worse, elsewhere. Last year in the Protestant Normal School of our own Province of Quebec out of an entry of 150 prospective elementary teachers there were just three males.

But, it may be urged, what is the use of all this destructive criticism? Well, gentlemen, I freely admit that destructive criticism *per se* is worse than useless if there be nothing constructive afforded. I believe that these defects are one and all capable of a remedy. And to begin at the beginning, and take the last first, I would urge that it is in the power of the State to obtain the male teachers so absolutely essential for the training of male youth. By all means let female teachers be given a proper wage, but surely the logic of stern facts must lead us all to realize that under present conditions there is little to attract men into the public school teaching profession, and must equally convince us that for the good of our youths, men have to be attracted; nay, must convince us that, if necessary, in order to attract them, greater inducements must be afforded to them than to their sisters. That profession to-day is a blind alley. No man with any initiative, with any self-respect will undertake the automatic duties laid down by the Regents and the educational departments of the States of this Union, with every hour's work scheduled, with its precise limitations to the scope of certain text books, with its painful lack of encouragement of higher effort. The cast-iron drudgery and servitude of it all, and its highest reward the very moderate income and status of the principal of a secondary school! Make the profession not a blind alley, but an open highway! The State has appointed for the taught a graded course from the primary school through the secondary to the university. Why not also for the teacher I would suggest that, in the first place, promising youths be tempted to undertake teaching in the primary schools on the condition that two years thus spent in the service of the State shall entitle the teacher to one year's free tuition at the State university, that each subsequent year of teaching shall entitle him to a year's free university education. Nay, more, the State might well establish a residence at the State university where such State servants might board at a minimum cost. The young teacher should be free to choose his university course in such a way that he might undertake four or five years of State service as a means of putting himself through any one of the faculties and entering any one of the professions. If, on the other hand, he determined to make teaching his vocation, then after gaining his degree in arts and, earlier or coincidently, promotion from a primary to a secondary school appointment, it should be imperative that every few years, as in the army medical service, the teacher return to headquarters, in this case to the university, for advanced work along some special line, he becoming for the time being a junior member of the university staff. Every encouragement should be given to the good teacher to become an expert in some one or other department of learning, and it is but right and proper that he be given the hope and the opportunity to secure eventually a permanent university post in the subject to which he has specially devoted himself. He should be encouraged to realize that it is open to him to reach the top of the educational tree.

Next, as to the curriculum, and here my recommendations apply both to the schools and to the medical course, I would here repeat what I said two years ago at Chicago, that the finest national education known to me—no longer, alas, in existence, for the growing wave of State socialism has changed everything—was that established in Scotland by the dour but powerful reformer, John Knox. There were in it no school-marms, but every village, or more accurately every parish, had its school house and its dominie, wherever possible a university graduate, even if only a "stickit minister." There were in it no State-regulated schedules of hours, but the dominie was expected to bring all his scholars up to a sound familiarity with the "three R's" and was stimulated to advance the more promising pupils up to university standing. To matriculate it was necessary that those scholars had a wide teaching, but beyond this the dominie gained his great triumph by securing for those scholars university prizes and bursaries. If the master was a classical scholar, then the school excelled in classics, if a mathematician, in mathematics, if a Hebraist, then, even, in Hebrew. Each school, thus, was distinctive, and the result was not a tame level of commonplace knowledge, but the production of scholars of varied attainments and, what is more, of character. For its size no country in the world has during the last two centuries turned out more men of distinction in the

varied walks of life, more men of character, more leaders in the different departments of human endeavor than has Scotland, and this, I am convinced, is due to John Knox and his dominies. Demand, I would say, that every entrant to the university have a competent knowledge of a definite schedule of subjects, nay I would say, demand a higher standard than that at present in vogue, but do away with this deadening system of compulsory periods. Encourage the rapid promotion of the intelligent boy: encourage him to rise rapidly through the secondary school; give him the time to spend two years in the arts department of a university. For otherwise, if we carry out the programme as at present recommended, namely, eight years primary school, four years' secondary school, two years in arts, four years in the medical school, a year, or better, two years in hospital—the man by the time he enters practice has become so steeped in academic methods that he has lost all the elasticity of youth, is incapable of adaptation to the wear and tear of practical life; brilliant and accomplished as he may be as a student, he owes to something in himself beyond his training if he is not a failure as a general practitioner.

It is a matter well worthy of debate, whether in place of a matriculation examination on the part of the universities, there should not be a "leaving" or "Abiturient" school examination controlled by the State, an examination which youths should be invited to undertake, not when they reach a particular age, or when they have accomplished a given number of periods, but when they have gained the requisite knowledge. Such an examination would afford a standard test of the teaching afforded by the secondary schools throughout the State, a standard to which they should raise themselves, and certainly, as I have already noted, it should include some test of the candidate's intelligence as distinct from his memorizing ability. Let me sum up here as regards school and university training, that it is contrary to common sense to appraise the tree by the amount of manure with which its roots have been dressed and the number of times it has been watered: it is rather more usual as it is more sane, to estimate its value by the crop it produces. "By their fruits shall ye know them." Indeed I believe that those of you who are arboriculturists will confirm the statement that too rich a soil, too abundant manure and excessive irrigation, instead of giving a good crop, have the opposite effect. Would that the Regents of the State took this to their hearts.

And so with the test of the fitness of the university graduate to practise. It is absolutely false to imagine that by a cast-iron curriculum and a written examination, and that alone, it is possible to assure and determine the quality of a candidate. What do we see as the result of this policy? Why this, that the products of night schools and other wretched so-called institutions of learning are admitted into the profession as readily as are the alumni of the highest and best schools on this continent—men whose preliminary scientific training has been a farce, who have learned their anatomy not from dissection, but from quiz compends, who have not been within the wards of a hospital, but at the very most have seen patients from the seats of an amphitheatre, men who to save their souls could not percuss a heart or recognize normal breath sounds through a stethoscope. You know, we all know, gentlemen, that these written State examinations, with papers set and passed upon by those who are not experts, with no adequate oral and practical examinations are wholly rotten. I have used this word before, I do not hesitate to use it again. I know that the Regents are seeking to remedy this state of affairs, but they have not gone far enough. But how is this to be corrected?

I am going to make a bold recommendation, but I am convinced that the time is ripe for it. This matter of medical education is no longer a State matter only; it is one of interstate concern. If a man of this State wishes to pursue his medical studies in one of the great universities outside the State, why penalize him in order to bring the weaker schools of this State up to a higher standard? If a man from another State seeks to increase the population of this, why be so mediæval, so chauvinistic as to erect unworthy barriers against his entrance? We are apt to run down the Old Country as unprogressive, but after more than twenty years upon this continent I am slowly coming to believe that there is an extraordinary amount of hard, common sense in many of its methods. These methods may not have been arrived at by pure logic—they never have!—but by compromise. Nevertheless they fit the case. It has not attained to the one portal system: we are just about to try that in Canada as an optional method, and now that we are endeavoring to put it into execution we realize its difficulties. It is at the least an interesting experiment. But there has been established for now many years a General Medical Council for the United Kingdom. That council registers all duly qualified medical men. And here is the significant fact: that council conducts no examinations. What it does is this: from time to time it sends to the various schools a small and select committee of two or three experts, men high in our profession. That committee reports upon the quality of the instruction provided at those schools: it is present at the examinations and reports upon their scope and efficiency, and according to the report given, so does the council as a body approve of the school, in which case its diploma is accepted as qualifying for registration, or disapprove of the school, in which case specific reasons are given, and the representatives of the school are afforded the opportunity to present their side of the case. Finally if the recommendations of the committee are supported by the council as a body, either the school has to modify its procedure forthwith in agreement with those recommendations, or it has to cease to exist. Certain common regulations are laid down as to length of curriculum, essential subjects for preliminary and professional training and so on, to which all schools must subscribe, but the final approval rests not upon quantity but upon quality of the education and examination afforded.

The time, it seems to me, is ripe for a similar procedure here in the United States, for the appointment of a Federal Medical Council, subsidized by the government at Washington, and formed of representatives from all the States, a council which should appoint well-known leaders of the profession to act as committees or assessors to visit, report upon and make recommendations regarding the efficiency and deficiencies of the individual medical schools of this continent, the expenses of such inquisitions to be met by the schools visited. The Carnegie Foundation has prepared the way, but we

need now, not a private but a national institution, an institution authorized not by the profession alone, by the American Medical Association, for example, but by the nation at large, which shall act authoritatively in these matters. I would say, let each State control and direct its own educational methods. We do not want, we must fight against, any dead level of sameness in procedure and outfit. But let the Federal assessors test the results and make sure that they reach the desired standard of quality. If this be asking too much at the present moment, at least the State might take action, might appoint committees of inquisition to inquire and report upon the quality of the instruction afforded and the examinations of the schools within its boundaries, and might accept the graduates of those schools without the present farce of an examination which does not educe the capacity of the examinee.

I shall be satisfied, gentlemen, if I have impressed upon you that education is something beyond mere instruction; that we are every whit as much interested in the quality of the secondary school education as in medical education proper; that both in secondary and medical education there must be more elasticity, more freedom allowed for the individual school to control its own development; that sameness means not perfection but intellectual death. I shall be satisfied indeed if I make you think over these matters. I have said, and am content, even if after me comes the deluge.

## THE PREVENTION AND CURE OF CANCER.

A PUBLIC ADDRESS.*

By PARKER SYMS, M.D.,

NEW YORK.

By cancer is meant a tumor or new growth which is made up of epithelial cells and which is malignant in its character. By malignant we mean that it has a tendency to grow continuously until it has destroyed life; also that it has a tendency to recur or redevelop when operated upon, and also that it has a tendency to become disseminated and thus to develop in other parts of the body. There are several forms of malignant tumors. In this address I shall confine myself entirely to a consideration of cancer in its various types and shall not speak of sarcoma, of which there are several varieties.

Cancer is such a terrible enemy to mankind that it is very fitting that we should devote our energies and thoughts to it as a problem, striving in every way to lessen its ravages. It is high time that the medical profession should have an awakening. This awakening should be very wide, for it behooves us to be very wide awake. And it is high time that the public should be aroused by the spreading of as much knowledge as can be helpful and not harmful. The only way in which we can combat cancer with our present limited knowledge is by an intelligent cooperation between the patient and the doctor, between the public and the medical profession. To this end it is of equal importance that there should be a further dissemination of knowledge, not only among the lay public but also throughout the medical profession at large.

The fact that the treatment of cancer has largely resulted in failure is often spoken of as a reproach to the medical profession. This is not the thing with which we should reproach ourselves if we are doing our best. But we have not been doing our best and certainly that is a great cause for reproach.

There has been a tremendous amount of research work by certain members of the medical profession. Most elaborate investigation, both in the form of study and in the form of experimentation, has been carried on. One could hardly conceive of the vast amount of untiring work that has been done in this field. It is not with lack of such work and effort that the medical profession is to be charged. What we must remedy is a lack of standardization among themselves, a lack in the average. There has been a lack of appreciation and comprehension of facts that have been fully demonstrated. The medical profession as a whole has not been employing in the practice of medicine important facts which have been demonstrated by the science of medicine. It does not do for a few doctors to know these open secrets. They must be the common property of all the members of the medical profession, for they must be used in everyday practice, and many of them must be known to the public as well. In this way only can we improve the results in our combat with this deadly enemy cancer. It is necessary that we should use all of our knowledge all of the time. It does not do to use part of it part of the time, and that is what we have been doing in the past.

The title of this address, "The Prevention and Cure of Cancer," is certainly an ambitious one, for we cannot prevent, nor can we cure all cancer. But it is not a presumptuous title, nor a preposterous theme, for we can prevent and we can cure a great deal of cancer. And by properly applying certain facts which we have at our command we can improve our results so that those obtained at present may be looked back upon as a sad instance of shortcoming and lack of common sense.

You are all familiar with the fight which has been made against tuberculosis. To my mind the real value of the modern attack on that deadly foe dates from the time when laymen entered the field. A tremendous impetus was imparted and a tremendous amount of good resulted from a brochure written, not by a doctor but by a layman. I refer to the article entitled "Consumption: The Great White Plague," written by Mr. Eugene Wood. At the time of its publication this article was widely disseminated and created a great deal of interest not only among the laity but also among medical men, and I believe that it and similar efforts have done much to arouse the medical profession and the public to the fight which has been so nobly carried on. By such writings we were taught to set aside many of our faulty methods of approaching the subject of tuberculosis. We were taught from the standpoint of the patient. We were taught for the first time that frankness and truthfulness could be employed in dealing with these unfortunate sufferers. This truthfulness became possible and proper because we could look upon tuberculosis with hopefulness and not with despair. When you can give a man a word of hope there is no reason why you should not tell him the truth.

Among the important facts which were brought out and dwelt upon with emphasis were: (1) Tuberculosis is communicable; (2) Tuberculosis is preventable; (3) Tuberculosis is curable. By neglect of these three facts and by ignoring these three facts how impossible would be the fight against tuberculosis. Think what has been accomplished

*Delivered at the annual meeting of the Medical Society of the State of New York at Rochester, April 29, 1913.

since we have had the hardihood to tell a patient that he has tuberculosis; to tell him that by lack of proper care he may transmit the disease to those around him; and to tell him that by careful application of the laws of health he may recover.

There is another phase of the tuberculosis campaign which must be taken advantage of in our fight against cancer; this is the fact that when we give certain knowledge to the public the public gives it back to the medical profession, in those parts of our ranks where it is most needed. I have seen a physician treating his wife who had pneumonia in a room with the window shut. He would not dare treat a woman in a tenement house that way. The tenement house population has been very thoroughly instructed as to the necessity of fresh air. The doctor's wife will learn this when she takes up settlement work and the doctor may learn it from his wife.

The medical profession has learned more about the treatment of tuberculosis since Mr. Wood and other laymen took up the subject than it learned in all the ages prior to that time. I do not mean that these gentlemen have discovered any facts that were not known to the science of medicine, but they have discovered—in the sense of uncovered—some most important facts which were not being employed generally in the practice of medicine.

The scientific investigation of cancer has been going on for many, many years, but so far this disease has withheld many secrets from us. In a scientific way we do not know much more about cancer to-day than we knew fifty years ago. We do not even know its real nature, we do not know its actual cause, we do not know whether it is produced by a bacterium or not. Most of the things which the scientific study of cancer has taught us have been of a negative nature. We have come to the conclusion:

That there is little, if any, reason to consider cancer as being hereditary.

That there is no evidence that cancer as occurring in man is a communicable disease.

That cancer does not produce an immunity as do some diseases.

Scientists have been able to transplant cancers from one animal to another, notably among mice, but these transplantations are not inoculations (as in the case of tuberculosis, for instance). By transplanting these cancers in successive generations of mice we do not produce a family of mice immune to such transplantations; nor do we produce mice immune to spontaneous development of cancer; also we cannot transplant cancers from one animal to another of a distinctly different species, *e.g.* we cannot transplant cancer from mice to guinea pigs, etc., but there have been successful transplantations among species which are nearly akin—as from dog to fox, from rabbit to hare.

The scientific study of cancer has shown us no new cure. Most of the knowledge we have concerning cancer has been gained by clinical observation.

It would not be profitable to expend too much time nor to dwell too long in contemplating or enumerating things we do not know; let us turn our thoughts to things we do know about cancer.

Cancer is not a growth of any extraneous substance or tissue within the body. It consists in a growth of cells which are perfectly natural to the body. These cells are either displaced or misplaced as to their situation and they are abnormal in their arrangement and relationship, one to the oher, but there is nothing abnormal that we can identify as a cancer cell.

We believe that cancer is very much on the increase for some reason or other, and we do not know what this reason is.

We know that cancer is at first a purely localized disease. We know that cancer has a tendency to spread by a natural growth and to develop in and through the lymphatic channels in its neighborhood, and through them to become disseminated throughout the body.

We know that complete removal of a cancer at the time when it is strictly localized and not disseminated will result in cure of that cancer.

We know that incomplete removal of a cancer with its outlying roots will not result in cure, but will result in continuance either at the original site or in some more or less remote part of the body.

We know that in its early stages cancer is localized, in its later stages it is more or less widespread. We know that with complete removal during the early stages or during its localized condition cancer is curable.

While we do not know the actual cause of cancer we do know something of the causation of cancer, for we know that cancer often does result from prolonged irritation, and we know that there are certain conditions which precede or which predispose to the development of cancer. These are known as the precancerous states, or precancerous stages. This is the most important knowledge we have concerning cancer, for by carefully acting upon such knowledge we can prevent, not cure, but prevent, a very large proportion of cancer.

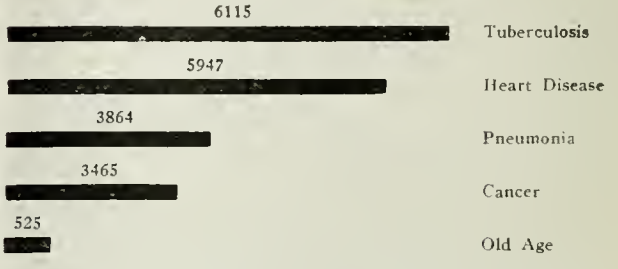
We know that there is no specific cure for cancer, there is no serum and there is no vaccine, and there is no chemical which will act as such.

But we know that a properly executed surgical operation performed at the time when the cancer is still localized will result in cure in a large proportion of cases. And we know that today this is the only reliable method of cure at our command. And we know that by remedying or removing certain abnormal conditions we can prevent a large amount of cancer. In the recognition and in the employment of these two established facts lie our hope. There is a chance for early cure; there is a chance for prevention of this dreadful disease.

Let us pursue our consideration of this subject under several heads.

Diagram Showing Relative Importance of Cancer As a Cause of Deaths In New York City In 1911.

(Between the ages of 30 and 75 years.)




Let us first consider the prevalence of cancer as compared with several other diseases. Then let us touch upon the diagnosis of cancer in certain situations of the body. Then let us consider briefly the relative curability of cancer of certain organs.

Let us give most of our thoughts, however, to the recognition and to the cure of the predisposing causes of cancer, namely, to the precancerous states, and then let us touch briefly upon what has been done for the practical solving of the cancer problem and what further may be done in the way of a successful anti-cancer campaign.

I shall not enter into an elaborate discussion of statistics concerning the prevalence of cancer, but I wish to strongly emphasize the fact that cancer is a very prevalent disease, and that it reaps an enormous harvest of victims every year. Nearly every one who writes upon this subject is agreed that cancer is greatly on the increase. Some claim that cancer is not on the increase, but that it appears to be so because our more recent statistics are based upon a more accurate knowledge and upon a more accurate means of making diagnosis, and that, therefore, we are charging to cancer today numbers of deaths which would have been charged to some other cause during the years when less accuracy was employed. I have made a careful study of many statistical tables and I must say that my mind is in doubt as to whether cancer is really on the increase or not. There is one thing certain, it is not on the decrease, and we have enough of it to make us recognize it as one of the most terrible of scourges. Unfortunately our national and state statistics are of very little value today; we need a national department of health. And we must welcome the time when we have such a department and when we can have thoroughly reliable and intelligent statistics. The analytical study of such statistics is of great value and forms a very important basis for an intelligent comprehension for such a question as to the cancer problem.

I shall set forth simply a few facts which may be gathered from such statistics which we have at hand. Cancer is not a disease of youth; it is exceptional before the twentieth year; it is rare between the twentieth and the thirtieth year. There is a definitely recognized cancerous period of life, namely, from the thirtieth to the seventy-fifth year, the largest number of cases occurring between the forty-fifth and the sixty-fifth year.

TABLE OF DEATHS TAKEN FROM STATISTICS OF DEPARTMENT OF HEALTH, NEW YORK CITY

(Deaths between the ages of 30 to 75 years)

| 1910 | |
|---|---|
| Total number of deaths, men and women | 37,018 |
| Deaths from cancer: | |
| (Women..1,940—5%) | |
| (Men.....1,326—4%) 9% | 3,266 |
| Deaths from tuberculous diseases, 16% | 5,980 |

(Deaths between the ages of 30 to 75 years)

| 1911 | |
|---|---|
| Total number of deaths, men and women | 37,925 |
| Deaths from cancer: | |
| (Women..2,034—5%) | |
| (Men.....1,431—4%) 9% | 3,465 |
| Deaths from tuberculous diseases, 17% | 6,115 |
| pneumonia, 10% | 3,864 |
| heart diseases, 16% | 5,947 |
| old age, 1% | 525 |

Deaths from cancer according to location, between the ages of 30 to 75 years, men and women.

| | 1910 | 1911 |
|---|---|---|
| Cancer of mouth | 123 | 114 |
| stomach, liver | 1,314 | 1,419 |
| intestines, rectum | 529 | 479 |
| female genital organs | 509 | 523 |
| breast | 324 | 339 |
| skin | 46 | 38 |
| other organs, and unspecified | 448 | 553 |
| | 37,018 | 37,925 |

Cancer is more common among women than among men, because the larger proportion of cancer in women is found in the female organs; that is to say, the female genital organs, including the breast. Excluding these (cancers of the genital organs and breast) cancer is more common among men than among women. Cancers of the mouth and of the stomach are more common among men than among women. This is thought to be because men are more addicted to the use of strong drink than are women, and the idea is also based on the assumption that men are more addicted to the habit of smoking than are women—as yet.

Cancers of the bile ducts are more common among women than among men, just as gall stones are more common among women than among men. The relative proportion of the two conditions is very suggestive and instructive, and will be dwelt upon when we come to consider the prevention of cancer. There are remarkably few instances of cancer as an occupational disease, and yet chronic irritation is recognized as a very potent factor in the production of cancer. However, there is the well-known chimney sweeps' cancer, the cancer caused by *x*-rays, the cancer caused by prolonged exposure to the sun, and in this connection we might include the kankri cancer of Thibet.

If chewing betel nuts could be considered as one of the industries of India, we might cite cancer produced by that habit as an occupational disorder.

Unfortunately the use of chewing gum does not produce a rapidly fatal form of malignant disease.

During the cancer period it has been estimated that in England cancer causes the death of one woman in eight and of one man in eleven. In this country cancer ranks next to pneumonia and tuberculosis as a cause among the total number of deaths. The statistics of the Department of Health of New York City for 1911 show the following facts:

After the thirtieth year cancer causes 9 per cent. of deaths; tuberculosis causes 17 per cent. of deaths; pneumonia causes 10 per cent. of deaths; heart disease causes 16 per cent. of deaths; old age causes 1 per cent. of deaths.

It has been estimated that there are between 75,000 and 80,000 deaths from cancer recorded every year in the United States.

There are many more deaths from cancer than are recorded. This is due to faulty diagnosis or inaccurate diagnosis, to neglect to include cancer when some other disease is also present, and to many other reasons unnecessary to dwell upon.

Now we come to the question of diagnosis of cancer. To make a late diagnosis of cancer is of no value whatever, except for the purpose of filling and of making up death lists. What we shall consider and what we should concern ourselves with is the question of early diagnosis. In this connection cancers are to be divided into two groups, namely, the superficial, external or visible, and the deep-seated or internal cancers.

Cancer always presents itself as a tumor or swelling, and when superficially situated it can, of course, be recognized by the two senses, sight and touch. There are some cancers of the skin, notably those of the face and lip, which are very slow in their growth and which consequently do not change rapidly, though they may reach a period later on in their history when a rapid growth takes place. Superficial cancers are to be differentiated from inflammatory swellings, from deformities presenting the appearance of swellings, and from benign tumors. In an address of this character it would not be well nor profitable to attempt to give rules for diagnosis or differentiation. It is

enough that we should call attention to the fact that any swelling may or may not be a cancer, and that it is of the utmost importance that a proper diagnosis be made at the earliest moment, for our only hope of curing cancer lies in an early, radical operation. In this connection the public should have definite but limited knowledge. Laymen and lay women should not diagnosticate their own cases any more than they should treat their own cases, but they should know enough about this subject to insist upon having a thoroughly satisfactory diagnosis from their doctors. As far as superficial cancer is concerned there is no excuse for doubt or error. If the doctor is not satisfied to take the responsibility of his diagnosis he should submit a section of the tumor to a competent pathologist for examination under the microscope.

Now as to the diagnosis of the deep-seated or internal cancers. In this class of cases we have a very different problem to deal with. During the early stages when diagnosis would be of importance and of use in bringing about a cure, a tumor can seldom be detected. The only indication that we may have of an internal or deep-seated cancer may be some disturbance of the function of the organ involved or of some associated organ. Thus any kind of a disturbance of function should lead us to think of the possibility of a new growth, and should lead us to make a most thorough investigation; otherwise, we shall never suspect nor detect internal cancers during the stage when our treatment can be of any avail. Loss of appetite may be the only sign present to indicate an incipient cancer of the stomach. A newly acquired tendency to constipation may be the only symptom of a cancer beginning in the large intestine. Chronic jaundice should always make us suspicious. Loss of weight and loss of vigor not to be accounted for by fever or other apparent cause should always make us apprehensive. Of course cachexia and great emaciation are late signs, and do not concern us unless we are so constituted as to take a lively interest in terminal stages, and unless we are willing to limit our efforts in our patients' behalf to the furnishing of some such terminal facilities as the administation of opium.

*Pain.*—Much valuable time has been lost because of the stress physicians and patients have placed upon the value of pain as a diagnostic sign of cancer. Pain is usually present late. It is present, as a rule, during the late development of cancerous growths. Pain is not a characteristic sign of the early stage of cancer. It occurs early as an exception, not as a rule. It is most important that this fallacy should be dispelled.

This is all that is necessary to be said on the subject of diagnosis until we come to the consideration of special conditions.

There is one thing that cannot be impressed too emphatically, and that is the necessity of early diagnosis. If there is any doubt as to whether a patient is or is not developing a cancer in its early stages, the patient should be given the benefit of that doubt. All suspicious tumors, no matter where situated, should be regarded as malignant until they have been proven to be innocent or nonmalignant.

Take, for instance, a lump or tumor of the breast. Nine-tenths of tumors of the breast are malignant, or become so. An unknown proportion of cases of chronic inflammation of the breast become cancers and any simple or benign tumor of the breast may become cancerous. Unless it be an acute abscess of the breast, every swelling or irregularity of that organ should be regarded with suspicion and should be treated as suspicious.

Now we come to the important question, the curability of cancer. While we know that cancer is a very fatal disease, we also know that by proper means cancer is curable in a proportion of cases. We also know that certain forms or varieties of cancer are much more easily cured than are others, that is to say, that the same means being employed there will be a much larger percentage of cures among one variety of cancer cases than among another variety. This is notably true of such superficial cancers as epitheliomata of the skin, particularly of the face. It is also true that cancer in certain situations of the body varies in this particular. Thus operation of cancer of the colon and of the small intestine yields very good results, while cancer of the lower rectum cannot be so successfully treated. Of course this is very largely determined by the possibilities of early diagnosis, early diagnosis of cancer being much more easy in one situation than in another. And again, this is owing to the fact that a cancer in one situation will produce symptoms much earlier than would the same kind of growth in another region. Wherever the situation and whatever the character of the cancer may be, the proportion to cures will be in direct relation to the period at which diagnosis and treatment have been applied.

Cancer is always a localized disease at first. Operation during the stage of localized growth would mean complete removal of the entire growth and would mean cure in a very large percentage of cases. For instance, in breast cases early operation while the growth is strictly localized will result in 80 per cent. of cures. Later operation with extension but with no axillary involvement may result in 50 per cent. of cures. Still later operation with limited axillary involvement may result in 25 per cent. of cures. Late operation with marked axillary involvement will result in no per cent. of cures.

Progression and dissemination are bound to occur; in fact a cancer growth is progressive from the beginning. After a cancer has made much progress in its growth or has become disseminated from the original focus, complete removal may not be possible; if not, cure will not result.

We now come to the most important part of this address; in fact it is the most important part of all the knowledge we have on the subject of cancer, and that is our recognition of the fact that there are certain conditions and certain diseases which predispose to the formation of cancer. Some of these are so definitely connected with the development of cancer that they are today recognized as and are designated precancerous conditions, or precancerous states.

In 1911, before this society, I had the honor of reading a paper entitled "The Precancerous Stage," in which was set forth the proposition that by studying our cases carefully and by recognizing the fact that certain conditions predispose to cancer, we would be making a great advance in our fight against this deadly foe, for by curing, or removing, these precancerous stages we would be preventing a large proportion of cancer. As far as this is true we see that cancer is a preventable disease.

This is an age of progress, and there should be added to the medical professions a new adage in place of an old one. The old one was "what can't

be cured must be endured." The new one is "what can't be cured must be prevented." Let us now turn our thoughts toward the prevention of cancer.

If cancer is preventable, how can we prevent it? Certainly this can be accomplished only by recognizing the cause of cancer and by doing away with this cause, whatever it may be. Now, as already has been stated, we do not know the real nature of cancer, nor do we know its real cause; but we do know that there are certain conditions which predispose to or determine the development of cancer in a large proportion of cases. Prominent among these conditions are benign tumors, chronic ulceration, chronic inflammation, abnormal tissue such as scars, and prolonged irritation.

*Benign Tumors As a Cause of Cancer.*—It has long been a recognized fact that the majority of benign tumors may sooner or later be invaded by cancer or may undergo cancerous degeneration. This is notably true of most of the various forms of tumors of the breast.

Nearly every variety of benign tumor may be found in the female breast. The fibroadenomata are by far the more frequent, and, therefore, the most important in this connection. These benign tumors may exist as innocent growths for years, and certain of them may continue indefinitely as such; but in the life history of any one of these, carcinomatous infiltration may take place, and then we shall be dealing with a cancer pure and simple.

The lesson to be learned from this is, that every benign tumor of the breast should be removed before it has an opportunity to become carcinomatous. In other words, it should be removed as soon as it is recognized. The time has passed when a doctor, in ignorance, may advise his patient that a tumor of the breast is of no significance unless it shows active signs of malignancy. If we recognize the benign growth as a potential cancer we know at once how to deal with it, and that is, to deal with it at once. In this way we are not only able to insure a patient of definite and permanent cure, but also we may bring this about by means of a small operation involving little shock and the least possible mutilation.

What is true of benign tumors of the breast is true of such tumors in other parts of the body.

*Pigmented Moles.*—Keen, Bloodgood, and, of course, many others, have shown how more than prone these growths are to become cancerous. One of the most instructive lessons can be learned by a careful review of Bloodgood's work in this connection. He made an elaborate study of 65 cases of malignant moles operated upon. In every case the diagnosis was confirmed by microscopic examination. Up to the time of his report there was not a definitely cured case among them. He calls attention to the fact that in every one of his cases the tumor had existed as a benign growth for many years before it became cancerous. Think what this means! It means that 65 cases (the total of a series) became incurable cancers, and that each and every one of these sad cases could have been prevented had operation been performed at the ideal time—that is to say, during the precancerous stage. In the same report he cites 76 cases of benign pigmented moles which were removed in the precancerous stage, and he states that there have been no local recurrences and no deaths from internal metastases.

There has been extensive investigation of this subject in connection with hypertrophy of the prostate. Of course senile hypertrophy of the prostate is purely an inflammatory process, or the result of one. Hugh Young demonstrated an immense proportion of carcinoma among his cases of enlarged prostate. And this fact shows how this chronic inflammatory condition may be the precursor or precancerous stage of the cancer. In his address before the Section on Surgery of the American Medical Association in 1910, Charles Mayo called attention to this fact and cited it as one of the reasons for removing an abnormally enlarged prostate gland.

*Gastric Ulcer and Gallstones As Precancerous States.*—Today we have very accurate knowledge of the lesions of the stomach as compared with what we knew a few years ago. We have the records of vast numbers of cases where the disease has been actually seen and demonstrated by skilled and able pathologists. A few years ago we had to depend on theories and surmises, based on imagination, unaided by sight and demonstration.

While it would be impossible to estimate what proportion of cases of ulcer of the stomach result in cancer, it has been possible to estimate what proportion of cases of cancer of the stomach were preceded by gastric ulcers, either healed or unhealed. In the immense clinic of the Mayos it has been shown that between 60 and 70 per cent. of cancers of the stomach have developed in the site of a pre-existing gastric ulcer, or in the cicatrix of an ulcer which had been healed. In other words, it is evident that we must consider gastric ulcer as the precancerous stage of more than two-thirds of the gastric cancers.

The lesson that we must learn from this is twofold; first, that gastric ulcer must be cured; second, that when we operate for gastric ulcer we must remove the ulcer-bearing area. If these statistics and these statements taken from the Mayo records are accepted, certainly gastroenterostomy is not the logical and rational procedure. It may cure the ulcer but it does not remove the cicatrix of the healed ulceration; in other words, it does not remove what has been pointed out as a conspicuous forerunner of cancer.

Now a word as to the importance of curing gastric ulcers. The day has come when we should insist on cure of all curable gastric ulcers and allied diseases. The day has passed when we should consider chronic indigeston as a man's normal estate. And when we consider the fact that chronic gastric ulcer has been the predecessor of two-thirds of the stomach cancers, we undertake a fearful responsibility in these cases unless we insist upon doing the best that can be done—cure the ulcer—prevent the cancer.

*Gallstones.*—Let me cite an illustrative case. Unfortunately it is an example of a very common occurrence. A patient was referred to a surgeon for an operation on account of an obstructive jaundice. It was evident to the surgeon that the patient probably had a carcinoma. And it was with that understanding that he performed an exploratory laparotomy. The reasons for this diagnosis of probable cancer were continuous jaundice, progressive emaciation and loss of strength, and absence of febrile disturbance. There were also present vomiting and other gastric symptoms which indicated obstruction at the pyloric outlet. On opening the abdomen it was found that the patient had a carcinoma, involving the gall bladder, the greater omentum, the transverse colon, the lower

end of the stomach, and, in, fact, all the organs in that region.

The patient gave a clear, distinct, and classic history of gallstone disease, lasting over a period of more than eight years. Of course the carcinoma did not last that long. From her history it was evident that it was of comparatively recent origin.

The above case is only one of innumerable instances which can be cited. It clearly depicts a case of cancer which had a very distinct precancerous stage, and there is little doubt that an operation performed years ago curing this patient of gallstones would have prevented the development of cancer.

That gallstones cause cancer there can be little doubt. In practically 100 per cent. of cases of primary cancer of the gall bladder and bile ducts gallstones may be found, and it may be demonstrated that they have existed for a long period before a cancer developed. It has been asserted that these cancers never develop except when preceded by gallstones.

It may be assumed that no case of gallstone disease recovers spontaneously. Of course a large proportion of gallstone cases may exist for years without showing violent or active symptoms. The fact that cancer results from long irritation of gallstones should demand an operation in every case, unless the patient's condition is such as to outweigh the reasons for operation. There are many other reasons why gallstones should not be left unoperated upon. Gallstones are never a benefit to the patient; they are always a source of harm. It is not necessary to discuss this point more fully in this connection. For our present purpose this one fact is sufficient—gallstones are invariably precursors or forerunners of biliary cancers, and for that reason if for no other we should operate and cure all cases of gallstone.

*Chronic Irritation As a Cause of Cancer.*—In the mountains of Thibet the natives are in the habit of carrying a small stove like a pocket stove in one part of their tunics. This stove is called the kankri. The polonged use of this kankri stove is followed by cancer at the site which is irritated by the heat. A very familiar example of cancer caused by irritation is the so-called clay-pipe cancer of the lip, caused by the habitual use of the clay pipe. Another is, or rather was, the chimney sweep cancer, caused by the irritation of soot lodged in certain folds of the skin. In late years we have added to our list the cancers produced by the too frequent exposure to the *x*-rays. A sharp tooth, by prolonged irritation, may cause a cancer of the lip or tongue. In India some of the natives are in the habit of chewing the betel nut, and they even go to sleep with a betel nut lodged in their mouths. At the place where this betel nut causes chronic irriation cancers develop. In China the men are in the habit of eating very hot rice. Owing to their inferior social status in that country Chinese women have to wait and do not get their rice fresh from the fire. Cancer of the stomach is very much more common among the Chinese men than among the Chinese women. By some this fact is ascribed to the difference in the temperature of the rice they eat. The social elevation of Chinese women may result in their not only sharing equally with the Chinese man in his vote franchise but also in his gastric cancer. Gallstones causing cancer form an illustration of the effect of chronic irritation. We might multiply these instances indefinitely. I believe the examples just given are sufficient to show that cancer does result from prolonged irritation.

The lesson to be drawn from this is obvious, namely, to avoid prolonged irritation. *X*-ray operators must protect themselves. A proper attention to a sharp tooth may be a means of preventing a cancer of the tongue. In a word, we should learn to avoid all unnecessary prolonged irritation, especially those forms of it which are known to result in the production of cancer.

*Chronic Inflammation As a Cause of Cancer.*—We frequently see examples of this condition. There is one form of chronic inflammation which might not be recognized as such, certainly by the laity. The best example of this form of inflammation of which I speak is found in the female breast. It is sometimes spoken of as abnormal involution of the breast. It is characterized by irregular hard masses within the breast which are not distinct tumors. This particular form of chronic inflammation of the breast is very liable to become invaded by cancer, so much so that it may be considered a precancerous stage, and it should be treated as such. If left to take its course many a cancer will ensue; if properly removed by an early surgical operation many a cancer will be prevented. This condition bears a strong analogy, both in its history and in its microscopic findings, to the change which takes place in the prostate gland, resulting in prostatic hypertrophy, and which in the prostate results in carcinoma in a very large percentage of cases.

I have not spoken of cancer of the uterus, nor do I believe it is necessary to dwell long upon that subject in this address. Uterine cancer is among the most frequent of all forms, and unfortunately it is among the most fatal. Cure of uterine cancer is very difficult. Our greatest hope lies in prevention. There are many conditions which predispose to these cancers, such as simple tumors of the uterus, chronic inflammation of the organ, and chronic ulceration, or so-called erosion, usually the result of neglected laceration and tears. All these abnormalities should be remedied because they are precursors of cancer. They are precancerous conditions. Of the symptoms I shall not speak at this time.

Now let us take unto ourselves such lessons as can be taught from the foregoing statement. Let us see whether we have been doing our duty in the past and let us see what we can do in making a fight against this dread disease in the future.

We may sum up our facts very briefly. Cancer is a purely localized condition at first. It tends to spread and to disseminate so that it soon ceases to be localized. Cancer can be cured only by complete removal of the entire growth. The entire growth can be removed only before dissemination has taken place, namely, in the early stages. Therefore, in early operation lies our only hope of curing cancer.

Have we been operating on our cancers in the early stages? We have not. A careful study of a large series of cases by the Pennsylvania Cancer Commission brought out the fact that on an average one year and two months elapsed between the time when cancer was first detected and when it was operated upon. It brought out the further fact that one year elapsed on an average between the time when a physician first examined the case and when operation was performed. Less than 68 per cent. of superficial cancers and less than 48 per cent. of

deep-seated cancers are operable when the patients come to the surgeons. Think of this delay! When we realize the fact delay amounts to death, it certainly behooves us to see if we cannot do better in the future.

I must mention some other facts which were brought out by this investigation, namely, that in about 10 per cent. of cases the physician first appealed to made no examination, and that in between 10 and 20 per cent. of cases which were examined the physicians gave mal advice, such as, "Let us wait and see what happens"; "Do not bother about it unless it becomes painful," etc.

Of course we cannot attain the ideal, but we should certainly strive to come as near it as possible, and if we do not examine our patients when they come to us, and if we do not advise them along the lines of well-established fact, we certainly are not striving after the ideal, we certainly are not doing our best.

Undoubtedly the patient is more often at fault than the doctor, but that does not excuse the doctor for his errors, and it certainly behooves every one of us to do all we can to educate the public in these important questions and to stimulate them and to encourage them to cooperate with us.

There is one important thing which must not be forgotten and which must be impressed upon the public, and that is the fact that surgical operations performed by skilled surgeons entail very little risk of life. Such operations as are performed for the early cure of cancer certainly do not result in the death of 1 per cent. of patients. Late operations must necessarily be more extensive, more severe, and more dangerous.

Now let us see what may be said as to the cure of those conditions which may be considered precancerous stages.

This takes us into a very wide field. It is almost a plea for good health. Here the physician and the patient must cooperate; neither must be satisfied with anything short of perfection, as far as perfection can be brought about. Just consider for a few moments the question of digestion and indigestion. Digestion is a normal function which should be carried on without symptoms, without discomfort. Indigestion is a symptom; it means a disturbed function. Of course it may be indicative of a purely functional disorder, but structure and function are so closely associated that an abnormal function should prompt us to suspect and to look for a structurally diseased organ. Now wherein may indigestion be a warning of a cancer yet unformed? Indigestion and dyspepsia may be the manifestation of gallstones, or of a gastric ulcer. Gallstones cause 100 per cent. of cancers of the gall bladder. If we could cure all cases of gallstones and if we could cure and remove all gastric ulcers before cancers have resulted therefrom, we would have no case of primary cancer of the gall bladder, or of the bile ducts, and we would have but one-third as many cancers of the stomach we have now. It has been roughly estimated that nearly one-half of cancers have a very easily recognized precancerous stage. If these precancerous stages bear the relationship which we think they do to cancer, their cure or removal would mean the doing away with practically one-half of the cancer.

I feel that this topic on which I have addressed you is a very timely one. It is belated, rather than timely, as far as its importance is concerned, for we should have given it more attention long ago. It is timely, because we are beginning to make an organized fight upon cancer, very much as we are making an organized fight against tuberculosis. To accomplish this we must make every endeavor to raise the standard of work among the physicians. As I said in the beginning, the greatest necessity lies in raising the average; our average is too low. We should give every possible encouragement to the scientific study and investigation of cancer. By that means the solution of the problem may be found some day, but at present it behooves us to better our work in everyday practice, to see that we disseminate among our entire profession all the practical knowledge we have, and to endeavor to bring it about that all our knowledge shall be employed all the time, by all of our profession.

Now as to the enlightenment of the public in these matters. I hold with the majority of our profession that it is very important that the public should have increased knowledge of this subject, but I do believe that we should be very guarded in the kind of knowledge we teach. We cannot and we should not teach the public the symptoms of cancer. We must be careful not to fill the public with unwarranted apprehension of cancer. Most of our teaching must come through the physician in his practice. If that were well done it would be far better than anything we could do in the way of spreading knowledge by literature. But there are some things which it is well for the public to know. It is well for them to know that every lump and every swelling is more or less suspicious. They should know that cancer has no definite characteristic symptom which distinguishes it from other conditions; they should know that a physician can give intelligent advice only after he has made a most careful examination in any case. They should not receive nor act upon any advice that is carelessly given. They should know the significance of indigestion, they should know the importance of good health, and they should know that cancer is in a sense preventable, and that it is in a degree curable, the degree in which it is curable depending entirely upon the time in which it is removed. They must know that operation in skilled hands is almost free from danger, that operations are safe, that delay is the chief danger in cancer.

The campaign against cancer has fairly begun. It has already been taken up actively in several States; in some by the health departments, and in others by commissions appointed by State medical societies. Such a commission was recently appointed by the Clinical Congress of Surgeons of North America. The American Medical Association and several of its affiliated State medical societies have started on active work.

In this connection I am not speaking of the tremendous work which is being done by various institutions and foundations along the line of the study and investigation of cancer as a problem: I am speaking of the campaign of enlightenment and of publicity which has been started along the more practical lines.

Of course this is not only a humane problem. It is a most important social and economic problem. If a well-organized campaign can result in reducing the morbidity as well as the mortality resulting from cancer, think what a saving it will be to the State.

How directly this thought can be applied to life insurance companies. If life insurance companies can do anything that shall lessen the number of

cancer cases developing among their policyholders, how much money may be saved to them. Some insurance companies are showing a recognition of this fact and are doing much in the way of disseminating knowledge among their policyholders, not only concerning general hygiene and preventive medicine, but some of them are trying to impart just such knowledge as I have spoken of, namely, knowledge as to how to prevent cancer.

This campaign should not only be nation wide, but world wide; and the more quickly it is started on a uniform basis with good organization the more quickly will it become effective. If we can have this matter taken up as a national affair with systematic work done throughout the United States, with every State and every county working under a uniform plan, how much may be accomplished. One of the first necessities is the establishment of a national department of health, whereby we can unify our proceedings, and whereby there can be issued national statistics which will be complete and accurate.

Think how much we may accomplish by a successful campaign of uniform and unified effort. When no longer fourteen months ensue between the first discovery of a cancer—and its final surgical treatment, and when no longer a year is to be lost between the time the physician first meets a cancer and the time when the cancer is brought to operation, and when no longer the physician who is first consulted in a case of cancer gives mal advice, and when physicians and patients recognize the fact that in early operation lies our chance of cure, think how many less deaths there will be from cancer.

If it is true that 50 per cent. of cancers show a definite and easily recognized precancerous stage, and if it is true that there are 80,000 deaths from cancer in the United States annually, then the remedy of the precancerous state, and the prevention of cancer will save 40,000 of our citizens annually from this terrible scourge. We may not attain our ideal, but let us unite our efforts to do the best that can be done.

540 Park Avenue.

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## THE SURGICAL TREATMENT OF CANCER OF THE ESOPHAGUS.*

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The subject assigned to me in this symposium, "The Surgical Treatment of Cancer of the Esophagus," does not necessarily imply that I am to talk on surgical details. I propose to take a broader view of the matter and consider briefly the division of responsibility between family physician and surgeon in the task of saving the life of patients afflicted with cancer of the esophagus.

Naturally the question arising in the mind of every physician is: What results have the surgeons to show us; have they saved any patients with malignant disease of the thoracic portion of the esophagus by operating upon them?

The surgeon may rightly turn around and ask: Can the physician give such a patient any hope whatever that he may pull through without operation? Can he conscientiously tell the patient's relatives anything else than that within twelve to fifteen months, more or less, the patient will surely be dead and will probably have died a most horrible death? In other words, can he say anything else than that the mortality of the disease with which the patient is afflicted is 100 per cent? He certainly cannot.

If, on the other hand, the question is put to the surgeon: Can you give a patient suffering from cancer of the esophagus a ray of hope? the surgeon can today reply confidently and conscientiously: Yes, I can. Yes, gentlemen, entrust to the surgeon a patient before he is past all hope; turn the patient over to him before the disease has had time to spread beyond the wall of the esophagus, before it has taken hold of adjacent organs, and, above all, before it has spread to both pneumogastric nerves, let the surgeon get the patient before he has wasted away in strength and weight; and if you can and will do this, gentlemen, the patient certainly has a chance.

The time when the surgeon should receive this class of patients is when you have become convinced, nay suspicious, that he is afflicted with cancer of the esophagus. At that moment he is past help from the general practitioner. From that moment on, if the patient be willing to submit to surgical intervention, there can be no further justification for general treatment.

The question of how to arrive at the conviction that one is dealing with a cancer of the esophagus—how to diagnose such cases—has been dwelt upon at length by the preceding speakers. I wish to emphasize only this one point: If a patient comes to you and complains of difficulty in swallowing, do not temporize with him. Subject him at once to a most rigid examination, and if you have excluded cardiospasm or the presence of a diverticulum; if you have excluded pressure upon the esophagus from without by an aneurysm or by glands or by a mediastinal tumor; if you have excluded a cicatricial stricture, also a benign stenosis following the rather rarer affections of a tuberculous or specific ulceration or a peptic ulcer at the cardia; I say, if you have been able to exclude all these possible causes for the difficulty in swallowing, as you will be in nearly 80 per cent. of these cases, then, gentlemen, you have a patient before you who is marked with the sign of death. Do not temporize with such a patient, and if the diagnosis be "cancer of the esophagus," turn him over to the surgeon at once, for only in the *early stages* of this disease has the patient a real chance of being saved by the knife.

You will want to know now, of course, what makes me speak so confidently; what right I have to come before you and demand the delivery of this type of patients to the care of the surgeon. There are several reasons.

The first one is the general nature of the disease. In the beginning it is slow of growth and slow in forming metastases. In most cases it starts one-sided, similar to a cancer of the rectum, and only gradually involves the pneumogastric nerve, which, you will remember, runs alongside and close to the esophagus on the right and left from a place immediately below the aortic arch down to the diaphragm. The disease is as yet localized within the esophagus and remains so sufficiently long, if detected early, to cover the unavoidable loss of time in determining the diagnosis and carrying out the necessary operative work preceding the extirpation (gastrostomy).

[1] Read before the Harlem Medical Association, March 5, 1913, being part of a "Symposium on Cancer of the Esophagus."

In short, the first reason is that in the early stage of the disease, cancer of the esophagus is ordinarily almost a benign growth and can be extirpated radically. I am, of course, speaking of the average case, and I know very well that many a patient of this type calls on the physician for the first time when a typical circular stricture has already formed; that means, he calls when the disease is in an advanced stage. But even then the patient should be turned over to the surgeon at once. Let *the surgeon* decide whether an operation on the esophagus should still be resorted to.

The second reason is that with the methods now at hand and the experience gained through persistent surgical effort since 1904, we can at present state, weighing our words carefully, that under favorable circumstances the patient may live.

The third reason is that the absence of successes in the surgery of cancer of the esophagus up to the present time is to a great extent due to the fact that to my knowledge no surgeon has yet had a chance to operate upon a case under really favorable circumstances.

Let me repeat then once more: A patient who has difficulty in swallowing is a serious case, needing immediate and most thorough attention. If with all the diagnostic means at command a definite diagnosis cannot be made, but the probabilities *are for cancer,* then the patient should be turned over to the surgeon for an exploratory thoracotomy. Statistics show that exploratory thoracotomy is as safe as exploratory laparotomy and should, therefore, be resorted to without hesitancy, where indicated. Then, if the diagnosis of cancer proves correct, the surgeon should be prepared to proceed immediately on proper lines.

Assuming now, for the sake of argument, that the patient had reached the surgeon in a condition which left a chance for successful surgery, that the operation had been successful, and that under present improved and tried methods of after-treatment the patient had recovered from the operation, in what condition is he left then? Is he left in a condition that will make it worth while for him to live on, or will his condition be such that, after all, it would have been better for him to have died without operation? Here it becomes necessary to enter into some surgical detail.

Our lately developed operative method of choice makes for gastrostomy use of Jianu's new operation, in which a part of the major curvature of the stomach is dissected and formed into a long, gut-like tube. One end of the same remains connected with, and opens into, what is left of the stomach; the other end is free.* Of this gut-like tube we now make use for the reconstruction of the esophagus.

In cases in which the examination demonstrates a location of the carcinoma above, behind or right below the aortic arch, the newly formed tube is drawn up extrathoracically, below the skin or pectoral muscle to a point next to or above the mammary gland (Jianu) and at a second sitting, after resection, the oral end of the esophagus having also been transposed extrathoracically (v. Mikulicz, Kelling, Ach) the connection between mouth and stomach can be completely restored, either directly by end-to-end suture, or by a subsequent plastic operation (extrathoracic esophagoplasty).

*A female patient, 46 years old, who had been operated on at the German Hospital with gastrostomy according to Jianu's method on December 26, 1912, was presented at the meeting. The gastrostomy opening is at the level of the cartilage of the third left rib.

In cases in which examination demonstrates the presence of the carcinoma in the lower third of the esophagus, or localized at the cardia, it has been, with that condition assumed, my recent practice in animal experimentation, to transpose the tube intrathoracically through the esophageal foramen of the diaphragm alongside the cardia, which had been closed by sutures and during the resection and to bring it to a connection with the undisturbed oral end of the esophagus, by end-to-end suture (intrathoracic esophagoplasty).

Both these methods have their advantages and also, for the time being, at least, their disadvantages. Intrathoracic esophagoplasty would functionally restore the patient to where he was before the cancer attacked him. From this point of view the method is certainly ideal. But, as far as can be stated at the present moment, the operation will, in all probability, have to be done in one sitting.

Extrathoracic esophagoplasty, on the other hand, is, by its nature, a two-stage operation; but we do not know yet what length transposed oral end of esophagus will live.*

Should further experience prove that the oral end of the esophagus, however long, can be safely transposed and united with the tube brought up from the stomach, then extrathoracic esophagoplasty would be the operation of choice, no matter where the cancer be located, unless a way be found to do the intrathoracic esophagoplasty in two stages.

This is a rather brief sketch of the present day evolution of the surgical aspects of the matter under consideration, but I hope it has been sufficient to make you feel that in view of the inevitable death under palliative treatment, surgical treatment with its ray of hope is the preferable procedure.

In conclusion I wish to say: Where diagnosis can be made and operation done in the early stages of cancer of the thoracic part of the esophagus, surgeons are justified at present in advising radical intervention.

In order to bring about the conditions necessary for a favorable prognosis, patients complaining of difficulty in deglutition must not be treated expectantly.

*Note.*—This paper was read on March 5. Nine days later, on March 14, Dr. F. Torek, attending surgeon to the German Hospital of New York, removed a cancer of the esophagus, situated behind the aortic arch, in a woman of 67 years. The cancer was in the early stage and both pneumogastrics could be well dissected off. The patient recovered. At the same time the March issue of the *Beitraege zur klinischen Chirurgie,* Vol. 83, 2, was received. In it Dr. J. H. Zaaijer, first assistant at the Surgical Clinic of Leiden, Holland, reported a successful case of carcinoma (also in the early stage) which involved the lower portion of the esophagus. The operation was performed on Jan. 9, 1913: The two first successful cases of resection of the esophagus for carcinoma, with entire recovery of the patients.

The experiences prove that there *is* hope of recovery after resection of the esophagus, provided the disease can be attacked at an early stage; and in view of the known comparatively benign character of cancer of the esophagus, the chances of a permanent cure in such cases are certainly good.

*It is of the greatest importance for the patient's future that partial gangrene with the ever-occurring subsequent phlegmon of the surrounding tissues should not set in. If a phlegmon does occur, it will seriously interfere with future skin-plasty, indeed it may render it impossible altogether.

# THE PURIFICATION OF NEW YORK HARBOR.

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Attention was first called to the necessity of making comprehensive plans for the disposal of the sewage of the metropolitan territory when the New York Bay Pollution Commission made its report in 1905. The Pollution Commission had been created to study the effect which the proposed Passaic Valley trunk sewer of New Jersey was likely to have upon the waters of New York bay, and its investigations brought to light conditions which called imperatively for remedy.

The remedy, however, was not easy to find. The great cost of such works as would apparently be required made it necessary to proceed with caution. It was evident that a good deal of sewage was being disposed of by the harbor waters, but the circumstances under which it disappeared were not fully understood. It was considered desirable that the whole question of sewerage and sewage disposal in the metropolitan district should be made the subject of investigation by a qualified body.

## OFFICIAL STATUS OF THE INVESTIGATION

It was in accordance with the recommendation of the Pollution Commission, and on the initiative of the Chamber of Commerce of the State of New York, the Merchants' Association, the Board of Trade and Transportation, the Produce Exchange and the Maritime Association, which, together, represent all the trade and commerce of this port, that the Legislature passed a bill in 1906, requiring the City of New York to appoint the Metropolitan Sewerage Commission and authorizing the city to raise such money as might be necessary for its work.

The State gave its authority for the investigation, conferring upon the commission all the powers of legislative bodies, including the right to enter upon property, subpoena witnesses and administer oaths. The State specified the subjects which were to be studied and required that three at least of the five members should be of recognized skill in sanitary engineering. No power to construct or to compel the construction of works or to require the adoption of any of its recommendations or plans was given to the commission. It was to be essentially and solely an investigating and advisory body. It has remained such to the present time without any intention or desire for change. The work for which it was created is rapidly drawing to a close.

The area studied by the commission covered about 700 square miles. The present population was about 6,000,000 and the future population for whose wastes preparation had to be made was about twice this figure. There were over 100 cities and towns in the district and the quantity of sewage produced was about 765,000,000 gallons per twenty-four hours. In 30 years or so this quantity would be nearly doubled, but the harbor water available for carrying the waste away would not increase.

## SCOPE OF THE STUDIES.

The commission was required to examine the extent and condition of the sewers, as well as to investigate the state of the water into which the sewers were intended to discharge. It was necessary to study the conditions produced with reference to public health and welfare, by which was meant specific harm to health and nuisance from smell and offenses to the sense of sight. The commission was required to consider injury to property as, for example, to the fishing interests, to vessels and to real estate.

A knowledge had to be obtained of the tidal phenomena which were opposed to the prompt removal and disposal of the sewage and those which could possibly be employed under proper circumstances to carry the sewage away. When it was discovered that the tidal actions were unfavorable to the inoffensive disposal of the sewage and that the water possessed a certain capacity for harmlessly and inoffensively assimilating organic matters, it became necessary to study this capacity and how it could be turned to good account.

The commission was not free to design works for the purification of the harbor without regard to cost nor without respect to the peculiar governmental conditions under which the works would have to be built and maintained. The sewers and the harbor waters were located within the limits of many cities, in two states and, in some respects, under national control. In other respects no control whatever existed.

In brief, the commission was required to ascertain the facts, formulate the remedy and devise the means by which the remedy should be applied. It was essential that the remedy should be necessary and sufficient for the present and capable of extension in order to meet the more exacting requirements of the future.

The work was to be done with such thoroughness as to set permanently at rest all speculation concerning the conditions of pollution and the remedies required. In the employment of assistants, in the purchase of supplies and in other respects, the commission was required to follow the machinery which had been devised by the city for the regulation of the great city departments. The Commissioners were to receive a yearly compensation of $3,000 in lieu of their personal expenses.

## DATA COLLECTED AND REPORTS.

During the five years that the commission has been organized in its present form a large amount of work has been done and much of this work has been described in printed reports. These reports, ten in number, have been distributed to city officials and the principal libraries. But very little knowledge of the commission or its work has come to the attention of the general public. The explanation of this probably lies in the fact that the commission has had nothing to promote, no argument to make, no project to foster. The reports are made to the Mayor, and although usually given to the press, the newspapers seem not to find the subject of interest.

Two of the commission's reports are bound volumes of quarto size and together contain about 1,000 pages of tables, maps and explanatory matter relating to the conditions of sewerage and sewage disposal which exist at the present time, and the principles under which the sewage should be collected and disposed of in future.

*Read at a meeting of the New York Academy of Medicine, March 20, 1913.

In a series of five reports, soon to be increased to seven, the commission has outlined the results of the plans it has made for the public works which it will be necessary to construct to protect the harbor against excessive pollution. One of the forthcoming reports will describe the works which the commission recommends for Manhattan and Brooklyn and the other will contain expert criticisms of these plans.

A third bound volume, comparable with the first two in size, is being prepared and will contain the results of numerous experiments on the purification of sewage, and other material of a constructive nature.

The amount of work done has been far in excess of what was expected, owing to the complex character of the problem and to the fact that practically all the information required had to be gathered at first hand.

### SUMMARY OF THE ASCERTAINED FACTS.

Briefly stated, the commission has found that the methods by which sewage is disposed of in the metropolitan district of New York and New Jersey call for immediate and far-reaching improvement. The problem of disposing of the sewage of this territory has taken on a new aspect in recent years, owing to the large increase of population which has occurred. The present conditions, bad as they are, serve as a warning of still worse conditions which will certainly occur if radical measures are not soon adopted to prevent them.

The waters within 15 miles of Manhattan Island which formerly were of ample capacity to receive and dispose of the sewage which was discharged into them are rapidly becoming over-burdened with the wastes. Sewage is not discharged anywhere within 20 miles of the New York City Hall today without creating a nuisance, or serious risk of nuisance. Bathing in the waters of New York harbor above the Narrows is dangerous to health and the oyster industry, already driven to the outer limits of the district, must soon be entirely given up. There are parts of the harbor where the water is discolored and rendered turbid with visible sewage matters for many acres.

Not only does the discharge of sewage now produce objectionable conditions near the points of outfall, but the waters which flow in the main channels of the harbor above the Narrows and in the lower East and Hudson rivers are more polluted than considerations of public health and welfare should allow. It has been proved that, contrary to popular belief, the tidal currents do not flush out the harbor satisfactorily, but cause the sewage to oscillate back and forth near its points of origin.

In addition to the objectionable conditions produced by the discharge of sewage from the cities immediately surrounding the harbor, a number of extensive trunk sewerage projects are being constructed to carry the sewage of inland municipalities for disposal into the waters in the immediate vicinity of the city of New York. These trunk sewers ultimately will add greatly to the polluting matter entering the harbor, unless prevented from doing so. The total capacity of the trunk sewers now built or under construction is 700,000,000 gallons of sewage per day. By the time these sewers have arrived at their full capacity the quantity of sewage from the City of New York will be at least twice what it is now, or over 1,000,000,000 gallons per twenty-four hours. It should be unnecessary to sound a clearer warning of the future condition of the harbor than these facts indicate.

### PROPOSED REMEDIES.

In general, the remedy proposed by the commission is to permit as much sewage to be discharged into the harbor as considerations of public health and welfare permit, and to keep the rest out by means of intercepting sewers, purification works and pumping plants. For the most part, the intercepting sewers will run along the shore lines and gather into them the sewage which is collected by the common sewers from the streets and houses. The interceptors will lead to centrally located points, where much of the organic material contained in the sewage will be removed or from which the sewage can be pumped to distant places for disposal.

Owing to the density of population and to the high cost of land, it will not be practicable to locate efficient purification works in all situations in which they are desirable. The most efficient processes which can be installed on Manhattan Island or its immediate vicinity are such as employ screens and grit chambers. The more effective biological processes, including filters and oxidizing beds, require so much land and produce so much odor and trouble from flies that they cannot be installed anywhere within the metropolitan district, except under special and unusual conditions.

To relieve the harbor of such part of its burden of pollution as will be required, it will be necessary to carry a large part of the sewage to the ocean and there construct an island where the sewage can be partly purified before it is discharged. It will be necessary to construct an island and to treat the sewage before emptying it into the surrounding waters for the reason that a suitable outlet for the great volume of raw sewage to be dealt with cannot be constructed far enough from shore to make certain that the sewage materials discharged there will not return and pollute the beaches. Men cannot live under the great pressure of air which would be necessary if a tunnel were to be built far enough at sea to prevent the crude sewage solids from coming back.

### A SEWAGE ISLAND.

The commission recommends that, to begin with, 203,000,000 gallons of sewage, during periods of dry weather, shall be collected from the territory naturally draining to the lower East river and pumped to an island to be located on a natural sand bar about midway between Sandy Hook and Rockaway Point. From the proposed site the shortest distance to land is about 3 miles. The sewage will be discharged after two hours' settlement, during which the suspended matter will have an opportunity to deposit in tanks from which the solids will be frequently removed and shipped to sea in a special tank steamer.

Responsibility for the sewage will not cease when the effluent leaves the island and this project does not contemplate the removal of nuisance from one place to another. The final disappearance of all sewage matters which leave the island will occur through the natural digestive capacity of the water which, at this place, is practically 100 per cent. normal.

The preliminary estimates which have been made indicate that the cost of constructing the island, which will be about twenty acres in extent, building the tunnel, pumping station and sewers will be less than $20,000,000.

This is the beginning. Ultimately the works will have to be extended, the general plan being to afford, by means of complete removal from the inner harbor, that relief from sewage pollution which the waters are not able properly to bear.

### A STANDARD OF CLEANNESS.

As a guide in determining the extent to which the harbor waters may be used for the assimilation of sewage, the commission has drawn up a set of regulations, which it has called a standard of cleanness, or limit of permissible pollution. Such questions are not determinable with the accuracy and definiteness of chemical analysis; they are largely matters of opinion and the standard of cleanness for New York harbor has been treated as such by the commission. It is obvious that the water need not, and cannot, be kept as pure as would be necessary if it were to be used as a source of drinking water. On the other hand, it will remain a great asset for health, convenience and comfort, only so long as it is, and appears to be, free from excessive contamination.

After it had formulated its own opinion as to the proper terms of a standard, the commission called upon eight eminent sanitary experts to inquire into the situation and express, without reference to the work of others, their own opinions. The same questions were asked of each and each was given the same opportunities for study. The reports covered much the same ground, but the points of view from which the subjects were considered were, as was expected, quite different. One of the experts was a civil engineer; another a chemist; a third a state health officer; a fourth an authority on the transmission of communicable diseases; a fifth was a biologist; a sixth was an expert in sewage disposal; a seventh was a teacher of hygiene and the eighth was a scientist who had made a special study of the disposal of sewage through dilution with tidal waters.

It may be said, therefore, that the question of a suitable standard of cleanness for the waters of New York was regarded from every important point of view. The standard which the commission has proposed consequently bears not only such authority as the members of the commission possess, but the additional weight of these sanitary experts. All of these reports, with a comparison and digest of the same, have been published in full by the commission.

The standard requires that solid matters, recognizable to the senses as of sewage origin, shall not be visible anywhere in the harbor; that the water shall not be rendered greasy or turbid or discolored by sewage, and that gases due to the discharge of sewage shall not occur. There shall be no deposits of sewage matters injurious to navigation, and the oxygen in the main tidal channels shall not be permitted to fall below about 58 per cent. of its saturation value during the warm summer months. So far as bacterial purity is concerned, it was not thought desirable to specify the number of bacteria or the kinds permissible in the inner harbor, such a standard being likely to prove unreliable in the present state of biological science. Bathing and the taking of shellfish for food should not be permitted in the city north of the Narrows, except under special circumstances and conditions, and the water at bathing beaches and over shellfish beds should correspond, bacterially, to drinking-water requirements.

### DESIRABILITY OF JOINT STATE ACTION.

In order to carry out the recommendations of the commission there will be need of new laws and a new central board or commission to interpret and enforce the standard of cleanness which has been proposed and perhaps construct and maintain the engineering works which will be necessary.

The commission has advised that a permanent supervisory body should be appointed by New York and New Jersey or, in other words, a joint interstate commission. This commission would be established by acts of the Legislatures and confirmed by Congress. If this joint action cannot be brought about, or if it is not considered feasible at the present time, the duty of carrying out the policy of conservancy should be placed in the hands of a commission for the metropolitan territory of New York, the expectation being that New Jersey will later create a similar commission to cooperate with it in the interest of the common welfare.

Existing departments and provisions of government cannot appropriately nor adequately deal with this question. The problems to be confronted are of unusual difficulty and complexity, owing to the great extent of territory, the large population and the many hydrographic, sanitary and economic questions which must be considered and adjusted from time to time in the several localities concerned. There will be much work to be done by the local authorities in fitting their sewerage systems to the main drainage and disposal works.

Finally, it is a pleasure to record the fact that the commission has received during its investigations the cooperation of many departments and bureaus of the Municipal, State and National Governments. It has had the cordial endorsement of two city administrations of New York and the appropriations of money which have been made for the work have always been in accordance with the commission's own estimates of its needs.

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## CANCER OF THE UTERUS.*

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The study of cancer became an "exact experimental science" in 1889 when Hanau[1] and Morau[2] and in 1901 when Jensen[3] and Loeb[4] demonstrated that carcinoma and sarcoma of white mice and rats could be transplanted into other animals. The total life of these animals is only about three years, and thus in a comparatively short time we are able to study cancer through many generations. In 1886, with the establishment of the first Cancer Research Fund, and since that time, with the establishment of many others throughout the land, it has been possible to accumulate much valuable information in regard to animal cancer. In one laboratory alone they now have under study sixty varieties of cancer. The recent work of Carrel[5] and his associates of keeping human cells alive outside of the body will unquestionably be of much service in the further work on cancer. While as yet these experiments have thrown very little light on the cause and cure of human cancer, yet we now have the prophecy that a specific will be found even before its etiology is understood.

*Read before the West End Medical Society, November 23, 1912.

From a review of the statistics of all countries, with reliable records, we find that cancer as a whole is on the increase. This is especially true of the digestive tract, with the exception of the mouth, whereas on the other hand carcinoma of the female genital tract is remaining stationary, or in some instances it is slightly on the decrease. Werner[6] has studied the statistics of Baden for the last twenty-five years, and finds that the yearly death rate from cancer has increased one-third. In persons over sixty years of age the increase is 50 to 60 per cent., from 40 to 60 years of age the increase is very slight, and in the very young there is no increase. He does not believe that the increase, as a whole, is due to better diagnosis, more hygienic conditions, or more careful records, for if it was it would affect all ages indifferently. Bertillion[7] thinks that the increase for all countries has doubled in the last thirty years. T. S. Brown[8] states that the death rate in Germany has increased seven times in the last thirty-three years, in Boston three times in thirty-two years, and in New York twice in eleven years. Kampermann[9] reports that in Michigan during the five year period ending December 31, 1909, the mortality of cancer has increased 15 per cent. In his study of 5,300 patients, practically all suffering from gynecological complaints, who in the last ten years have applied for treatment in the University of Michigan Gynecological Clinic and in the private hospital of Dr. Reuben Peterson, he found 212 had some form of uterine cancer. Thus he thinks it is fair to conclude that about 4 per cent. of gynecological cases have cancer.

Studdiford[10] estimates that in the greater city of New York in 1910 there were between 1,500 to 2,000 cases of carcinoma of the uterus, and between the ages of 35 to 65 there are four cases and one death from this disease to a thousand.

Howard Taylor,[11] from a study of the New York, Department of Health records, has proved that only 25 per cent. of women dying of cancer of the uterus have had a hysterectomy of any kind performed, and by correspondence with the doctors of these cases he found that in some instances it was done simply as a means of stopping hemorrhage or relieving other symptoms without any idea of attempting a cure.

Coley[12] thinks the actual death rate from cancer is far greater than statistics indicate, because among the laity there is a strong prejudice against the name cancer, therefore the family physician, out of respect for the feelings of the relatives, assigns secondary rather than primary affections as cause of death. Culliott[13] showed that in France the actual number known to have died of cancer was twice as great as reported. Riechelmann[14] has shown that in the Berlin hospitals 20 per cent. of the cases demonstrated on autopsy as cancer were not recognized during life.

Uterine cancer may be divided into two divisions, cancer of the cervix and cancer of the body of the uterus. It may occur as early as 20 and as late as 75 years of age. The greatest number of cases occur between 35 and 60. Cancer of the cervix occurs early, and cancer of the body late in life. The majority of recorded cases are found after child bearing. Especially is this true of cancer of the cervix. Falk,[15] in a careful study of all recorded cases, claims that injuries to the cervix are the most important predisposing causes. He finds that all observers show a very small proportion of nulliparæ who have cervial cancer, and true instances in virgins is of the greatest rarity. He found that the average number of births was five or six. On the other hand, Levin,[16] in a study of 613 cases of cancer of the uterus collected from metropolitan hospitals, finds that child-bearing as a whole does not seem to have the direct etiological bearing on the disease which is ascribed to it. "It is true that the number of cases of cancer in married women is a great deal higher than in single women, but so is the general ratio between married and single women during cancer age." He quotes census of 1900 to substantiate his claim, which shows that at ages 45 to 54 of deaths from all causes in women single to married, the ratio is 7:1, and from cancer it is 7.5:1.

In the treatment of cancer we have all, time and time again, had our expectations raised to the highest pitch, only to find after a time that our hopes of a cure were based on the claims of over-enthusiastic laboratory or clinical workers. To-day, as in the beginning, the cancer question remains unsolved. There is no specific, and the only means of combating this widespread disease is early diagnosis and immediate operation. It is generally conceded that cancer at some time in its early stage of development is a local condition, and that a radical removal of the growth will give a cure. But its earliest symptoms are so atypical that the laboratory workers have in the last few years developed many tests to help the clinician in a diagnosis. These tests are physical, chemical, and serological in character. "Almost every normal and abnormal body fluid, secretion, and excretion has been subjected to examination to determine, if possible, if there was not some specific reaction which would show the presence of a malignant condition." The consensus of opinion is that none of these tests are absolutely pathognomonic. The most promising are urinary tests, and among these we have the test of Salomon and Saxl,[17] who demonstrate that there is an increase of oxyproteic acid and similar substances in the urine of carcinoma patients. The test of Salomon, Saxl, and Falk,[18] who show an increase of polypeptids and the "colloidnitrogen" test of Salomon, Saxl, and Falk,[18] who show an tion of the total nitrogen content of the urine with the quantity of nitrogen precipitated by absolute alcohol or salts of the heavy metals. These tests require the most skillful technique, and are still in the experimental stage. Among the simpler tests is the methylene blue test of Fuhs and Lintz.[20] A few drops of Loeffler's methylene blue is mixed with a test tube of urine, and when shaken and allowed to stand twelve to twenty-four hours the blue color disappears. Among the serological tests is the meiostagmine reaction of Ascoli.[21] It is based on the theory that a true immunity reaction occurs in cancer as in bacterial infection. Still another is the cell reaction of Freund and Kaminer.[22] They have found that serum of normal individuals will destroy cancer cells, whereas serum of cancer patients will not. Still another, the fetal serum tests of Krauss and Graff,[23] which is based on some of the above mentioned tests, and the cell reaction of Freund-Kaminer, they conclude that the developed ovum produce in the maternal organism changes similar to those caused by a new growth. In the "antiferment" or "antitrypsin" reaction of Brieger[24] it is claimed we have a test that is of value from a diagnostic as well as from a prognostic standpoint.

These tests are as yet unreliable, and we must still depend upon subjective and objective symptoms for an early diagnosis of cancer of the uterus. The text books on gynecology are more or less obscure, as they do not sufficiently differentiate the symptoms of early and late carcinoma of the uterus. In early cancer of the uterus we do not have the classical symptoms of hemorrhage, pain, and foul leucorrhea, and we must not be misled in thinking that it is a disease only present from 45 to 60, and thus neglect a thorough examination of those cases that give us even the slightest warning earlier or later in life. The first and most frequent initial symptom of carcinoma of the uterus is bleeding, but not necessarily a hemorrhage. Kampermann found in his series of cases that in 73 per cent. the earliest manifestation of the disease was a bloody vaginal discharge. It may manifest itself most often in intercervical cancer as a prolonged or profuse menstruation followed by an ordinary profuse leucorrheal discharge, and there may be a cessation of symptoms until the next menstruation, or it may manifest itself as an occasional sudden gush of blood after unusual exertion, or by intermenstrual spotting. In cancer of the cervix the first evidence may be a slight bleeding after coitus, after the introduction of a douche nozzle, or a speculum. In these cases, by a digital examination, if it is intercervical no evidence may be obtained, or we may find the cervix is slightly hard to palpation, but it is difficult to differentiate this condition from the ordinary cystic cervix, or there may be a slight reddened area which on touch bleeds readily. In carcinoma of the body the symptoms may be nil, and only by the introduction of a sound there may be rather profuse bleeding after the ordinary cervical bleeding has ceased.

Pain in carcinoma cases is very seldom a factor until the growth has spread beyond the cervix and uterus. Although early, we may have sacral or lumbar pain irradiating down the thigh, but this pain is likewise present in many other gynecological conditions. It is not until late that we have the typical excruciating and neuralgic pain which has been found by some observers to come on toward evening and last most of the night. In 41 per cent. of Kampermann's cases a leucorrhea was the first symptom. There was no profuse hemorrhage, although later the discharge showed some color, or became blood streaked. Another point which must be emphasized is that early there is no cachexia, loss of weight or strength, and many of these cases look the picture of health. We must not be misled to prescribe in these cases a douche, give tonic, or dismiss the case as simply one of menstrual disorder. After all the only real means of making an early diagnosis is by a curettage, or by taking a section of the cervix and having the tissues thus obtained examined microscopically. I hardly agree with those who go so far as to advise every woman over 40 to go to her physician every six months for an examination, as she would to her dentist. But I do think that we as a profession are too apt to undervalue the symptoms of an irregular menstruation or the occurrence of a leucorrhea, and that we are too prone to neglect to instruct our patients in the signs of an early carcinoma of the uterus.

The nonoperative treatment of cancer of the uterus is applicable to inoperative cases, and as a means of preventing postoperative recurrence. The best results with *x*-ray, fulguration, the high frequency current and radium are in such conditions. Risely[25] has recently used in inoperable cases the ascitic fluid as suggested by Hodenpyl, and he concludes "that symptomatic relief can be obtained in a good percentage of cases, but that it has no permanent effect in preventing or in checking the growth of cancer, or in permanently benefiting the patient." Riseley[26] has also used an emulsion of cancer cells as proposed by Gilman and Coca, and concludes "that this method is not only useless but dangerous." Among other cancer emulsions, vaccines, or serums, may be mentioned the work of Vaughn,[27] and also the work of Berkley.[28] But as yet nothing seems to have been accomplished except in animal experimentation, in a few inoperable cases or as a means of preventing recurrence.

Another vaccine treatment is antimeristem of Schmidt[29], and is based on the principle of active immunization. Since the action of "antimeristem" is to produce in the body a protective force against the occurrence of carcinoma Schmidt believes its field of usefulness will be in the prevention of recurrence after operation.

Micrococcus neoformans vaccine has been used by Potter[30] in a few cases, but the principal result from this was a relief of the pain, hemorrhage, and a gain in weight, but with practically no diminution in the size of the growth.

With Wassermann's[31] eosin selenium combination based on Ehrlich's salvarsan work we have a means of treatment which has as yet been used only in animal carcinoma. "Wassermann states that, so far, they have merely demonstrated the falsity of the old theory that no substance could be found which introduced into the blood would selectively attack and destroy tumor cells without injuring the organism."

The best operative procedure for carcinoma of the uterus is still in dispute. Some operators think that a high amputation of the cervix may be all that is necessary in early cases. Theilhaber[32] calls attention to Schroder's clinic, where in the years 1878 to 1886 out of 114 partial operations 40 per cent. were alive and free from recurrence after four years, and 26.5 per cent. after eleven years. Others point to the good results obtained by the Byrne method of cauterization, and Werder[33], in a recent paper, reported 39 cases of the radical cautery operations with 46 per cent. surviving the five year period, with five subsequent deaths. Still other operators think that the best results are still to be obtained from the ordinary abdominal or vaginal total hysterectomy.

The extended abdominal operation as done by Wertheim, or the extended vaginal operation as done by Shauta, are now the operations which in the greatest number of cases give the best "absolute accomplishments." The object of both of these operations is to remove the uterus and adnexa with as much of the parametrium as possible, and also to remove a generous vaginal cuff to get well beyond the area of the growth and to prevent infection from the growth which has been proven to always harbor microorganisms, especially streptococci. In order to accomplish this there is a very complete exposure of the ureters on either side and the uterine vessels are ligated well out from the cervix.

The removal of enlarged lymphatic glands is still a question, but if time will permit it is usually done. The development of the technique has made the indications for this operation much broader

than the old vaginal or abdominal operations. Wertheim claims that every laparotomy for cancer of the uterus is exploratory until the abdomen is opened and it is found possible to do the radical operation. Jacobson[34] in 1911 reviewed 2,765 radical abdominal operations for carcinoma of the uterus, and of this number only 298 were done by American surgeons. In this series the operability ranged from 5 to 92 per cent. The European surgeons had an average operability of 65.17 per cent. and a primary mortality of 19.94 per cent., and the American surgeons an operability of only 35 per cent. and a primary mortality of 15.77 per cent. He reports the results of five European surgeons with an average of 40.72 per cent. of the operated cases alive and well five years after, and the percentage of all carcinoma cases applying for treatment alive and well from two to six and one-half years of about 21 per cent. Jacobson found it impossible to obtain any number of accurate five year statistics from American surgeons. From eleven he found that only 8.39 per cent. of the operated cases were alive and well after five years, and he estimated absolute cures at only 1 per cent.

Later American statistics (five year limit) of the extended abdominal operation for cancer of the cervix are as follows: Taussig[35] reports sixty operations by eight Western surgeons with 41.6 per cent. of operated cases alive and well with an "absolute cure" of 10.4 per cent. Cullen[36] in twenty-five cases gives a permanent cure of 24 per cent., G. H. Noble[37] in thirty-eight cases gives 34.2 per cent., Peterson[38] in six cases gives 50 per cent., Sampson[39] in eight cases gives 50 per cent., and Bovée[40] in twenty-seven cases over four years gives 30 per cent. None of these operators give per cent. of "absolute cures" or "absolute accomplishment" of the operation.

Late statistics of European surgeons show a reduction in primary mortality and a higher operability. In the extended vaginal operation for cancer of the cervix Schauta,[41] in a report of ten years' experience, gives an operability of 51.3 per cent., and in the last three years the primary mortality has been reduced to 3.7 per cent., with an absolute accomplishment of 16.6 per cent. Weibel[42] reports for Wertheim in the extended abdominal operation for cancer of the cervix an operability of 55 per cent., a primary mortality, from five hundred and first case to six hundred and seventy-fifth case of but 9 per cent., and an absolute accomplishment of 19.5 per cent. After five years there were well 43 per cent., including primary deaths, and 53 per cent., excluding these deaths.

Operability is still very low in America, and averages about 25 per cent. Quoting Ries,[43] "Operability is a condition dependent as much on the operator as much as on the patient." . . . "I know of surgeons who refuse to operate in any case of carcinoma of the cervix; others who will do only operations which have a low primary mortality; others, again, who no amount of primary mortality can deter from the most desperate attempts. Each one of them has his own conception of operability, which expressed in figures, would vary between 0 and 80 per cent. of all cases." Unquestionably the personal equation is a factor, but it will not account for the great difference in operability as shown by a comparison of American and European statistics. In America we do not see our cases as early as they do in Germany. Taylor[44] emphasizes this fact by comparing his statistics with those of Aulhorn. In his series the majority of cases were seen after the symptoms had lasted from three to six months and longer, whereas Aulhorn saw the majority of his cases with symptoms that had lasted less than three months and up to six months. It is the experience of operators in New York that few cases are seen, and then when operability is very low. Brettauer[45] in ten years, in 15,000 gynecological cases, has seen twenty inoperable and only 19 operable cases. Polak,[46] in his clinic at the Long Island College Hospital, where there are 4,000 new cases a year, had not a single operable case the last year.

I have collected a series of cases of cancer of the uterus from records of the Woman's Hospital covering all cases admitted for a period of fifteen months. I have gone over the period from December 6, 1906, to August 14, 1907, and from March 16, 1912, to November 22, 1912, and find that for these periods there were a total admission of 1,831 patients, and of this number only 46 were suffering from uterine cancer, and of this number only 23 were operable. This is especially interesting, as all were sent in to the hospital with a possible diagnosis of operability, and in only half was it possible to operate.

The present solution of the question of cancer of the uterus is to get our cases early, no matter what method of operation or cure we adopt.

In 1902 Winter[47] met this question in the following way. In East Prussia he attacked the problem along the following three lines: "(1) All practising physicians in the province were instructed, by means of a pamphlet, as to the methods and the importance of making an early diagnosis. (2) All midwives were instructed to send any carcinoma-suspicious patients to a physician. (3) By means of articles in the more important newspapers, the general public were enlightened as to the early symptoms of uterine carcinoma, and were urged to seek immediate medical advice."

Previous to Winter's campaign only 85.8 per cent. of the cases that applied to physicians for advice were given an internal examination. In the next eight years (1910) this rose to 91 per cent. The midwives previously had only referred to physicians 62 per cent. of suspicious cases, and in 1910 they referred 100 per cent. Among the laity themselves who sought advice within three months of noticing first symptoms it rose from 32 to 55.8 per cent. The increase of operability was from 62 to 69.8 per cent. The further outcome of his campaign was that in Germany nine medical organizations and eleven special societies have followed his lead, and in Austria-Hungary, France, England, Switzerland, Holland, Belgium, Russia, Denmark, Sweden, Italy, and the United States, publicity campaigns have been started. The Second International Cancer Congress held in Paris approved of the necessity of such work. Recently the Société Médicale de Rheims[48] has added to this list the druggist who often has the first opportunity of setting aright some of these early cases of uterine cancer.

When we one and all enter into the spirit and fully realize the necessity of this campaign for early diagnosis and early operation of cancer of the uterus, then and only then will any appreciable number of women be relieved of the untold suffering of inoperable uterine cancer. This will be gradually accomplished without any unnecessary dread of the disease, just as has been done by the campaign against tuberculosis.

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## Medicolegal Notes.

**Consent to Operation—Measure of Damages.**—Action was brought against a surgeon for operating upon the plaintiff without her consent and performing the operation unskillfully. The defense was that the plaintiff consented to the operation, and that it was performed with proper care. The operation consisted of taking out one of the ovaries and making an adjustment of the other, and was performed at a hospital. Proof for the defendant showed that there was no neglect upon his part, and that what he did was according to the approved practice in such cases, although it turned out, in the plaintiff's case, not to relieve her. It was held that there was evidence warranting the jury in concluding that the doctor understood, and had the right to understand, from all that passed between him and the plaintiff, that he was to put her under an anesthetic, and was to perform the operation while she was under it if, upon examination, he found that necessary. There was nothing in the evidence warranting a recovery of punitive damages, as there was no evidence of bad faith, recklessness, or oppression on the part of the physician. If the defendant understood, and had reasonable grounds to understand, that the plaintiff was willing to have the operation so performed, and he performed it, he had the right to do so as by her consent. Reasonable grounds were held to be such grounds as would warrant a man of ordinary prudence to so understand under the circumstances. It was held to be error to charge the jury to find for the plaintiff such a sum as would fairly compensate her for her loss of health. Such a standard was too uncertain; for a jury might justly think that no reasonable amount of money would compensate a young woman for the loss of her health, and to give the jury such a measure of damages would be in effect to turn them loose without any criterion to guide them.—Van Meter v. Crews, Kentucky Court of Appeals, 148 S. W. 40.

**Practicing Without a License.**—In a prosecution for practicing medicine without a license evidence that the defendant had told the witness that he did not give receipts, that it was not necessary, as he could not collect by law, was held to be proper, as it would show that the defendant was aware of the prohibition of the medical practice act and that the business he was pursuing was prohibited by law. That act was held to be a reasonable exercise of the state's police powers. The legislature having defined the meaning of the words "practice of medicine" to embrace all "who shall publicly profess to be a physician or surgeon, and shall treat or offer to treat disease, etc., also all persons who shall treat or offer to treat disease, etc., for compensation," the court held that in so defining the words the legislature had rendered liable to the provisions of the act all persons who should treat disease and charge therefor, regardless of the mode or method used in so doing (including prayer and the laying on of hands) and the evidence, both for the state and the defendant, showing that the defendant was treating and offering to treat diseases and disorders, and the evidence for the state being sufficient to show that he was making charges therefor, judgment of conviction was affirmed. Proof that the defendant did not charge for his services directly, but told those who applied to him for treatment that he would receive from them "free will offerings" and that he actually did receive pay from patients, was held to be sufficient to show that he practised medicine for compensation.—Singh v. State (Texas), 145 S. W. 891.

**Compensation for Services.**—In an action for professional services for attending the defendant's minor son while sick of typhoid fever, the evidence of the plaintiff was somewhat indefinite as to the number of visits that the doctor made; but it was shown that the patient was sick about six weeks, and that the doctor visited him as often, on some days, as two or three times. It was shown that $1.50 for a day visit and $2.50 for a night visit of a doctor to a patient was a reasonable charge. In view of the common knowledge that in severe cases of typhoid fever doctors visit their patients almost daily, and sometimes several times each day and often at night, and the other facts and circumstances of the evidence, it was held that the jury's verdict of $116.30 was not excessive.—Des Mond v. Kelly (Mo., 14), 6 S. W. 90.

**Privileged Communications—Waiver of Privilege.**—The privilege conferred by the Indiana statute, providing that physicians shall not be competent witnesses as to matters communicated to them as such by patients may be waived by the patient, or those who stand in his place, or are authorized to represent him; and when a witness has been permitted without objection in a former trial to testify to privileged communications, the bar of privilege is waived, and the testimony cannot be excluded on that ground at a subsequent trial.—Studebaker v. Faylor, Indiana Appellate Court, 98 N. E. 318.

**Privileged Communications.**—The privileged communication rule under the California statute operates upon the physician alone, and confers a personal privilege on the patient, which may be expressly or impliedly waived by him in person, or by an attorney or agent acting on his behalf, such as a person to whom he has assigned a note for collection.—San Francisco Credit Clearing Co. v. MacDonald (Cal.), 122 Pac. 964.

**Privileged Communications—Waiver.**—The New York statutes prohibiting the disclosure by a physician of any information acquired in a professional capacity unless waived by the patient is absolute and it is of no consequence that the patient is not present to object to the evidence. The prohibition is effective unless the provisions are expressly waived on the trial by the patient.—Weil v. Weil, New York Appellate Division, 136 N. Y. Supp. 190.

# MEDICAL RECORD.

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## THE INFLUENCE OF INTRAVENOUS INJECTIONS OF MERCURY UPON ANTIBODY FORMATION.

THE treatment of puerperal fever by means of intravenous injections of corrosive sublimate was introduced about four years ago and rather extravagant claims were made in its favor. The method has probably not received a very thorough trial, and certainly theoretical considerations have been opposed to its use. One of the observers at that time, however, was impressed with the results, and has investigated the effect of such injections upon the antibody content of blood serum. Kalledey concludes from his work (*Centralbl. f. Bakt.*, Vol. lxviii, p. 358) that the intravenous administration of small amounts of mercury bichloride results in an increased antibody and complement formation in both sick and healthy animals. He studied the quantitative changes in the complement, and the normal agglutinin and lysin of pregnant women, and the specific agglutinin and lysin in rabbits immunized against sheep's red cells or the typhoid bacillus. All of these bodies reacted similarly, and it seemed to make no difference whether the dose was three or five milligrams. Following the injection there was a rather rapid fall, corresponding to a "negative phase," which reached its maximum in two days. Then began a gradual rise so that the number became normal about the fifth day and reached its height about the tenth day. The number gradually declined again until at the end of fifteen days the value of the serum was again normal.

The author is naturally reluctant to offer any explanation as to the manner in which this change is accomplished, but is inclined to believe that, as mercury is a protoplasmic poison, the negative phase represents a primary destruction of the cells. After this the cells are stimulated to increased production of protective substances. He believes that arsenic, and therefore salvarsan, acts in the same way, and that it is the quantity rather than the quality of the antibodies which determines the cure. It would be contrary to the rule for the body to react in this way to an inorganic poison, but his experiments seem conclusive and are certainly worthy of attempts at confirmation. Other recent work would tend to indicate that the quality of the antibody is of the highest importance, although no doubt the number of such bodies is not wholly a negligible factor. There are not lacking enthusiastic advocates of the use of mercury in the treatment of all infectious diseases, and this work would furnish a theoretical basis for their methods. The influence of the administration of mercury and salvarsan upon the Wassermann reaction, however, apparently constitutes a formidable objection which will have to be explained away before the theory finds general acceptance.

## THE VIRUS OF RABIES AND THE NEGRI BODIES.

A DISTINCT advance in the diagnosing of rabies followed the discovery, by Adelchi Negri in 1903, of certain cellular inclusions constantly present in the nervous system of animals affected with this disease. In the past ten years many of our health boards have used means for the recognition of these bodies which have come to be regarded of prime importance in the diagnosis of rabies. Negri himself worked for nearly ten years in studying these bodies and successively demonstrated their presence in various animals suffering from rabies. His work has been confirmed by many observers the world over. The findings have been so generally uniform that it has come to be recognized that when Negri bodies are found in the ganglion cells of the hippocampus major it is a positive sign of rabies. These bodies have been further studied by researchers with a view to proving their parasitic nature but without advancing our knowledge of them any more than in the case of the Guarnieri bodies caused by vaccine virus. The smallest of these bodies are almost ultramicroscopic and react to stains like nuclear particles, but the largest—the typical Negri bodies—are readily differentiated from nuclear particles by appropriate staining methods. Any further light upon the significance of these bodies is to be welcomed, especially since, every now and then, some false prophet preaches that there is no such disease as rabies. Pasteur's work alone in 1884 should refute this.

Recently Acton and Harvey of the Pasteur Institute in India have published a report of their studies on the fixation of rabies virus in the monkey (*Macacus rhesus*) with a study of the appearance of Negri bodies in the different passages (*Parasitology*, Vol. 5, No. 4, February, 1913). These authors found that the street virus of the dog becomes exalted and fixed by successive passage through the monkey, just as in the rabbit and other animals; the type of rabies being at first furious, but after the seventh passage, paralytic. With each successive passage the Negri bodies were found to be smaller in size until ultramicroscopic. After the seventh passage, when the paralytic form of rabies was fully developed, very few Negri bodies were found. This diminution of the number of Negri bodies seems to bear a definite relation to the fixity of the virus as shown by another experiment. The authors inoculated two bullocks, one with street virus and the other with fixed virus. The street virus caused large Negri bodies, whereas the fixed virus caused none at all—and this in an animal showing the largest Negri body known.

The results of these experiments are of especial value because of the use of the monkey, and they are illuminating in the study of other cellular inclusions which, like the Negri body, have been regarded as protozoan parasites.

### Alimentary Toxemia in Its Relation to the Teeth and Mouth.

Alimentary toxemia is nowadays a very widely discussed subject. Of course, it has been recognized for long that if the digestive organs do not act normally the entire system will soon be thrown out of gear. Recently, however, efforts have been concentrated upon discovering the essential causes of indigestion, so as to be able to strike at the root of the evil, rather than, as is too often the case, merely to treat the symptoms. As one result of these more thorough and painstaking investigations carious teeth and oral sepsis generally have been stigmatized as some of the chief factors in the causation of alimentary toxemia. In a discussion on this matter which took place before the Royal Society of Medicine on April 14, Mr. J. G. Turner stated that from observation of the results of treatment directed to dental sepsis only, he was sure of the existence of an alimentary toxemia due to this condition. The components of dental sepsis and dental caries, pyorrhea, tartar, artificial causes of sepsis, were all governed by the root-factor stagnation, stagnation of germs and soft, starchy, and sugary foods. It might be termed germ-carbohydrate stagnation. He gave the results of his observations, showing that both in man and in the lower animals dental sepsis ran parallel with the occurrence of germ-carbohydrate stagnation, citing the occurrence of pyorrhea and dental caries in South Sea Islanders and in captive monkeys. The islanders made extensive use of cocoanuts and captive monkeys were largely fed on bread. Jaws of the seventeenth and eighteenth centuries showed far less pyorrhea than those of today. Fine ground flour was the determining factor. In treatment the most radical was the safest means, in hospital practice especially so, because of the danger of artifact sepsis. Those who had not inquired would be astonished to find how many persons lived comfortably with few or no teeth. He did not wish to be understood to say treatment short of extraction was useless. Most gratifying results could be obtained by local treatment if the patient could maintain the clean state so arrived at. For prevention Turner urged cleanliness and a return to bread made of coarse ground meal.

### Well Fitting Shoes for the Army.

Shoes which fit comfortably are necessary to the well being of every individual, and especially does this remark apply to the soldier. If a shoe does not fit well it brings about not only extreme discomfort, but not infrequently injury and even malformation. The fact is now recognized by the army authorities, who, according to the report of the Surgeon General for 1912, have become fully convinced of the necessity for having military shoes made on a correct last and properly fitted. However, although the conviction reigns, the marching shoe with which the rank and file of the army are supplied does not meet with the approval of various surgeons. The majority of them report (1) that the toe of the shoe is too low; (2) that the toe of the shoe does not properly protect the toes of the foot; (3) that the width of the shoe is too great for the length, hence if a shoe is long enough for the foot it is too wide; (4) the instep is too low. The question has been under consideration for several months by a board at Fort Leavenworth, with Major E. L. Munson of the Medical Corps as president. A great many radiographs have been made of feet with shoes of various patterns and without shoes. These radiographs show that practically the feet of all adults are deformed from wearing shoes made on improper lasts. The board suggested that a number of shoes be made on a set of lasts recommended by them, and that a practical test be made of these shoes under the supervision of the board. This was done and a command of 379 men was properly fitted with these shoes under the supervision of the board and went out on a practice march of 117 miles, occupying nine days. Careful notes were kept and examinations made, both by inspection and by the *x*-ray. The results were so satisfactory that the conclusion has been reached that a satisfactory field shoe has been devised as the result of the work of the board.

### The Nutritive Effects of Pasteurized Milk.

Although pasteurized milk is now very largely used, there is yet considerable divergence of opinion with regard to the effects produced on the nutritive value of milk by this process. There are some, in fact, who still hold that milk is injured as a food by the method. It is therefore encouraging to note that in response to a letter dated April 4, 1912, received from a committee representing the Washington Section, Woman's Welfare Department of the National Civic Federation, and the Association for the Prevention of Tuberculosis in the District of Columbia, asking that a study be made by the Public Health Service in cooperation with the Bureau of Animal Industry of the Department of Agriculture as to the effects of pasteurization on the nutritive value of milk and also of the relative value of raw and pasteurized milk as food for infants and invalids, the service and association in question have consented to cooperate in this investigation. A feeding station with the necessary equipment has been established at the Hygienic Laboratory for these studies, Passed Assistant Surgeon A. M. Stimson being placed in charge of them. It is planned to continue this investigation for at least one year, and preferably longer, in order to make the results of real value.

## News of the Week.

**Report on the Friedmann Culture.**—At the meeting of the National Association for the Study and Prevention of Tuberculosis in Washington on May 9, Dr. John F. Anderson of the U. S. Public Health Service, chairman of the Government board which has been investigating the claims of Dr. Friedmann, presented a short report. The report read, in part, as follows: "Without presenting in detail the condition of patients under observation, we are in a position to state that the effects, thus far observed, do not justify the confidence in the remedy which has been inspired by widespread publicity. In our opinion harm may have been done by this undue publicity, in so far as it has lessened the confidence of tuberculous persons in well recognized methods of treatment or interrupted their

use, and we are constrained to advise against any lessening of those well-known measures, which not only have effected cures, but which have reduced the incidence of the disease." Following the reading of the report the Association adopted these resolutions: "Whereas, Widespread publicity has been given to the claims of an alleged cure for tuberculosis. Resolved, That there is no information before the National Association for the Study and Prevention of Tuberculosis to justify the belief that any specific cure for tuberculosis has been discovered which deserves the confidence of the medical profession or the people, And, Resolved, that it is the duty of the public to continue unabated all the present well-tried agencies for the treatment and prevention of tuberculosis."

**City Death Rate.**—During the week ending May 6 there occurred in New York City 1,532 deaths, giving a death rate per thousand of 14.88, as compared to 1,542 deaths and a rate of 15.55 during the corresponding week of 1912. The deaths during the week from measles, scarlet fever, bronchopneumonia, and pulmonary tuberculosis were considerably decreased, while increases occurred in those due to organic heart disease and lobar pneumonia.

**Osteopaths May Sign Death Certificates.**—At a meeting of the Board of Health of New York City on May 7 an amendment to section 163a of the Sanitary Code was adopted, thus giving to certificates of death signed by osteopaths who have been licensed after passing the New York State examination the same force as regards the issue of burial permits as those signed by physicians holding the degree of M.D.

**Memorial to Dr. Bristow.**—The Bushwick Hospital, Brooklyn, N. Y., has received a gift of $1,500 for the equipment of an *x*-ray room in that institution as a memorial to the late Dr. Algernon T. Bristow.

**Tuberculosis Statistics.**—The New York Department of Health has recently compiled statistics which show that the number of new cases of pulmonary tuberculosis in this city has steadily declined each year since 1910. In that year 32,065 cases were registered, while in 1912 there were 22,752 cases. In Manhattan and the Bronx the mortality figures have fallen consistently from 4.27 per thousand in 1881 to 1.9 per thousand in 1912. Since 1908 the death rate from consumption in the entire city has dropped from 2.25 to 1.66 per thousand.

**Mortality in the State.**—During the month of March, 1913, the mortality in New York State was unusually large, the total number of deaths being 14,089. Pneumonia caused 1,456 deaths; pulmonary tuberculosis, 1,395, and cancer, 761. During the same month there were 19,582 births.

**Tonsillitis Epidemic.**—An epidemic of tonsillitis in Canton, Mass., during the last few weeks has caused the deaths of several persons, and of the entire population of 3,000 at least 400 are reported to be ill with the disease. The source of the epidemic has not been determined.

**Radium Work at Harvard.**—A study of the effects of radium in the treatment of cancer is shortly to be begun at the Harvard Medical School under the direction of Dr. William Duane, a former worker in Mme. Curie's laboratory. The work will be supervised by the Cancer Commission of Harvard University, of which Dr. E. E. Tyzzer is director, and for the present will be carried on in the Collis P. Huntington building, though it is hoped that later a separate building will be constructed near the Medical School and devoted entirely to the radium work.

**Tufts Medical School.**—The trustees of Tufts College, Boston, have appointed as Dean of the Medical and Dental Schools Dr. Charles Fairbank Painter, at present professor of orthopedic surgery in the institution. Dr. Painter succeeds Dr. Harold Williams, who recently resigned the deanship and has been made professor emeritus of the practice of medicine. Dr. Elwood T. Easton has been appointed professor of ophthalmology, succeeding Dr. Henry B. Chandler, resigned.

**Civil Service Examinations.**—The United States Civil Service Commission announces an examination on June 4, 1913, open to men only, for physicians to fill vacancies in the Isthmian Canal Commission at entrance salaries of $1,800 per annum, one vacancy being in the Insane Asylum at Ancon, Canal Zone, for which an unmarried man who has had experience in the treatment of the insane is desired. It is desired also to fill a vacancy in the position of acting assistant surgeon in the Public Health Service at Jacksonville, Fla., at a salary of $500 per annum. Appointees to such positions are required to devote only a part of their time to the Government service.

On the same date, examinations, open to men only, will be held for the purpose of filling vacancies in the position of dentist in the Indian Service at Large, at a salary of $1,500 per annum, and in the position of dental interne in the Government Hospital for the Insane, Washington, D. C., at a salary of $600 per annum. Details as to all these examinations may be secured on application to the United States Civil Service Commission, Washington, D. C.

**Army Medical Corps.**—The Surgeon General of the Army announces that preliminary examinations for appointment of first lieutenants in the Army Medical Corps will be held on July 14, 1913. The essential requirements are that the applicant shall be between twenty-two and thirty years of age, a graduate of a reputable medical school, and of good moral character and habits, and shall have had at least one year's hospital training as an interne after graduation. Full information can be procured upon application to the Surgeon General, United States Army, Washington, D. C. There are at present forty vacancies in the Medical Corps of the Army.

**Gifts to Charities.**—The Good Samaritan Dispensary, New York, receives a bequest of $10,000 under the will of the late Samuel Riker of this city.

By the will of the late Miss Alicia M. Curtis of Hanover the sum of $50,000 is left to the New England Hospital for Women.

A bequest of $5,000 to the Babies' Hospital, New York, is included in the will of the late Mrs. Robert W. Todd.

Five thousand dollars goes to the Englewood Hospital of Englewood, N. J., by the will of Mr. Joseph Lyman who died recently at Wallingford, Conn.

By the will of the late William Kaufmann of Philadelphia the sum of $5,000 is bequeathed to the Jewish Hospital for the endowment of a free bed.

**Smallpox in Philadelphia.**—The discovery on May 10 of five cases of smallpox in colored persons in the northern section of Philadelphia led to the temporary quarantine of 300 houses and the vaccination of nearly a thousand persons.

**Death from Anthrax.**—A worker in a curled-hair factory in Philadelphia died on May 9 from anthrax shortly after handling a bale of hair from Siberia.

**Phipps Institute for Tuberculosis.**—The new building of the Henry Phipps Institute of the University of Pennsylvania for the Study, Prevention, and Treatment of Tuberculosis was formally dedicated at Philadelphia on May 10 in the presence of a notable body of physicians and sociologists. At the same time the honorary degree of doctor of laws was conferred on Mr. Phipps and on Dr. Edward L. Trudeau. The opening address was made by Dr. Edward F. Smith, provost of the university, who conferred the degrees, and he was followed by Dr. Lawrence F. Flick, who gave an historical sketch of the Institute prior to its affiliation with the university, and by Dr. Herman M. Biggs of New York City, who reviewed the tuberculosis situation and offered suggestions as to the future activities and influence of the institute.

**Section on Laryngology of the Academy of Medicine.**—Dr. Chevalier Jackson of Pittsburgh will read a paper before the Laryngological Section of the New York Academy of Medicine on Wednesday evening, May 28, at eight-thirty o'clock. The subject of the paper will be: "A Lantern Demonstration of Laryngostomy and of Plastic Operations for the Formation of Adventitious Bands." The profession is cordially invited to attend.

**Memorial to Dr. Morrow.**—A meeting to commemorate the life and work of the late Dr. Prince A. Morrow will be held by the Society of Sanitary and Moral Prophylaxis on Thursday evening, May 22, at the Academy of Medicine, 17 West 43rd Street. The program will be as follows: "Dr. Morrow, the Physician," by Dr. Edward B. Bronson; "Dr. Morrow, the Educator," by Dr. Edward L. Keyes; "Dr. Morrow, the Philanthropist," by William A. Purrington, Esq.; "Dr. Morrow's Work in Uplift," by the Rev. John P. Peters, D.D.; "The Pioneer Qualities of Dr. Morrow as a Social Reformer," by Dr. Charles W. Eliot.

**American Academy of Medicine.**—The thirty-eighth annual meeting of the American Academy of Medicine will be held at the Leamington Hotel, Minneapolis, Minn., on June 13, 14, and 15, 1913, under the presidency of Dr. Ray Lyman Wilbur of San Francisco. A copy of the preliminary program may be obtained from the secretary, Dr. Charles McIntire of Easton, Pa.

**Northern Medical Association.**—The annual reunion and dinner of this society was held in Philadelphia on the evening of April 30, Dr. James Tyson, professor emeritus of medicine in the University of Pennsylvania, being the guest of honor. Dr. Henry Beates, Jr., presided at the dinner, and addresses were made by Dr. John B. Deaver, Dr. William E. Robertson, and others.

**Travel Study Tour.**—The travel study tour of American physicians to include the XVIIth International Congress of Medicine in London will start from New York on July 3, passage being taken on the *Bremen* of the North German Lloyd line. About seventy-five physicians will be in the party. In cooperation with the International Committee for Post-Graduate Medical Education, arrangements have been made for visits to clinics and hospitals in Paris, Munich, Vienna, Berlin, Dresden, Cologne, and Brussels, and the party will finally reach London in time for the congress. Dr. Richard Kovács of 236 East 69th Street, New York, is the secretary of the study tour.

**The American Dermatological Association.**—At the thirty-seventh annual meeting of the American Dermatological Association, held at Washington, D. C., May 6, 7 and 8, 1913, the following officers were elected for the ensuing year: *President,* James MacFarlane Winfield of Brooklyn; *Vice-President,* S. Pollitzer of New York; *Secretary and Treasurer,* Oliver S. Ormsby of Chicago; *Member of Council,* William A. Pusey of Chicago. Chicago was selected as the next place of meeting.

**The Northeast Oklahoma Medical Society** was organized at a meeting held in Tulsa recently, the following officers being elected: *President,* Dr. G. H. Butler, Tulsa; *Vice-Presidents,* Dr. B. W. Freer, Nowata; Dr. G. F. Woodring, Bartlesville; Dr. John B. Donahoe, Afton, and Dr. Louis Bagby, Vinita; *Secretary,* Dr. John V. Athey, Bartlesville; *Treasurer,* Dr. W. A. Howard, Chelsea.

**Berkshire District (Mass.) Medical Society.**—At the annual meeting held in Pittsfield on May 1 the following officers were elected: *President,* Dr. John B. Thomes, Pittsfield; *Vice-President,* Dr. F. C. Downing, Lanesboro; *Secretary,* Dr. O. L. Bartlett, Pittsfield; *Treasurer,* Dr. J. D. Howe, Pittsfield.

**Medical Club in Philadelphia.**—The Presiding Judges of the Courts of Philadelphia were the guests of honor at a reception given recently by the Philadelphia Medical Club. Addresses were made by the Judges, and memoirs of the late Dr. Roland G. Curtin and the late Dr. George B. McClellan, former presidents of the club, were read.

**Museum of Safety.**—An International Exposition of Safety and Sanitation will be held in New York, in December, 1913, under the auspices of the Museum of Safety.

**Obituary Notes.**—Dr. John Haven Emerson of New York, a graduate of the College of Physicians and Surgeons, New York, in 1864, and a member of the Physicians' Mutual Aid Society, and the Clinical Society, died at his home suddenly from apoplexy on May 4, aged 73 years.

Dr. Robert D. Robinson of El Paso, Texas, a graduate of the Kentucky School of Medicine, Louisville, in 1887, and a member of the Texas State and El Paso County Medical Societies, died suddenly at his home on April 9, aged 52 years.

Dr. Joseph B. Fenwick of Chelsea, Mass., a graduate of the Harvard Medical School in 1872, a member of the Massachusetts State and Suffolk County Medical Societies, and an associate on the staff of the Chelsea Hospital, died at his home on April 26, aged 75 years.

Dr. Margaret V. Doane Kimball of Healdsburg, Cal., a graduate of the University of Michigan, Department of Medicine and Surgery, in 1880, died at her home after a short illness on April 17, aged 60 years.

Dr. Mary Bridges Beattie Cornish of Everett, Mass., a graduate of the University of Toronto, Faculty of Medicine, in 1906, formerly pathologist at St. Luke's Hospital, New Bedford, died at her home, shortly after giving birth to a child, on April 23, aged 30 years.

Dr. Edgar Garceau of Boston, Mass., a graduate of the Harvard Medical School in 1890, a member of the American Medical Association, the Massachusetts State and Suffolk County Medical Societies, the American Gynecological Society, the Obstetrical Society of Boston, the American Urological Association, the New England Branch of the American Urological Society, and the Boston Medical Library Association, and consulting gynecologist to the

Quincy City Hospital, and gynecologist to the Boston Dispensary and St. Elizabeth's Hospital, died at his home after a brief illness on April 29, aged 46 years.

Dr. Charles W. Price of Richmond, Me., a graduate of the Medical School of Maine, Portland, in 1875, a veteran of the Civil War, and a member of the Sagadahoc Medical Club, died at his home on April 25, aged 69 years.

Dr. Edward M. Small of Eastport, Me., a graduate of the Jefferson Medical College, Philadelphia, in 1871, died at his home on April 27, aged 66 years.

Dr. J. H. Grady of Columbia, Ky., a graduate of the University of Louisville, Medical Department, in 1868, died at the home of his daughter in Quincy, Ill., on April 22, aged 70 years.

Dr. Archibald B. Sellards of Lawrence, Kan., a graduate of the Miami Medical College, Cincinnati, in 1875, a veteran of the Civil War, died at his home suddenly from paralysis on April 20, aged 68 years.

Dr. Thomas W. Mulhern of Greenfield, Ia., a graduate of the College of Physicians and Surgeons, Keokuk, in 1882, and a member of the Iowa State and Adair County Medical Societies, died suddenly on April 21, aged 68 years.

Dr. Thomas J. Lymington of Ackley, Ia., a graduate of Queen's University, Medical Faculty, Kingston, Ont., in 1881, and a member of the American Medical Association and the Iowa State and Hardin County Medical Societies, died at his home from blood poisoning on April 21, aged 56 years.

Dr. Alvah F. Whitman of St. Paul, Minn., a graduate of the University of Michigan, Department of Medicine and Surgery, in 1865, died at his home after a short illness, on April 20, aged 81 years.

Dr. Hermann Kahn of New York, a graduate of the University of Wurzburg, Germany, in 1861, died at his home on May 1, aged 79 years.

## Obituary.

### LOUIS A. DUHRING, M.D.,

PHILADELPHIA.

Dr. Louis A. Duhring died in Philadelphia on May 8 at the age of 67 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1867, subsequently serving for 15 months as interne in the Philadelphia Hospital. Later he went abroad, spending two years in study in Paris, London and Vienna. On returning to Philadelphia in 1870 he established a dispensary for the study and treatment of diseases of the skin, serving as attending physician for a period of seven years, and later becoming consulting physician. In 1871 he was made clinical lecturer on diseases of the skin in the University of Pennsylvania, and in 1876 he was advanced to the professorship of that branch, serving until 1911, when he was made emeritus professor. He was a Fellow of the College of Physicians of Philadelphia, a member and one of the founders of the American Dermatological Association, honorary member of the London, Vienna, and Italian Dermatological Societies, corresponding member of the New York, French, and German Dermatological Societies. He was the author of several formal publications dealing with diseases of the skin and a liberal contributor to the literature of the subject.

## Correspondence.

### A SHORT-CIRCUIT WARNING.

To the Editor of the Medical Record:

Sir:—Lest that weight of authority, which is an integral part of almost everything that our eminent colleague, Robert T. Morris, writes, may lead some to error, I desire to call attention to a paragraph in his article on "Peritoneal Adhesions of the Insidious Toxic Group," printed in the Medical Record of April 12. "This operation consists in a simple short-circuiting of the colon. The ileum or cecum is placed against some convenient segment of the sigmoid colon, and the two structures, held temporarily by traction sutures, are quickly united in such a way that 4 or 5 feet of the offending colon are thrown out of commission. Sufficient storage room is left for fecal matter, but the large useless area of the colon is no longer able to turn into the circulation a harmful flood of toxins. The short-circuiting operation can be done through a comparatively small incision, and with so little attendant shock that we sometimes see a patient reading a newspaper next morning in bed and sitting out of bed in ten days."

This is so very simple, that, coming as it does, there will be some venturesome ones who will try it with a strong probability of having fecal regurgitation and accumulation in the excluded colon. Lane's short-circuit operation for intestinal stasis is certainly one of the most valuable contributions to surgery that has been made in this generation. But Lane's technique must be followed without any variation if we may expect uniformly good results. In our town a few weeks ago a surgeon removed a distended colon containing 17 pounds of feces. It had been short-circuited at a very celebrated clinic, possibly in some such way as the paragraph of Dr. Morris might be taken to mean by those not properly informed.

An esteemed internal medicine colleague protested loudly against Lane's short-circuit operation at a meeting of a medical society when I mentioned in discussion having done forty of these operations. He had recently returned from a prolonged sojourn in Vienna. There he had seen the enormously distended colon removed in two cases where short-circuit operations had been done. Later, on questioning him, I found that the cecum had been anastomosed with the sigmoid, which one might infer, from reading the paragraph of Dr. Morris, was a proper thing to do. It is certainly easy, and the patient may "read the paper the next morning." If one were more venturesome it might even be done in the office under local anesthesia, and the patient return home in the street car.

Lane's short-circuit operation is not an anastomosis of the ileum with "some convenient segment of the sigmoid colon." It is an end-to-side anastomosis of the severed ileum with the upper part of the rectum. To harmonize the nosology of the embryologists, let me explain that the anastomosis must be made in the straight part of the lower bowel at the lowest possible point at which it can be made with reasonable tension. Anastomosis above this point may leave a distal fold of the sigmoid, possibly one of the original causes of the stasis, where it will favor regurgitation.

There is also one necessary step in the operation which cannot be safely done through a very short incision. The severed ileum has been trans-

ferred to a new attachment from the right to the left side. This leaves an opening in the mesentery through which the intestine might readily pass and cause obstruction. This must always be closed by a suture passed bit by bit under the peritoneum of the mesentery between the severed portion of the ileum and the anastomosis in the lower bowel. The mesentery here contains many large vessels, the wounding of which by a needle puncture might be serious. Each portion of the peritoneum must be picked up by forceps before the needle is passed through it. This suture is first placed like a purse-string and secured by forceps, and later carefully tied after the anastomosis is made, making sure that no loop of intestines has slipped within its grasp. Finally the operation is completed by having an assistant pass a rectal tube, which the operator guides through the anastomotic opening upward for about a foot into the ileum. This is a most valuable aid in preventing postoperative distention. All this cannot be safely and well done through what is ordinarily considered by Dr. Morris to be a short incision, and yet every part of this technique is necessary for uniformly good results. The incision should extend from the pubes to the umbilicus.

Done as I have indicated, the results are satisfactory, and the patient may indeed commonly "read the paper in bed the next morning."

A. E. Rockey, M.D.

Alder St. and Broadway, Portland, Ore.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

ANTIVIVISECTIONISTS' LIBEL ACTION — HOSPITAL FUNDS—ALIMENTARY TOXEMIA DISCUSSION—BEHRING'S SERUM—EPIDEMICS—ELECTRICAL AMBULANCES—RED CROSS—OBITUARY.

London, April 25, 1913.

The antivivisectionists have lost their action. On the sixteenth day of the hearing the jury gave their verdict for the defendants, and judgment was entered for them with costs. These must amount to many thousands of pounds, but may be regarded as advertisement expenses. No doubt it must be a costly method, but it has practically kept "the cause" of these antis before the public for more than a fortnight. The plaintiff, Miss Lind af Hageby, as I reported to you, acted as her own counsel, and proved herself equal to the post. She was able to state her views at great length, and to interpolate many biographical incidents and to interest the readers of the daily papers. As witnesses she put in the witness box a number of her followers, including half a dozen qualified medical men. The defence contented themselves with the same number of medical witnesses, but all of them could speak with knowledge, and all are well known as scientific authorities. The judge summed up on the sixteenth day and told the jury what were the facts at stake. He complimented the plaintiff on the conduct of her case; on her power to stand day after day without showing fatigue, and ability to speak and cross examine as well as a member of the bar. But it was her duty to fight fairly and truthfully. She might express her opinions most strongly, but was not entitled to make untrue assertions. He referred to her statement that six and one-half millions of people had died in India from the effect of serum treatment. She had declared she adhered to the terms of an open letter to Lord Cromer; if so Lord Cromer might well bring an action against her. He was somewhat puzzled at the antivivisectionist's argument that one may cut up a mouse to save the mouse's life, but not to save human life. Did the jury think the defendants had made out their plea of justification and proved substantially the truth of their allegations that the plaintiff had been guilty of mendacity and carried on the campaign untruthfully they would be entitled to say her case was not proved. And that was not all. There was the plea of fair comment. Would they carry on a campaign as this had been carried on? Miss Lind, in her reply, had appealed very strongly, but verdicts are not given on oratory, but on evidence, and they must do their duty. After about twenty minutes' absence the jury returned to court with a verdict for defendants.

The annual meeting of King Edward's Hospital Fund was held on Wednesday. The report was moved by the speaker and carried unanimously. It stated the total receipts for 1912 were £179,378, the amount distributed, £157,500, of which the hospitals received £151,000, the remainder being distributed among sanatoria and convalscent homes taking London patients. During the last ten years over £1,300,000 has been thus distributed by this fund, and since its foundation over £1,633,000. The council emphasized the fact that the income from investments represents only about half the amount of the annual awards, and to maintain the present rate of distribution the fund is dependent on the contributions of the year. Every institution applying for a grant was inspected and reported upon by visitors of the fund, one medical and one layman in each case. The number of beds secured in sanatoria placed at the disposal of the hospitals is now thirty-nine in five different institutions. The annual statistical report on the expenditure of London hospitals deal with 107, giving an analysis of the expenses of all those which have adopted the revised uniform system of accounts. Since these reports were first issued, in 1903, there has been a regular reduction of cost, amounting at length to above £37,000 a year, and that in spite of a rise in prices of many necessaries and the constant introduction of new methods of treatment.

The Hospital Saturday Fund's annual meeting was held on the 19th. A shrinkage of income has followed the insurance act, but the work has not diminished; it has really increased, for 2,000 more benefits were granted than in the previous year. The chairman said the needs of the great hospitals were no less, and the secretary of the London hospital had stated that not a single person had been turned away from that great hospital during the last two or three months. The report was unanimously adopted, and afterawrd Dr. T. D. Lister read a paper on tuberculosis, and moved a resolution approving of the system of forming dispensaries in the various metropolitan boroughs to promote prevention of consumption and spread knowledge about it. This was also carried.

The discussion on alimentary toxemia was resumed at a special meeting of the Royal Society of Medicine on the 14th inst. Mr. Lawford referred to the reported connection with diseases of the eye as widely recognized, although many were still disposed to dispute it. No one doubts that toxemia is often associated with oral sepsis, especially from chronic gingivitis and pyorrhea alveolaris. So chronic iridocyclitis has been attributed to the same cause, since Mr. Lang pointed it out. Choroiditis

mostly of the exudative type was also likely to occur in the course of oral sepsis and other infections; so were the several forms of scleritis. It was thought that tonsilitis might elaborate a toxin which would set up ocular lesions, and the same was asserted of intestinal derangements. These last were perhaps the most potent of all, for diseases in which such toxins abound in the intestines, *e.g.* dysentery, are often accompanied by retinal hemorrhage, or phlebitis and choroiditis. Retroocular neuritis might be due to autotoxemia, and ophthalmic surgeons may well remember this in reference to the infections which occur after operations.

Professor Dixon said the toxins produced in the alimentary canals were derived from amino acids. These were not themselves poisonous, but became so when acted on by certain microorganisms which removed a molecule of $CO_2$. Small quantities of the amino acids were always present in the canal, and the microorganisms probably had a beneficial effect in health.

Dr. Ledingham discussed the bacteriological and biochemical evidence put forward by the Metchnikoff school, in which he put but little confidence so far, though he thinks further researches in this direction may lead to more certain results.

Dr. Galloway spoke of cutaneous affections in relation to the toxins. He divided such manifestations into four groups: (1) Those which may result from disturbances of the blood vessels, and disappear, leaving no permanent trace; (2) inflammatory lesions, progressing to infiltration of the integuments with cellular elements, and terminating in persisting deformity, such as dilatation of blood vessels, atrophy, ulceration, and scarring; (3) purpura punctate or diffuse—often with other hemorrhagic manifestations; (4)pigmentation due to increase or abnormal distribution of pigments closely related to those of the normal type, such as melanin, or in other cases to pigments more recently derived from hemoglobin, and due to hemolysis resulting from the circulating intestinal toxins.

Dr. Mantle said numerous invalids visited Harrogate with symptoms which he thought traceable to absorption of toxins from some part of the alimentary tract, and it was well to endeavor to localize the spot, which might be anywhere in the length of the canal. Perhaps the commonest was in the colon, due to constipation and stasis of the contents. But absorption did not usually occur unless abrasions or a very weak mucosa increased the favorable conditions. Sometimes there was a more general infection of mucous membranes, including the respiratory. Treatment should be directed to removing all toxins from the canal throughout its whole length. He had found intestinal lavation with sulphur water useful, also warm sulphur baths to assist arthritic or cutaneous manifestations.

Mr. J. G. Turner was certain from treatment alone that there exists a dental sepsis arising from stagnation of germs and the debris of soft, sugary, starchy foods. It might be called "germ-carbohydrate" stagnation. Cats and dogs were similarly affected, as they were fed a good deal on pappy food. Monkeys in the zoological gardens often died from enteritis, but long before this pultaceous matter could be squeezed from the gums.

Dr. A. F. Hertz, in a careful contribution to the discussion, remarked that the symptoms commonly regarded as characteristic of intestinal stasis were by no means pathognomonic, and he showed the value of the bismuth meal and of the *x*-rays for determining the spot at fault. With proper precautions in diagnosis it would be found that intestinal did not lead to gastric stasis, nor to duodenal kinking, dilatation, or ulceration, but ulcers of the duodenum are associated with rapid passage of chyme from the stomach and all through the small intestines. In the ileum there is a normal stasis produced by the ileocaecal sphincter. Kinks here are rare, and do not increase the normal stasis, but it may be increased by spasm, or failure of the sphincter to relax as a result of disease in the neighborhood of the caecum, perhaps including iliac kinks.

Normally the hepatic and splenic flexures appear under *x*-rays to be acutely kinked, but this is only because the shadow is thrown at an angle with the colon. Ptosis of intestine does not cause stasis except in rare instances at the splenic fixture—a pelvic caecum and a pelvic colon being compatible with perfect health and normal intestinal action. In most cases of constipation only one part is at fault, and to that treatment should be directed. Medical treatment almost always succeeds when the colon is involved in its whole length, so that the necessity for surgery is exceedingly rare. In only one case Dr. Hertz advised resorting to an operation.

Mr. Coleman gave an account of toxemia arising from lesions and conditions of the mouth, teeth, and gums.

Dr. G. Monod of Vichy, who was a visitor, supported Dr. Mantle as to the value of spa treatment.

At the Wiesbaden Medical Congress, which closed on April 18, Prof. Behring announced a modification in his diphtheria serum, which overcomes the defect of the too short duration of its prophylactic influence. He now combines an antidote with the serum, and several speakers testified that real protection was obtained by them from its use. One said he had transferred the serum to another child with success, and claimed it as the first time that passive immunity had been produced with human diphtheria serum. Another said he had injected the serum into the vertebral canal, and thereby restored a patient who was in an extremely critical state. A Hamburg physician remarked that in the late epidemic there the mortality kept high, notwithstanding the use of serum. A Berlin physician said in that city statistics showed that since serum came into use, though mortality fluctuated, the proportion of deaths to cases had fallen half. Perhaps in more severe epidemics it might not be so great.

Dr. J. T. C. Nash, in his Chadwick lecture, on Monday, applied to the evolution of epidemics that of species in adapting their conditions to those of their environment. He thought that the history of the prevalence of phthisis permanently in a community shows, much as is the case with infective diseases as a whole, that after being endemic for a considerable period, it tends to lose some of its violence and so assume a milder type.

Some electric ambulances have been in use here for a time, and their value was illustrated a day or two ago by two accidents. In one the electric ambulance was available, and in reply to telephone, arrived on the spot with assistance and all appliances in a few minutes. In the other, it was longer before help could be had, and though about the same distance from the hospital, that distance had to be traversed very slowly. The facts were stated at an inquest when the jury expressed the opinion that electric ambulances should be provided all through

London, and requested their views to be transmitted to the authorities.

Col. Bedford, R.A.M.C., on Saturday inspected a branch of the Red Cross. Detachments were mobilized and emergency hospitals organized, with an isolation ward in one. Boy scouts were utilized as patients, brought into hospital by their comrades on stretchers, the equipment, nursing, and everything being exactly as under war service conditions. The inspector expressed approval of all the arrangements.

Mr. R. B. Etherington-Smith died on the 19th of April in St. Bartholomew's Hospital, to which he was an assistant surgeon and the warden of the college. He was seized with peritonitis on the 16th, and the next afternoon submitted to an operation. He was only 36 years of age. He took M.A., M.B., and C.M., Cambridge, in 1907. He had qualified in 1903, and in the following two years held the posts of house surgeon and ophthalmic house surgeon for the usual periods at St. Bartholomew's, where he had filled his medical curriculum. Subsequently he was demonstrator of anatomy, and of morbid surgical anatomy, and registrar. Afterwards he was appointed warden, and on the surgical staff. He was one of the most promising young surgeons, and a great career seemed to be before him. He was also a distinguished athlete and a great favorite with students, both at St. Bartholomew's and Cambridge.

## OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

THE THIRTEENTH ANNUAL MEETING OF THE CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS—COCAINE IN CANADA—THE MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

MONTREAL, April 4, 1913.

THE annual meeting of the Canadian Association for the Prevention of Tuberculosis was held in Ottawa, in March. The meeting was held considerably earlier in the year than is usually the case in order to allow of the presence of H. R. H. the Duke of Connaught before leaving for England. So far as attendance was concerned the meeting was the largest on record; so large was it, indeed, that for the opening meeting the Russell Theater had to be engaged. The abnormal attendance was not wholly due to the presence of the Duke but probably was owing more to the fact that Dr. Friedmann had consented to address the meeting upon the principles underlying his treatment of tuberculosis. The Russell Theater was crowded to its utmost capacity, a goodly proportion of the audience being ladies. After Sir James Grant of Ottawa, the nestor of the Canadian Medical, had read a report on serum therapy in 1861 in which he recalled that in that year he had recorded good effects from the employment of ordinary vaccine lymph in the treatment of blood poisoning, Dr. Friedmann gave his address. The principles upon which his treatment are based are probably well known to the medical profession throughout the United States, so well has the Berlin physician been advertised from all points of view, and it would therefore be superfluous to quote his address. Suffice it to say that it seemed to be an admirably clear and lucid exposition of his principles. However, a few words here will not be out of place to explain the standpoint upon which three medical scientific bodies in Canada concluded that it would be in the best interests of the medical profession and the public to invite Dr. Friedmann to give demonstrations of his treatment. As a result of the wholesale advertising of Dr. Friedmann undertaken by the lay press and aggravated by the position taken by the medical profession of this country, however correct it may have been, all those suffering from tuberculosis were anxious to be treated and were thrown into a state of disquietude by their inability to obtain decided information on the point. Especially were sanatorium and dispensary physicians and those interested in the fight against tuberculosis placed in a most unenviable position. Accordingly, as this was the situation, in order to relieve this unrest, so dangerous to sufferers from tuberculosis, and to convince the public that the medical profession was not opposed to the discovery of a means of cure, it appeared that the wisest policy would be to offer Dr. Friedmann every facility for conducting his demonstrations under such conditions that there could be no doubt of the genuineness of the tests nor of the results obtained. Consequently the Royal Edward Institute of Montreal, the National Association for the Prevention of Tuberculosis and the University of Toronto decided to invite Dr. Friedmann to give demonstrations. It may be said that at Dr. Friedmann's demonstrations at the General Hospital, Ottawa, during the meeting more than one hundred and fifty medical men were present, including the leading authorities on tuberculosis in Canada.

The program of the meeting was as follows: Address of welcome by His Worship, Mayor Ellis; executive report presented by the secretary of the Association, Dr. George D. Porter; address of the president, Hon. Adam Beck; address by Hon. Martin Burrell, Minister of Agriculture; "Report on Serum Therapy in 1861," by Sir James Grant; "What the Daughters of the Empire Are Doing Towards the Prevention of Tuberculosis," by Mrs. Albert E. Gooderham, regent of the Imperial Order of the Daughters of the Empire; address by Dr. von Frederich Franz Friedmann of Berlin; formal opening of the Ottawa new sanatorium, the gift of the Hon. George H. Derby, by H. R. H., the Duke of Connaught; "How the Municipality May Best Deal with Tuberculosis," Dr. Chas. O. Hastings, medical health officer of the city of Toronto; "Some Newer Features of the Anti-Tuberculosis Campaign," Dr. A. J. Richer, Ste. Agathe, Que; "Tuberculosis in Childhood," Dr. J. H. Elliott, Toronto; "Tuberculin in Dispensary Treatment," Dr. E. S. Harding, Montreal; "The Tuberculosis Problem in Ontario," Dr. J. W. S. McCullough, chief health officer of Ontario.

The report of the able secretary of the association, Dr. G. D. Porter, Toronto, contained many interesting facts. Attention was drawn to the excellent progress that is being made in Canada in the campaign against tuberculosis. In Ontario, for instance, the new Health Act making tuberculosis a notifiable disease is a long step in advance. Nova Scotia, however, promises the most advanced legislation of all the provinces by a bill which will provide for some four new institutions for advanced cases, besides a maintenance allowance. The dispensaries in the larger cities scattered throughout the country are providing excellent agencies for controlling tuberculosis. It is pointed out that the most promising and recent feature of the campaign in Canada is the greater interest taken in the children. The open air schools, preventoria, and children's clinics are the latest developments.

The annual meeting of the Canadian Medical Association will take place in London, Ontario, from June 24 to 27 under the presidency of Dr. H. A. MacCallum. London is one of the most picturesque cities in Canada and for Canada easily accessible. A full program has been arranged. On June 26 two symposia will be held, one on diseases of the stomach, the discussion on which will be led by Dr. Alexander McPhedran, Toronto, the other on the thyroid led by Dr. A. J. Ochsner, Chicago. On the last day clinics will be conducted, the medical by Dr. Frank Billings and the surgical by Dr. John Murphy, Chicago. The addresses in surgery and medicine will be given respectively by Dr. Alexander Hutchison, Montreal, and Dr. L. F. Barker of Johns Hopkins University.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*May* 1, 1913.

1. Localized Osteomyelitis of the Long Bones. C. C. Simmons.
2. Infections of the Upper Urinary Tract in Infancy and Childhood. R. M. Green.
3. The Views of Plato and Freud on the Etiology and Treatment of Hysteria: A Comparison and Critical Study. J. W. Courtney.

1. **Localized Osteomyelitis of the Long Bones.**—C. C. Simmons concludes that a mild acute localized osteomyelitis is often overlooked in its early stages, but when recognized and treated promptly recovery usually occurs in a few weeks. It makes little difference what type of operation is performed in the subacute cases, or cases of less than one year's duration, if it is thorough. The results are almost uniformly good. In the chronic, long-standing cases of bone abscess operations such as are performed in the earlier cases with success often give unsatisfactory results, as the endosteum is not capable of filling in the defect. No definite rule as to the type of operation can be laid down, but each case should be considered individually. When possible it would seem best to obliterate the cavity with living tissue flaps.

2. **Infections of Upper Urinary Tract in Children.**—R. M. Green states that: 1. In infants and children infections of the upper urinary tract, though infrequent, are likely to occur without adequate apparent antecedent cause. 2. Their onset is acute, their clinical picture is definite, and their recognition is often missed on account of their simulation of other infectious conditions. 3. Their two most usual forms are acute pyelitis and acute inflammatory nephritis. 4. The latter is most usually hematogenous in origin, the former probably proceeds by lymphatic extension from the intestine. 5. Predisposing causes are calculi, constipation, phimosis, anal fissures, and foci of infection elsewhere. 6. The classical signs of both are pyrexia, pyuria, and tenderness in the costovertebral angle. 7. The differential diagnosis depends on the examination of the urine. 8. The treatment consists in rest, milk diet, aqueous diuresis, moderate catharsis, urotropin with sodium benzoate, potassium citrate, or vaccine; in obstinate cases surgery to be resorted to only as a final measure.

3. **A Comparison of Plato's and of Freud's Theories of Hysteria.**—J. W. Courtney states that the essential features of Plato's and of Freud's theories are identical. Plato regarded the uterus as an animal which desires ardently to engender children. When it remains sterile for a long time after puberty, it endures this state with difficulty; it grows angry, rushes here and there through the body, causing either a globulus hystericus, a syncopal attack, or some other of the well-known hysterical manifestations. There are mental and emotional attributes ascribed by Plato to the uterus, and considered by him as the *vis a tergo*, which impel it upon its course. These attributes consist, on the one hand, of intense strivings, desires, and impulses on the part of the uterus to get itself fecundated and, on the other hand, of anger and other violent emotions aroused by delay or failure in the accomplishment of its designs. Freud simply shifts the above-mentioned attributes to their real sphere—the mind—and assumes an unconscious but stormy conflict among them as the cause of the outbreak of hysterical symptoms. To paraphrase the language of the Freudian pathology, there is waged in the mind of the victim of hysteria a conflict between two groups of ideas or mental processes which cannot be brought into harmony with each other. One complex of mental processes is, for some reason or other, of such a kind as to be inacceptable to the main body of the personality. The personality fails to assimilate it, will have nothing to do with it, tries to forget it, to submerge, to repress it. The repressed complex then takes on an automatic existence and acts as an irritating foreign body in the same way as any foreign body that has not been absorbed. Modern pathology is in itself a sufficient refutation of the etiological portion of Plato's theory. A very little close reasoning should serve to dispose of Freud's. The author's first objection to it is that it is absolutely arbitrary, in that it takes into account one element only of the many which compose that very complex product called personality. His second objection is that it is entirely illogical. It looks upon the symptoms of hysteria as voluntary on the part of the sufferer, *i.e.* a sort of compromise between unconscious sexual desire, longing and striving, and the repressive activities of a likewise unconscious mind. Hence, it asks us to believe that a voluntary act may at the same time be an unconscious one—in other words, that the will can operate without the conscious mind being aware of its operations. There are numerous other objections to the theory. One of these is to the effect that it locates the patient's trouble entirely within the realm of ideation and emotion absolutely without regard for the fact that the way human beings feel, talk, and act is but a reflection of organic sensation. In other words, it deals with the language, actions, and emotions of the psychoneurotic quota of humanity as a pure abstraction, without regard for their organic source.

### New York Medical Journal.

*May* 3, 1913.

1. Hematuria. V. C. Pedersen.
2. Shoulder and Arm Paralysis of Poliomyelitis. B. Bartow.
3. Anomalies in Cardiac Rhythm. T. Howard.
4. The Travels of a Nail. G. Rosenbaum.
5. Paraurethræ. J. L. Herman.
6. Bibromyoma Uteri. W. P. Healy.
7. Carcinoma of the Stomach. J. V. O'Connor.
8. The Internal Treatment of Nephritic Diseases. H. Strauss.
9. Chronic Nephritis. G. Parker.
10. Edema of the Glottis. G. Kirby Collier.

1. **Hematuria.**—V. C. Pedersen points out the great importance and the grave possibilities of even minute degrees of urogenital hemorrhage. No bleeding is so scanty, but that it merits immediate and prompt investigation, because it may be the earliest sign of conditions essentially progressive and incurable excepting with the aid of surgical intervention practically at the moment of the earliest possible diagnosis. Such intervention may be removal of the offending lesion or at least adequate and energetic, well-balanced treatment. The rule to follow is, therefore, that any hematuria must be traced to its source and cause without delay.

2. **Shoulder and Arm Paralysis of Poliomyelitis.**—B. Barkow notes that holding the humeral head in contact with the glenoid cavity by artificial suspension of the humerus from the acromion fulfills at once one of the chief indications in the treatment of the deltoid and arm type of residual paralysis. Arm weight, normally sustained by the shoulder muscles and capsular ligament, then becomes

transferred to the scapula. This procedure removes the arm weight from the paralyzed muscles, thereby eliminating one of the main obstacles to improvement or recovery. The plan proposes the insertion of specially prepared silk strands in tunnels drilled through the acromion and head of the humerus; these, tied on top of the acromion, hold the humeral head close to its articulation. The drag is at once removed from the deltoid muscle and joint capsule, as shown by obliteration of the depression below the acromion.

3. **Anomalies in Cardiac Rhythm.**—T. Howard notes that the least significant type of cardiac irregularity, known as sinus arrhythmia, or youthful irregularity, is actually a mere exaggeration of certain normal variations in the heart's rate. Extra systole denotes a definite cardiac involvement, though not always an irrevocable damage. The most serious form of arrhythmia has been known by many names, as absolute or perpetual arrhythmia, disorderly rhythms, delirium cordis, nodal rhythm, etc. It is readily recognized, as the beats follow each other in most haphazard fashion, large and small, long and short, all jumbled in together. It has been shown that the underlying condition is one of auricular fibrillation. The chief importance of the latter from the therapeutic viewpoint is the remarkably beneficial effect which digitalis exerts in this condition. Heart block may or may not present an irregular pulse. The pulsus alternans consist of a series of alternating large and small beats, the time being regular, which obviously should be distinguished from a pulsus bigeminus in which each beat is followed by a pause. The pulsus alternans is due to an insufficiency of the contractile power of the heart. The cause of paroxyomal tachycardia is still veiled in obscurity.

4. **The Travels of a Nail.**—G. Rosenbaum reports the case of a child who swallowed a long wire nail. A series of six radiograms were taken. All told, the nail was in the alimentary tract fourteen days. Four days it lodged in the stomach and six days were required to complete the journey through the small intestines, and the remaining four days for its passage through the large intestines. The child had daily evacuations during this period, and, while it was quite restless during its stay in the ward, it was in no sense ill. The temperature never rose above normal.

5. **Paraurethræ.**—J. L. Herman states that congenital doubling of the male urethra does not occur in the absence of double penis. Double urethra in the female has been observed in association with double bladder, and Furst reports a case of double female urethra unassociated with any malformation of the urinary bladder. The latter is the only instance of this abnormality in the literature, the authenticity of which has gone unchallenged. Accessory canals of the penis, except fistulæ, the result of cloacal defects and urinary fistulæ of the penile urethra, as a rule demand no treatment if uncomplicated by a Neisserian or other infection. Infection of the urethra is usually, but not always, associated with infection of the abnormal canal and either may be the source of infection to the other.

6. **Fibromyoma Uteri.**—W. P. Healy concludes that uterine fibromyomata are very common. Heart murmurs with slight hypertrophy seem to occur more often than in other conditions. The lesion is not endocardial, but myocardial. Operation is not indicated unless the tumors are producing symptoms likely to interfere with the patient's health.

7. **Carcinoma of the Stomach.**—J. V. O'Connor notes that there is a tendency among physicians to make a diagnosis of indigestion or some other condition, without first trying to satisfy themselves that something more serious does not exist. If there were more early cases submitted for operation, the mortality following the operation for carcinoma of the stomach would be lessened, especially in those cases of slow growth. When the tendency toward making a too rapid and careless diagnosis no longer exists or is greatly diminished, one can look forward to a lower mortality following such operations as pylorectomy, and partial or complete gestrectomy.

8. **The Internal Treatment of Nephritic Diseases.**—H. Strauss states that if one assumes that uremia in many cases is no more than autointoxication by retention, we must arrive at the deduction that we should dilute the toxins and try to wash them out of the body. Furthermore, one should not allow any alimentation which could be considered as a cause of autointoxication, or one should reduce it to a minimum. Meat, especially, seems to be noxious. The author believes in a general diminution of albuminous alimentation, but up to such a degree only that the heart nourishment does not suffer. It has been proved that an adequate exhibition of liquids aids in expelling the sediments of metabolism. It is much more desirable to combat the danger of poisoning than to prevent heart attacks. In applying strict cures, *i.e.* cures in which the amount of salt should not exceed 2.5 grammes per diem, the milk allowed to the patient must also be taken into consideration, while saltless butter only should be allowed. Small doses of digitalis possess a special effect upon the kidneys, besides being a cardiac tonic. For that reason it is advisable to employ a preparation which is a combination of digitalis and theobromine, for the purpose of freeing the body from water. Sudorific treatments, which formerly possessed a great reputation in combating uremia and dropsy, have lost a great deal of their prestige through late researches.

9. **Anemia in Chronic Nephritis.**—G. Parker reports a case which simply illustrates the severe degree to which anemia in nephritis may proceed. The viscosity of the blood was practically nil, and the bloodvessel tone must have been of a very low order. The blood stains on white cloths were extremely pale. Doubtless the two factors, namely, injured and permeable vessel walls of poor tone and loss of clotting power in the blood itself, each participated largely in the production of hemorrhage.

10. **Edema of the Glottis Associated with Epilepsy.**—G. K. Collier reports a fatal case of this condition. Tracheotomy had unfortunately been decided upon too late, after ineffectual attempts had been made to perform intubation. Pulmonary edema, accompanying serial epilepsy, status epilepticus, and even single seizures, is frequently met with, but the case herewith cited, in which edema of the glottis occurred, is unusual. The mechanical theory, in explanation of pulmonary edema, can be readily accepted in cases of epilepsy where there is a marked increase of capillary tension produced by an excess of blood from the right heart. The infectious and the noninfectious forms are seen, also the secondary forms, due to tuberculosis, syphilis, carcinoma, typhoid fever, scarlet fever, measles, and smallpox, and those following valvular disease of the heart and nephritis.

## Journal of the American Medical Association.

*May 3, 1913.*

1. Mycetoma in America. R. L. Sutton.
2. Shattering of Femur with Extensive Compound Injury of Soft Parts; Recovery Without Operation with Useful Limb. J. J. Buchanan.
3. Modern Steam Sterilization. M. Rubner.
4. A Possible Source of Danger in the Use of Antimeningitis Serum in Young Children. S. P. Kramer.
5. The Criminal Physique. A Preliminary Report on the Physical Examination of One Thousand Five Hundred and Twenty-one Prisoners at the Wisconsin State Prison. R. Sleyster.
6. The Identity of Entamoeba Histolytica and Entamoeba Tetragena. C. F. Craig.
7. A New Method of Treating Neuralgia of the Trigeminus by the Injection of Alcohol Into the Gasserian Ganglion. J. Grinker.
8. Puzzling Gastro-Intestinal Symptoms. Report of a Case. E. D. Walkins.
9. Benign Melanosis; a Supplementary Report. J. C. Stewart.
10. An Eye Lesion Following Two Intravenous Injections of Salvarsan but Relieved by Its Further Use. H. J. Levis.
11. Meatotomy: A Simple Method. S. H. Likes and H. Schoenrich.

1. **Mycetoma.**—R. L. Sutton states that, clinically, mycetoma can be divided into three varieties, the yellow or ochroid, the black and the red, so named from the color of the small granules suspended in the oily seropurulent discharge from the sinuses. The ochroid is the most common form and the red is extremely rare. Bacteriologically, the consensus of opinion favors the view that the two common forms, the yellow and the black, are due to different organisms though they are quite similar. The often repeated statement that the yellow variety is an actinomycosis is not supported by the weight of evidence in the literature and it is positively disproved by the results of Musgrave and Clegg in the Philippines. These authors think it probable that all types of mycetoma are due to streptothrix infection, but whether all forms are caused by the same organism or whether there is more than one species involved cannot be positively asserted.

3. **Steam Sterilization.**—M. Rubner points out that the beneficial influence of steam disinfection is exercised only on objects with large open pores and the power by which it enters is the difference between the specific gravity of the steam and that of the air in the pores of the materials to be disinfected. This is why the steam should be introduced into the apparatus from the top and the steam and air escape at the bottom, but this explanation is not quite sufficient; there may be some parts where the resistance is too great for it to penetrate and articles should not be too tightly packed when subjected to the heating. The action on the microbes takes place first by coagulation of the protein and the amount of water and salt contained in the organism aids the coagulation. It is the lesser amount of these substances in the spores that makes them more resistant. Steam at 100° C. exercises a chemically destructive action, also, and the greater the saturation of the steam the greater is its destructive power on the germs. The discovery of formaldehyde meant a great step in advance for the doctrine of steam disinfection, and the author gives an account of his experiments with steam formaldehyde disinfection. By it even the most delicate objects are not injured, and the process has been developed to an extent that large apparatuses have been made in which whole ambulances can be disinfected. It is even possible to construct one large enough to disinfect whole railway cars.

4. **A Danger in the Use of Antimeningitis Serum.**—S. P. Kramer reports six cases of death coming on with respiratory paralysis a few minutes after the injection of antimeningitic serum and two cases in which the respiratory paralysis was relieved by artificial respiration, the children dying later from the disease. In a previous article he had reported cases of respiratory paralysis following the lumbar injection of cocaine and from the similarity of the cases here reported he considers these latter to be of toxic origin. He quotes from his experiments on dogs in which it was shown that methylene-blue injected into the subdural space could find its way through the central canal and, aided by the ciliated epithelium, into the ventricular system of the brain. He performed the experiment of injecting antimeningitis serum and a solution of tricresol of the strength used in the serum, into the subdural space. There resulted respiratory paralysis and the author concludes that the tricresol is the offending agent and that serum containing 0.5 per cent. of tricresol cannot be safely used for injections in young children.

7. **Alcohol Injection into the Gasserian Ganglion.**—J. Grinker states that the greatest advance in trifacial neuralgia was made when Schlösser, a Munich ophthalmologist, announced his method of injecting alcohol into the branches of the trigeminus at their exit from the skull. With the comparatively easy technique discovered by Levy and Badouin this has become a distinct addition to the physician's therapeutic armamentarium. In some cases, however, this fails and a less peripheral operation is demanded. Gasserectomy is a serious operation and necessarily one of last resort. As alcohol had shown its efficacy in the peripheral injection, it has been sought to introduced it into the ganglion itself to avoid the more dangerous method of extirpation. To F. Härtel of Biers clinic belongs the credit of having worked out such a method. The author has had the opportunity of observing Härtel's technique and has employed it once in his own practice in a case which he reports.

8. **Puzzling Gastrointestinal Symptoms.**—E. D. Watkins reports the case of a boy of 7 years reared under the best hygienic conditions in whom there developed symptoms both peculiar and puzzling. Although fed on breast milk up to 18 months the patient had almost continuous dysentery which persisted for five years. Frequent vomiting occurred. At 2 years so-called "cyclic vomiting" began. This was ushered in with a mild tonsillitis after exposure to cold and wet. All anti-emetics failed. Constipation and distention accompanied the vomiting and enemata were necessary on account of stomach sensitiveness. Marked emaciation followed each violent attack, which occurred about four times a year. Clinical findings were unimportant. The last and worst attack came on in December, 1912, and lasted two weeks. Normal saline per rectum was the only thing that produced any good effect on vomiting. An organism resembling *Entameba histolytica* was found in the stools. Treatment was begun at once with colonic irrigations of silver phosphate, copper phosphate, and quinine phosphate. Improvement soon followed, which led to the belief that the periodical attacks of vomiting were due to the presence of the ameba.

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## The Lancet.

*April 26, 1913.*

1. The Principles and Technique of the Operative Treatment of Malignant Disease of the Mouth and Pharynx. W. Trotter.
2. Bacteriological Evidence in Support of Intestinal Intoxication. J. C. G. Ledingham.
3. Vaccination for Various Infections with Living Micro-organisms. (Besredka's Method.) W. Broughton-Alcock.
4. The Tests for Acetoacetic Acid, including a Simple New Test. W. H. Hurtley.
5. Freud's Theory of Dreams. W. Brown.

1. **Surgery of Malignant Disease of Mouth and Pharynx.**—W. Trotter states that an important question to be decided in every case is whether the disease is to be attacked in a two-stage or a one-stage operation, and as a corollary whether the gland operation or that on the primary growth should be done first. In the great majority of cases there can be no doubt that the two-stage operation is necessary. The attempt to accomplish in one sitting the two very complex procedures can only lead to excessive danger to the patient or a risk of incomplete removal of the disease. The only exception to this rule is in the case of epilaryngeal tumors. Here the primary growth cannot be attacked until the glands have been removed, and on account of the situation of the growth the gland operation even cannot be done with any safety without a preliminary tracheotomy. As to the sequence of the two stages the following general rules are those upon which the author decides. If the primary growth is in such a situation and of such size that rapid union can be obtained after removal of it, then the first stage should be on the primary growth and the second on the glands. This is chiefly in early tongue cases. In such cases the whole treatment can usually be completed in a fortnight. Where the primary growth is such that rapid union is not probable (*e.g.* where the jaw has to be divided), the gland operation should be done first. This has its special disadvantage in the danger of pneumonia of an extensive neck operation when there is an ulcerating growth in the mouth, but the special advantage is that the gland operation is much easier when done first. Where the glands

hinder access to the primary growth three courses are possible: (a) Gland operation first (glands very large). Tracheotomy is usually necessary. (b) Primary growth and partial gland operation first (usually tonsillar cases). (c) Single-stage operation (epilaryngeal cases). Where the primary growth or gland mass is of uncertain operability the one which is the more doubtful should be attacked first. The essential steps of the operation on the primary growth are as follows: Every operation for removal of a tumor must begin with a definite stage devoted to obtaining access to the mucous surface of the tumor. This is usually a perfectly formal anatomical procedure which applies to all cases when the same region is affected. As soon as the tumor is fully exposed a systematic attempt must be made to disinfect the region, and during the subsequent removal of the growth every effort must be made to preserve the wound from contamination. The surface of the ulcer should be cauterized, the surrounding mucous membrane cleansed with alcohol and the region of the tumor packed off so that mucus is prevented from flowing into the wound. The tumor is then excised with the size and form of surrounding margin dictated by the nature of the case. The wound from which the tumor has been taken must be closed by suture and such other plastic procedures as are necessary should be carried out.

3. **Vaccination with Living Microorganisms.**—W. Broughton-Alcock records the favorable results that he obtained with the use of sensitized living vaccines. He conducted his research as an assistant to Professor Besredka in Metchnikoff's laboratory at the Pasteur Institute. The success attending the use of sensitized living typhoid vaccines has already been published. The author's recent efforts have been directed against infections by various strains of staphylococci and streptococci; and against those due to the gonococcus. The sensitization of the bacteria is effected by the use of an antiserum. For streptococci the antistreptococcus serum as prepared at the Pasteur Institute is used. The antigonococcal and antistaphylococcal sera are prepared in the goat. For the gonococci the author leaves them with the antiserum 12-24 hours at 37° C. and 12-24 hours in his room. For the staphylococci and streptococci he leaves them with their respective antiserum for one hour at 37° C. and all night at 0° C. The quantity of serum depends on its richness in sensitizing substances. In cases of gonorrheal orchitis and epididymitis most of the patients were free from pain after the first injection. In four cases of gonorrheal rheumatism the results were remarkable. After the first injection and within forty-eight hours acutely inflamed joints that one could barely touch, in one case of fifteen days' duration, were freely movable without pain. The exudation disappeared in three days. Vertebral pain and painful nonsuppurating ganglions were also rapidly relieved by the first injection. The cure persisted when patients were seen one month later. The only instances in which there was not complete relief within a week were those of subacute tendinitis without exudation. They necessitated at least one to three weeks' injection treatment. The author found, however, no advantage of the living sensitized gonococci over the dead organisms. In sixty cases of staphylococcus infection treated with sensitized living staphylococci, there was no instance of failure to markedly ameliorate the condition.

4. **A New Test for Diacetic Acid.**—W. H. Hurtley describes this new test as follows: To 10 c.c. of the urine add 2.5 c.c. of concentrated hydrochloric acid and 1 c.c. of a 1 per cent. solution of sodium nitrite; shake and allow to stand two minutes. Now add 15 c.c. of strong ammonia, followed by 5 c.c. of a 10 per cent. solution of ferrous sulphate, or a solution of ferrous chloride of equivalent strength (2 grm. of iron in 100 c.c.). Shake up, pour into a 50 c.c. Nessler glass, and allow to stand undisturbed. It is not advisable to filter. A beautiful violet or purple color is produced. The reaction is a slow one, and the speed at which the color develops depends on the concentration of the acetoacetic acid in the urine; the color deepens for several hours after its first appearance. The explanation which the author offers of the test is that the acetoacetic acid is converted by the nitrous acid into isonitrosoacetone, which forms a salt with the ammonia; the ferrous salt then produces a purple-colored salt from the ammonia salt by double decomposition. That isonitrosoacetone in alkaline solution forms colored salts on the addition of ferrous sulphate was first shown by Martha A. Whiteley. The test has been tried on several normal and on a large number of pathological urines, and on the urine of patients taking salicylic preparations; but only urines which react with the other tests for acetoacetic acid give this test. Acetone does not give the test, but an aqueous solution of ethyl acetoacetate gives a pure blue color—not a purple—and it only gives the blue color when much more nitrite is used than is prescribed in the test above. As regards delicacy, the test, when performed on a solution of sodium acetoacetate, prepared in the way already described, shows at a dilution of 1 part of acetoacetic acid in 50,000 parts of solution.

## British Medical Journal.

*April 19 and 26, 1913.*

1. Malingering, Valetudinarianism and Their Prevention. Byrom Bramwell.
2. Malingering. C. J. Bond.
3. A Plea for Medical Referees Versus Inspectors. Sir John Collie.
4. Studies of Beriberi. Further Facts Concerning the Chemistry of the Vitamine-Fraction from Yeast. C. Funk.
5. Cutaneous Indications of Alimentary Toxemia. J. Galloway.
6. Chronic Intestinal Stasis. A. F. Hertz.
7. The Bacteriological Evidence of Intestinal Intoxication. J. C. G. Ledingham.
8. The Etiology and Treatment of Puerperal Eclampsia. R. A. Gibbons.
9. The Uses and Abuses of Proprietary Foods in Infant Feeding. H. C. Cameron.
10. Prevention versus Cure in Modern Practice. C. J. Whitby.
11. A Case of Chronic Plumbism in which Multiple Aneurysms Occurred. R. G. Chase, M. M., B. C.
12. Unusual Fertility in Syphilitic Parents, Associated with Anomalous Involvement of the Children. H. Ferguson Watson.
13. Gonococcal Urethritis in a Boy Aged Seventeen Months. A. Smith and C. S. McKee.
14. Tetany in Acute Suppurative Appendicitis in an Adult. B. Hughes.
15. Adrenalin in Chloroform Anæsthesia. H. T. Depree.

1. **Malingering and Valetudinarianism.**—Byrom Bramwell draws a distinction between malingering, the conscious and deliberate simulation of disease or exaggeration of symptoms and valetudinarianism, the unconscious or subconscious simulation of disease or exaggeration of symptoms. (1) There are cases in which perfectly healthy persons feign disease, induce disease, or claim that they have received an injury and profess to be suffering from symptoms due to that injury. (2) There are cases in which after an accident or injury the results or remains of previous disease are said to be due to the injury. (3) Cases occur in which patients who are suffering from the effects of an accident or injury or from ordinary illness not due to accident or injury, exaggerate their symptoms, or do not get as well as they should be expected to do, but continue to suffer and go on claiming compensation.

5. **Cutaneous Indications of Alimentary Toxemia.**—J. Galloway states that the outward manifestaitons group themselves easily in four main categories: (1) Those resulting from disturbances of the blood vessels which disappear leaving no permanent trace. In this category may be grouped the varieties of urticaria, evanescent or of long duration, and the types of erythema, including exudative and vesicating forms. (2) Morbid conditions in which an inflammatory lesion progresses to actual infiltration of the integuments with cellular elements and terminating in persisting deformity such as dilatation of blood vessels, atrophy, persistent dermatitis, ulceration, and scarring. (3) Purpura in its different forms—punctate, diffuse, and often

associated with other hemorrhagic manifestations. (4) Pigmentation due to increase or abnormal distribution of pigments closely related to those of the normal type, such as melanin, or in other cases to pigments more recently derived from hemoglobin and due to hemolysis resulting from the circulating intestinal toxins.

6. **Chronic Intestinal Stasis.**—A. F. Hertz reaches the following conclusions: When precautions are taken to prevent errors in diagnosis, it is found that intestinal stasis never leads to gastric stasis. Intestinal stasis does not lead to duodenal kinking, dilatation, or ulceration, and duodenal ulcers are associated with an unusually rapid passage of chyme out of the stomach and through the whole of the small intestine. Iliac stasis is a normal phenomenon and results from the action of the ileocecal sphincter. Iliac kinks are comparatively rare, and do not directly increase the normal iliac stasis. The normal iliac stasis may be increased by spasm or absence of relaxation of the ileocecal sphincter, as a result of disease in the neighborhood of the cecum, including perhaps iliac kinks. Ptosis of the intestines does not lead to stasis, except in rare instances, at the splenic flexure, a pelvic cecum and a pelvic transverse colon being compatible with perfect health and normal intestinal action. In most cases of constipation a single part of the bowel, such as the rectum, pelvic colon, ascending colon, or splenic flexure, is alone involved, and treatment should therefore be directed to the affected part only. In those cases in which the whole of the colon is involved medical treatment almost invariably succeeds, but when it does not, ileosigmoidostomy, with or without colectomy, is indicated.

8. **Puerperal Eclampsia.**—R. A. Gibbons concludes that in spite of all the labor which has been spent upon investigation, we know of nothing which we can definitely state gives rise to the disease, although everything seems to point to a poison circulating in the blood as being the cause. Statistics recently gathered show that the best treatment is that of rapidly emptying the uterus—by whatever means this may be most safely accomplished—after the first few convulsions; that is to say, without indefinite delay. The woman and the child are thereby given the best chance of life; in fact, the maternal mortality has been lowered in the hands of some to under 5 per cent. The greater the delay in carrying out this treatment after the onset of the first convulsion, the greater will be the danger. The time is not far distant when, by continued research, the knowledge of the actual cause will provide one with a weapon to surely prevent the onset of this disease, and relieve the accoucheur of the future of one of the most terrible complications of the lying-in room.

10. **Prevention versus Cure.**—C. J. Whitby states that the time has long passed when it was customary to think of disease as a something extra-natural—a visitation of the invisible—to be combated by amulets and spells. But the traces of this conception have lingered until quite recently in the minds of even the most enlightened. Now they are well-nigh obliterated; pathologist and physiologist, tunnelling in opposite directions, have met on common ground. We think of disease in terms of health, and of health in terms of disease. Health seems to be in the main conditioned by the functional equilibrium of various glands; and since now one, now another of these glands takes the lead and evokes the antagonism of the others as the rhythm of growth and development proceeds, it is hardly too much to say that, from the chemico-vital aspect, a series of autointoxications, followed by slowly acquired immunities—that is to say, of illnesses and recoveries—is the normal course of events. Dentition, puberty, adolescence, menstruation, sex life, the climacteric, afford, even in the healthiest individuals, common ground for the physiologist and the pathologist. There is a pathological factor in all health, and a physiological in all disease: the two conditions overlap, and merge into one another by imperceptible gradations. So preventive and curative medicine meet when a disease due to functional inhibition of a given set of glands is treated by the administration of full doses of the missing internal secretion, thus affording immediate relief of symptoms as well as the interval of rest required by the damaged organs. Much of modern surgery belongs equally to the preventive and curative spheres.

12. **Unusual Fertility in Syphilitic Parents.**—H. F. Watson reports the case of a family in which the father, aged 29, and the mother, aged 21, both showed evidence of syphilis, although they denied ever having had this disease. In the course of twenty-two months there were three multiple pregnancies, with a total of six children. The parents and the children all gave a positive Wassermann reaction. The manifestations of syphilis appeared to be more severe with the successive pregnancies. There were no abortions.

14. **Tetany in Acute Suppurative Appendicitis.**—B. Hughes notes that the condition of tetany occurring in adults is not altogether common. Perhaps the commonest conditions with which it is associated are gastro-intestinal disorders (gastritis, dilatation of the stomach, and intestinal parasites), pregnancy, and operations upon the thyroid gland; sometimes it complicates the infectious fevers, notably typhoid. Less rarely still is it associated with certain poisons taken into the system, such poisons being lead, alcohol, and ergot. It is said to complicate cerebral and cerebellar tumor, but this must be extremely rare. Tetany associated with surgical operation upon the thyroid gland is a very rare condition. It has been said that tetany occurring in this last-named condition is due to removal of the parathyroid bodies, and experimental work seems to lend support to this statement. The author reports a case of tetany associated with acute suppurative appendicitis.

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## Berliner klinische Wochenschrift.

*April* 14, 1913.

**Treatment of Progressive Paralysis.**—Westphal asks if this affection is ever curable or self-limited. Apparent recoveries are commonly interpreted as latent cases. Tuczek now admits that his well-known "cure" is open to doubt. Alzheimer has shown that irreparable damage is caused during the earliest stages of the affection, and agrees with Spielmeyer that we can, therefore, obtain no anatomical proof of a cure. On the other hand, no one can deny that a lifelong arrest represents a clinical cure. In theory such results are possible chiefly in cases in which an early diagnosis is made; and the frequency with which neurasthenia precedes paralysis furnishes us with a hint for early diagnosis and treatment. But while the true neurasthenic seeks the physician upon the first appearance of his symptoms the future paralytic pursues exactly the opposite course and does not reach consultation until brought to the practitioner by his friends. If the diagnosis between the two maladies is then doubtful a positive Wassermann may decide the matter, although there is no reason why any syphilitic may not be a neurasthenic and *vice versa*. With diagnosis made sufficiently early the patient should, for form's sake, receive a vigorous Hg and KI cure. This usually cures and eliminates pseudoparalysis so called, i. e. early cerebrospinal syphilis. While salvarsan not infrequently causes the Wassermann reaction to become negative it is powerless against the disease. After enumerating all the newer resources which have been said to possess more or less power over the disease (tuberculin, nuclein, etc.) the author touches upon Noguchi's recent demonstration of the spirochete in the cerebral cortex in general paralysis. This discovery appears to imply that the microorganism undergoes some sort of mutation which cannot be attacked by the salvarsans.

**Hemolytic Icterus.**—Mosse asks what diseases most require differentiation from this affection otherwise known as "chronic acholuric icterus with splenomegaly." Five types of disease are mentioned as requiring differentiation from hemolytic icterus and of course from one another. The first is pernicious anemia, in a number of cases of which diagnosis has been difficult. Next is mentioned Gilbert's familial cholemia, regarded by some as identical with hemolytic icterus. Chalier, a recent writer, regards the former as a mild type of the latter, and points out well-marked dissimilarities. Third comes Banti's disease, including its hemolytic form. Fourth in order is polyglobulia, both of the compensatory and cyanotic types. Finally is added the Gaucher type of splenomegaly, because some of the recorded cases might have been termed hemolytic icterus.

**Action of Phosphorized Oil in Rickets.**—Gessner seeks to explain the beneficent effects in rickets of phosphorized cod-liver oil as follows: The disease is preeminently one of metabolism in which the normal transformation of fetal red bone marrow into the permanent, yellow fatty marrow does not occur. The fat hunger of the affected organism, however produced, cannot be satisfied by the artificial milk mixtures, however closely these correspond isodynamically with mother's milk. Since phosphorized cod liver oil apparently corrects the metabolic defect and puts a stop to the demineralization of the body, the rationale should lie in part in the ready assimilability and utilization of cod-liver oil and partly in the general stimulation of metabolism by the phosphorus component.

## Münchener medizinische Wochenschrift.

*April* 15, 1913.

**Physiological Surgery.**—Under this title Klapp of Prof. Bier's clinic mentions with approbation Krehl's well-known work on pathological physiology and states that it should be supplemented by a work on physiological surgery. Physiological therapeutics is of course largely surgical in character, and naturally the physiological idea should be omnipresent in all therapeutics. From this viewpoint a great deal of treatment of approved value is distinctly unphysiological. Under this head the author includes asepsis. As illustration he cites peritoneal interventions. One thing is certain, to wit, whatever else we do, we must maintain physiological conditions as far as possible. Rehn states that whenever the intraabdominal pressure has been disturbed we must seek to restore it. This necessitates the closure of all intraabdominal incisions. The author asserts, on the other hand, that this is a matter of subordinate significance. He claims that closure of these openings makes for recovery, not only because of restored pressure conditions, but also for the reason that other physiological factors are favored—avoidance of lowered temperatures, and of loss of water, while the normal peristaltic motion of the intestines is maintained. All this amounts simply to the dictum that if we open the peritoneum for any purpose it is physiological to close it as soon as the desired result is attained or found unattainable. In general making good of losses is at the bottom of physiological surgery, for example, in all kinds of plastic and artificial substitution.

**Quadruplets.**—Hauser relates a case of this relatively rare occurrence, which may be summed up as follows: The midwife who had attended the case brought to the author a quadruplet placenta. Labor had been so rapid that no time was allowed to summon a medical man. The mother was a Pole, aged 29, V-para, all previous births single. As gravida on this occasion she had presented an early and unusually large circumference of body, so that she had suffered considerably and had been nearly unable to do any work for three weeks before delivery. Pains were strong, patient well able to bear down, and six and one-half hours after beginning of labor a child was born. Twenty minutes later a second one was extracted in incomplete foot presentation. After a short cessation of pains a third child arrived within another hour as a complete breech case, while one hour later the fourth child was born after the same presentation. Despite the great distention of the uterus the afterbirth period was brief and the large placenta was successfully expelled entire. The first two children were male and the last two female. The author found that the mother was a normal, powerful woman, with no physical stigmata. The generative organs and accessories were normal throughout and there was no history in the families of multiple birth. The children all perished within 25 hours. They had the status of prematures (28-30 weeks) and some no doubt could have been saved in incubators—two or perhaps three. Having looked into the literature of the subject the author gives some conclusions which affect quadruplets. First, mothers of quadruplets are older than mothers of triplets just as mothers of triplets exceed in age mothers of twins. Second, the number of primiparæ who give birth to more than one child diminishes with the increasing number of children at a birth. Third, mothers of quadruplets are nearly all multiparæ who have borne six or more children; while mothers of twins and triplets have usually borne from two to five times. However, the number of quadruplet births is really too small to be available for statistics.

## Deutsche medizinische Wochenschrift.

*April* 10, 1913.

**General Management of Infectious Diseases.**—Grober believes that generally speaking the prognosis of infectious diseases under modern treatment has improved. The factors which have brought about this result are numerous. Taking them more or less at random they comprise among others certain sedatives and hypnotics which have supplanted the narcotic morphine, the intravenous administration of digitalis derivatives and adrenalin, antipyresis with drugs and hydrotherapy, citric acid and HCl lemonades as aids to appetite, improved technique in regard to feeding, especially in bringing up the calories, revolutionary technique in nursing the sick, specific antibacterial therapy, including partial solution of the carrier problems, antitoxin therapy (in diphtheria), chemotherapy (in syphilis), vaccinotherapy, etc. Naturally in all specific and quasi-specific plans of treatment prophylaxis enters into consideration and is usually of much greater purport than treatment. The author gives due credit to old empirical medicine for the modern use of drastics, diuretics, etc., in infections. The power of purgatives, notably calomel, in the early period of acute infections is as well recognized to-day as ever. Under diuresis as a resource against infections no one drug is mentioned, although the reader thinks at once of urotropin as filling the indication to-day. Drastics and diuretics are naturally regarded to-day as possible eliminators of bacteria.

**Eye Studies in German East Africa.**—Krusius concludes his article on this subject as follows: Cataract seemed common in both negroes and Hindoo aliens along the coast. In addition to the indigenous trachoma mentioned as fearfully prevalent in the interior numerous imported cases were also seen in the coast towns. Pneumococcus affections of the eye were strangely absent, although other pneumococcus diseases were prevalent. While so-called scrofulous affections in general are very rare, the ulcers of the cornea commonly associated with that condition were quite common. Recurrent fever, a spirillosis, appears often like syphilis to set up iridochoroiditis. Malaria also is suspected of being the cause of several lesions.

## Insurance Medicine.

**So-Called Heart Murmurs.**—Steiner writes in reference to the exaggerated importance accorded to cardiac murmurs—with all due deference to the cardinal significance of the latter as symptoms of actual disease. He illustrates the possibility of overvaluation of murmurs by two case histories. The general tendency of all medical examiners is to disqualify a prospective risk whenever a murmur is heard on the ground that no one can assert with certainty that the subject is not the victim of a valvular lesion. The manual of instruction used in such cases states plainly that however faint the murmur, and even after but one examination, the examiner must reject or postpone the applicant. There is only one exaction laid upon him, viz., he must be sure that the sound is of cardiac origin. Thus if the ordinary examination in standing posture is negative, the applicant must throw extra effort on his heart by prescribed exercises and further be examined lying down and with the stethoscope. The examiner may only postpone in the case of young subjects. These commands make it easy for the examiner, but no real service is rendered either to the company or the applicant. Collateral subjects and notably that of the functional capacity of the heart are ignored. When we treat a patient with cardiac trouble we have always in mind the test of efficiency, not the acoustic phenomena. Numerous distinguished clinicians may be quoted to this effect. Murmurs are not necessarily indicative of endocarditis. If truly valvular in origin they may be due either to muscular or nervous action upon the valves. The first case cited occurred in a young man who was well nourished and apparently in florid health. There was no history of disease worth mentioning. During examination for military service a "cardiac defect" was brought to light. The subject was active all day long on a truck farm, was not fatigued at night, and danced and rode a wheel without effort. The author's examination made after considerable physical exertion yielded a pulse of 68, respiration 9. There was heard, however, over the apex and replacing the first sound, a long drawn, blowing murmur. This was at once pronounced congenital in origin, and without the least influence on the economies of the heart. Should an applicant like the preceding be rejected outright? Recently the young man broke his leg, as the result of a severe accident; yet his nervous and muscular system showed not the least reaction. The second patient was a German-American, who traveled extensively for a large business house. Always in a state of psychic tension from the exactions of his business, he further sustained great pecuniary losses in the panic of 1907. While sojourning at Kissingen a cardiac murmur was discovered, and was heard by the patient himself with the autostethoscope. The organ itself gave no trouble whatever. The author heard an intensive murmur, propagated from the apex to all the valves. Despite the demands upon the patient's energy the pulse and respiration were but 64 and 16 respectively. There was a transitory emphysema pulmonum, and both this and the murmur are certain to yield to a period of rest. The murmur was doubtless of nervous origin, and technically would rank as initial insufficiency. In both the preceding cases there were no alterations in the cardiac chambers while the second pulmonal sound was normal. It was therefore impossible to estimate the degree of the defect. Compensatory states of the heart could be excluded. In support of his strictures on overvaluation of heart murmurs the author would further cite the statistics of survival of applicants rejected for "cardiac defects" (these naturally including actual lesions with compensation). These take cognizance of survival to 10, 15, 20, and 25 years.—*Blätter f. Vertrauensärzte d. Lebensversicherung, No.* 1, 1913.

**Decreased Mortality the Work of Insurance Companies.**—Dr. Eugene Lyman Fisk says the belief that the mortality-rate, among selected insurance lives, is a fixed quantity, obtains among many insurance men, notwithstanding much recent evidence to the contrary. In a medico-actuarial investigation, covering 43 American companies, a marked improvement was shown, from 1885 to 1890, among the younger-age groups, and a distinct deterioration among those over age 60. The death-rate throughout the civilized world has been falling, due, not to the increased span of life, but to the saving of lives in the younger-age groups, through the increased scientific knowledge of the prevention and control of communicable diseases. That science can lessen the death-rate from diseases caused through faulty living and the mere wear and tear of life, cannot be quetioned. This is the work of the insurance companies for the present and the future.—*Popular Science Monthly,* April, 1913.

**"The Man on the Street" and Health-Conservation Work.**—When approached on the subject of prolonging his life by adjusting himself to his environment, "the man on the street," otherwise the average careless liver, displays an uneasiness and some skepticism about the means required for materially increasing his span of life without surrendering some of the indulgencies, which, to him, make life worth living. Dr. Eugene L. Fisk says that such men must be taught that the lengthening of life by betterment of living, is not the niggardly hoarding of existence, without regard to its color, quality, or meaning, but a warfare against needless misery, preventable diseases, mental and physical inefficiency, and the pitiable handicaps, that not only shorten life, but take from it the color and satisfaction that make it worth living. The prolongation of life, through well-living, is the work of insurance companies through health-conservation, and justifies the financial expenditure. The work in hand is to make life more livable, through the joys of health and right-living and not through the fleshpots of our friend, the careless liver.—*Popular Science Monthly,* April, 1913.

**More Careful Examinations Needed.**—Dr. F. de Havilland Hall, in a meeting of the Medical Officers' Association for the discussion of "The Prevention of Fraud in Life Assurance," stated that it was not so much fraud of the patients as carelessness of the examiners that was the trouble. As a rule, the country examiners are too happy-go-lucky and the city examiners too rushed. It is not right to have the regular family physician also the medical examiner for life assurance, as awkward positions arise in this way which put the physician at a decided loss. The smallest troubles should be carefully looked into, especially that of "hoarseness," which so often means a tuberculosis or a beginning epithelioma of the larynx. Dr. Hall says that the medical examiner should take no account of the amounts the persons are insured for, but should make his examination of the applicant for a $500 policy with as much care as he would that of the $10,000 risk.

# Book Reviews.

Diseases of the Stomach, Intestines, and Pancreas. By Robert Coleman Kemp, M.D., Professor of Gastro-intestinal Diseases in the New York School of Clinical Medicine; late Gastroenterologist to the New York Red Cross Hospital; Gastrologist to the West Side German Dispensary; Consulting Physician, Gastrointestinal Diseases, to the Manhattan State Hospital; Member American Medical Association, Academy of Medicine, etc. With 388 illustrations, some in colors. Second Edition, revised and enlarged. Price, cloth, $6.50 net; half morocco, $8.00 net. Philadelphia and London W. B. Saunders Company, 1912.

The high standard which was established by this work when it first appeared two years ago is maintained in the present edition. Several new subjects have been added, including chapters on colon bacillus infection and on diseases of the pancreas. The section on duodenal ulcer has been rewritten. The section on visceral displacements is particularly full and satisfying, the mechanical methods of treatment available to the general practitioner being described in detail with the aid of many clear illustrations. Among other features of this edition are the endorsement of Chittenden's views on excessive protein diet, the discussion of typhoid fever and its intestinal complications, the dietetics of this disease and the view that excessive calorie values have been advocated, a chapter on diverticulitis, and a discussion on reflex gastrointestinal disturbances emanating from disease of the gall-bladder, appendix, and other organs. Attention may be called to the comprehensive manner in which the pancreas and its diseases are discussed, about 100 pages being devoted to this subject. There is an allotment of about 40 pages to the subject of simple duodenal ulcer. The illustrations in this work are particularly numerous and represent a high order of artistic merit. The methods of treatment are described in great detail and should be of distinct service to the general practitioner. The work represents one of the best of its kind that has appeared within recent years.

Physical Diagnosis. By Richard C. Cabot, M.D., Assistant Professor of Medicine in Harvard University. Fifth Edition. Revised and enlarged with 5 plates and 268 figures in the text. Price $3.00 net. New York: William Wood and Company, 1912.

The appearance of five editions of this work within a period of seven years is ample evidence of the popularity which it has achieved. The author has set a high standard for books on physical diagnosis, and none of the many volumes on this subject that have appeared with the past few years have approached this standard as closely as has the admirable work of Dr. Cabot. The skill of the mature teacher is discerned on every page, in the clearness and fullness of the subject matters, in the omission of non-essential and problematical details, and in the provision of illustrations that actually assist in the elucidation of the text. These illustrations are numerous, are well selected, and represent the best in the photographer's and printer's art. The author has continued the excellent plan of describing in a single section all the methods of getting information about any organ—methods both of the clinic and of the laboratory. It may be noted that the present edition has been thoroughly revised and enlarged, containing many important editions, such as the following: Sections on the phlegogram and the arteriogram; the recasting of the section on blood pressure and the arrhythmias, as well as on those on neoplasms of the lung and pleura, on subphrenic abscess and peptic ulcer. There is also a more extended description of the *x*-ray method of examination of the stomach.

Diseases of the Mouth. For Physicians, Dentists, Medical, and Dental Students. By Prof. Dr. F. Zinsser, Director of the Department of Dermatology at the City Hospital, Lindenburg; Dozent at the Academy for Practical Medicine, Cologne. Translated and edited by John Bethune Stein, M.D., Professor of Physiology at the New York College of Dentistry; late Instructor in Genitourinary Diseases at the College of Physicians and Surgeons (Medical Department of Columbia University), New York City. With 52 colored and 21 black and white illustrations. Price, $7.00. New York: Rebman Company, 1912.

This work is printed as a pictorial atlas of syphilitic and other lesions of the mouth, and aims to bring together the material that is scattered in the clinics of dermatology, laryngology, surgery, internal medicine, pediatrics, and dentistry. The introductory portion of the work consists of a short review of the subject of syphilis, and a description of the lesions of the mouth that resemble the lesions of secondary or tertiary syphilis. The illustrations consist of a series of 46 plates, comprising 52 superb colored and 21 black and white illustrations. These portray with a vividness and with almost the reality of the actual case, the various primary, secondary, and tertiary syphilitic lesions of the mouth and throat; the forms of stomatitis produced by mercury and other drugs; geographical tongue, tuberculosis of the mouth, etc. The dentist and dental student whose opportunities for the study of constitutional diseases presenting mouth lesions are limited, will find this volume a valuable guide, and so will the physician and the medical student. The practical importance of a knowledge of the differential diagnosis of lesions of the mouth is fully realized when one is confronted with a case presenting a suspicious sore on the tongue. Is a certain tonsillar patch syphilitic or is it the manifestation of a Plaut-Vincent angina? This is but one instance of many that may be recalled by the busy practitioner. A book of this kind enables one to survey in a short time the appearance of many different kinds of lesions. The work of the translator reveals his broad knowledge and sympathetic interest in the subject matter. He has made a number of additions to the text, such as the description of the luetin reaction in syphilis. The printing, binding, and artistic features of this book represent the best of the publisher's art and are strictly in keeping with the excellent manner in which the subject matter has been handled.

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. Thirty-first Year. Price $3.50. New York: E. B. Treat & Company, 1913.

This annual, of which the years are becoming long, in the 1913 edition maintains its high standard. It is alphabetically arranged and thoroughly indexed and the subject matter is written by recognized authorities. In a concise form it presents up-to-date medicine and surgery, so that it supplies a valuable vade mecum to the busy practitioner. A beginning has been made in the present volume of a glossary of new terms, a useful addition when the many new words which have been introduced into medical literature during recent years are considered. The book is well printed, excellently illustrated and inexpensive and we have no hesitation in recommending it strongly to members of the medical profession.

Diseases of the Eyes. By C. Devereux Marshall, F.R.C.S., Surgeon to the Royal London (Moorfields) Ophthalmic Hospital and Ophthalmic Surgeon to the Victoria Hospital for Children, Chelsea. Fully illustrated. Price $3.75. London: University of London Press, 1913.

Mr. Marshall's book is one of 303 pages. It is well printed and quite well illustrated. There are no colored plates. The work is designed for the use of students and general practitioners. The descriptions are brief and concise. There is no departure from the ordinary construction evidenced in the work, except, perhaps, that the theory of color perception developed by Mr. Eldridge-Green is described and adopted over the theories of Young-Helmholtz and Hering. The concluding chapter is devoted to a description of the visual requirements for various public services in the United Kingdom. The work is well suited for those who wish to obtain only a brief authoritative view of the subject.

Prisms: Their Use and Equivalents. By James Thorington, A.M., M.D., Author of "Refraction and How to Refract," "The Ophthalmoscope and How to Use It," "Retinoscopy." Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Fellow of the College of Physicians of Philadelphia; Member of the American Ophthalmological Society; Ophthalmic Surgeon to the Presbyterian Hospital, etc. 118 illustrations, of which 18 are colored. Philadelphia: P. Blakiston's Son & Co., 1913.

Thorington's work on prisms is one that will be welcomed by ophthalmologists, as this is a subject that is covered too briefly in the average text-book on diseases of the eye, and one on which the practising ophthalmologist is seeking information. The volume is one of 144 pages, copiously illustrated by figures in the text and colored plates. Abstruse formulæ are avoided. The subject is treated as simply as possible consistent with a practical presentation. The work cannot but become popular with all who are engaged in the study of optics and ophthalmology.

# Society Reports.

## CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

*Held in Washington, May 6, 7, and 8, 1913.*

(Special Report to the MEDICAL RECORD.)

*Tuesday, May 6, 1913.*

THE PRESIDENT, DR. WILLIAM C. GORGAS, IN THE CHAIR.

**Study of Renal Function.**—Dr. HENRY A. CHRISTIAN of Boston read the first paper on this subject. He stated that renal function was of interest to the physician and the surgeon alike, since organic and pathological changes made it important to know how the kidneys were functioning concomitantly and singly, in order that they might know what form of remedial measures were appropriate; for upon this depended life and the question as to the advisability of a surgical risk. Observation had been made in the changes affecting the color, reaction, concentration, constituents, both qualitatively and quantitatively, in both normal and abnormal urine, with the object of correlating these findings with clinical conditions. The writer reviewed the work of a number of investigators as to the effect of various substances on renal function and discussed the selective action of certain of these substances for the glomeruli and of certain others for the tubules since such observations had promised to be useful in locating kidney lesions. He said that in the diagnosis of pathological lesions of the kidney function tests might be expected to yield information on two points: First, as to whether the kidneys were diseased, and, second, as to what type of pathological lesion they showed. A review of the methods of testing renal function by measuring the excretion of salts, water, lactose, potassium iodide, and sulphonephthalein, by measuring the retention of non-protein nitrogen in the blood, by the determination of diastase in the urine, by determining indican in the blood, or by estimating urinary acidity, showed that great aid had been given clinically as to whether the kidneys were diseased, but distinctly less help had come in answering the second question, as to what type of lesion the kidney showed. As in all forms of clinical diagnosis, not a single test, but many, yielded data on which diagnosis must be based. In this sense functional tests had yielded new data, and a discriminating valuation of these new data, along with a consideration of data furnished by other methods of examining patients already long in use, justified them in making a diagnosis of renal condition with increased certainty. They could expect fewer failures in renal diagnosis than before they had these functional tests, but so long as increased study failed to yield a demonstrable anatomical change to correspond with all observed functional variations, so long would they remain unable to make anatomical diagnoses which in most cases would prove to be correct when the pathologist examined the kidney.

**The Prognostic Value of Studies of Renal Function.**—Dr. L. G. ROWNTREE of Baltimore presented this paper. He stated that the clinical diagnosis being made, in any individual case before offering a prognosis, certain problems must be investigated: 1. What pathological condition is found to underlie the clinical picture? 2. Was the condition localized to the kidney or was any other system as the cardiovascular involved? 3. What was the functional capacity of the kidney? Was this temporary or permanent? 4. Was or was not the condition one amenable to treatment? All the tests had proved of value, but some much more so than others. Those of most importance in testing renal capacity were dye substances, especially the phthalein; among the tests of retention through the quantitative determination of the concentration of certain substances in the blood, cryoscopy, total incoagulable nitrogen, and urea were most important. The phthalein test was of value in all pathological conditions, whereas certain cases of severe nephritis, even in uremia, showed no marked increase in rest nitrogen or urea So the presence of cumulative phenomena was of the greatest significance where prognosis was concerned, while their absence was not. Functional studies revealed only the excretory capacity of the kidney, but did not make the diagnosis or settle the prognosis. They should be used routinely in conjunction with other procedures. Where the phthalein test revealed decreased renal capacity, one of the blood tests, urea, rest nitrogen, or cryoscopy should be employed to determine the presence or absence of cumulative phenomena. Dye substances other than phthalein need not to be employed prognostically, since they yielded less quantitative and less reliable results and added nothing to prognosis. The phthalein test was the one for general use under all conditions. Its findings could be verified and its indications strengthened by the employment of selected tests in different conditions. The iodide and salicylate tests were not of great prognostic value. Lactose was unreliable, since its total suppression occurred in moderate lesions of a given type, but suppression in chronic nephritis indicated a severe lesion. The urinary urea was of value only in relation to unilateral renal disease. Phloridzin had a tendency to exaggerate the degree of functional injury and hence it was not of great value. Salt in a marked tubular hyposthenuria carried much prognostic significance, otherwise the chlorides were of only slight prognostic value. If with the water test a very marked oliguria or anuria persisted it was of significance. Diastase might be tremendously depressed in moderate degrees of renal injury, while at other times it was not affected proportionately to the injury, hence it was not reliable for determining total capacity. In unilateral cases the diseased kidney was correctly indicated. The value of total coagulable nitrogen and of urea in the blood had been enhanced by the introduction of newer and more accurate methods by Folin and Marshall. These tests could be used interchangeably and had about the same value. Increased concentration of these substances did not always occur in severe renal involvement; hence their normal concentration in the blood did not indicate normal kidneys. Their increase signified renal injury and the extent of the increase was of extreme value in determining the extent of the injury. They were not of value in determining the diseased kidney where only one was involved. Cryoscopy occupied a similar position, with about the same significance. A study of the combination of these tests was needed in order to determine the extent of parallelism in their findings. With cholesteremia they had had no experience and with the Ambard constant not sufficient experience to justify an opinion.

**The Study of Renal Function; Its Bearing on Treatment.**—Dr. THEODORE C. JANEWAY presented this phase of the subject. He declared that in the domain of chronic diseases of obscure origin, diagnostic skill, inadequate though it might be, usually ran far ahead of remedial measures. In no disease was this more true than in the medical diseases of the kidney. From a broad standpoint the sulphonephthalein test and the less satisfactory ones which it had replaced had greatly contributed to the effectiveness of the treatment. The medical diseases of the kidney which were grouped under the comprehensive term nephritis did not permit of so easy an attack after recognition. The internal treatment of renal disease had made definite progress along two lines: (1) The study of experimental nephritis in animals had made clear the existence of isolated disturbances in the excretion of individual constituents of the urine, and the existence of definite types of abnormal reactions of the diseased kidney to stimuli. These had been found to have their counterparts in human nephritis. (2) The accurate study of the salt and water exchanges in human nephritis and their relation to edema, had resulted in a precise and scientific method of treatment which was highly effective in certain types of renal disease. Vascular hyposthenuria must be sharply differentiated from the hyposthenuria due to primary disturbance in the ability to secrete sodium chloride. This discrimination was of real importance in the management of clinical nephritis. Closely allied to this state of irritability of the vessels was their susceptibility to fatigue. This factor like the allied phenomenon of vascular over-irritability should never be overlooked in treatment. It justified the custom of giving caffeine diuretics intermittently, and in comparatively small doses. When a diuretic of this type was needed he used theocin. The initial dose of these drugs should always be small, because of the possibility of constriction resulting. The response of the kidney vessels to digitalis seemed to follow somewhat the same laws. Inasmuch as such a drug as digitalis would produce dilatation of the kidney and constriction of the remaining splanchnic vessels, it seemed not impossible that polyuria and hypertension were in their fundamental pathogenesis identical. In these vascular types of nephritis he urged restriction in the use of water and the common beverages. Water tests were most important guides to treatment, especially in the convalescent stage of acute nephritis. When testing for the excretion of water there should be absolute uniformity in the salt intake. Therapeutic means of combatting nitrogen retention were conspicuous by their absence, aside from enforcing a physiological economy of protein on general principles. The observation of the uncoagulable

nitrogen of the blood was of great importance prognostically, though it did not make the outlook any the less grave. In the same way the sulphonephthalein test could not serve in any way as a guide to treatment. In chronic passive congestion of the kidney, it might frequently afford a most useful measure of the degree of improvement in kidney function during treatment. The same considerations held good for Wohlgemuth's tests for diastase. The treatment of edema was much more satisfactory. The salt-poor diet remained the most effective measure in the treatment of edematous types of subacute and chronic nephritis. With the restoration of kidney function and the absorption of edema, they had observed the return to normal of greatly delayed potassium iodide excretion. The potassium iodide test gave an interesting side light upon kidney function and its restoration in these cases. What constituted normal elimination depended upon the test employed. He had been using the von Monakow test with starch paste and nitric acid which made forty-four hours the upper limit. The one essential guide to treatment, as Widal's studies had shown, was the absolute salt balance. It was immaterial practically, though highly important theoretically whether the cause of the salt retention was in the tissues or in the kidneys. Salt and water were retained and the edema was largely dependant upon this fact. The graphic record of daily salt intake and output, with the weight curve, permitted of exact knowledge concerning the degree of salt retention. The management of the salt intake in such cases of renal edema was altogether analogous to the management of the carbohydrate intake in mild diabetes. As long as edema persisted the salt of the diet should be kept at a minimum. After the absorption of the edema the ability to excrete added salt should be tested occasionally, and the increase in intake governed accordingly. By the exact estimation of sodium chloride tolerance and the adjustment of intake at a point below the ability of the kidney to excrete salt, chronic cases might be kept free from edema, over long periods of time, even where functional recovery was not complete. At the same time the management of the water balance demanded equal attention. This was of special importance in acute nephritis. Intelligent care was possible only with the use of graphic records of water and of salt intakes and outputs. The relation between intake and outputs in both substances was of more importance than absolute amounts. Not the least contribution which the study of renal function had made to the treatment of nephritis was its method of visualizing the actual response of the kidney to the therapeutic measures from day to day.

Dr. George Dock of St. Louis said he could add very little to Dr. Janeway's remarks, but he wished to call attention to the noteworthy fact that in the discussion of this interesting subject they had had statements from men who were actually doing the work and observing its results, both experimentally and clinically. While the examination of the urine was very old, they had until recently suffered from a tendency to rely on single diagnostic methods. For a long time they laid great stress upon the presence of albumin, or casts, or urea, neglecting the more complete and thorough examination of the patients, such as the blood-pressure, etc., the importance of which can scarcely be overestimated and which they can no longer afford to neglect. Immense practical gains had already been made from this careful study of the renal function, and still more could be looked for in the future, after more of these cases had come to autopsy. They needed not only a great deal more knowledge regarding kidney function, but also regarding kidney pathology. After they had applied the methods that had been described, and no doubt others that would be discovered, to the kidney functions during life, then more complete anatomical investigations should give us an exact knowledge for prognostic and diagnostic purposes.

Dr. Hugh Cabot of Boston said that many surgeons had neglected this question of kidney function, assuming that the study of the urine would give them sufficient data. It had already been pointed out, however, that the routine examination of the urine would not give to the surgeon information upon which he should feel justified to act, although many still held the assumption that it would. The speaker said he wished to discuss the value of these studies of the renal function in enabling one to tell beforehand the probable safety of any operation. In his work he had come to rely upon comparatively few. None of the color tests seemed to him to possess the value of the sulphonephthalein test of Rowntree and Geraghty. He had employed this in a large number of cases and had come to esteem it very highly. The other test he had found valuable was the one of the nitrogen retention, which had recently been placed within the reach of the average clinician. These two tests, properly carried out, gave one a very accurate idea of the prognosis.

**Address of the President.**—Dr. William C. Gorgas delivered an address, illustrated by lantern slides, on "Sanitation at Panama in Its Relation to Sanitation in the Tropics Generally." In Panama, in 1904, when the United States began the construction of the Panama Canal this was universally looked upon as being one of the most unhealthy spots in all the tropical world; that this reputation was not undeserved but was warranted by the facts in the case; that the sanitary measures put into effect by the United States had enabled constructors of the Canal to proceed for the past nine years with no greater loss from death than would have occurred if the same work were being carried forward in most parts of the temperate zone; that this work had been accomplished at no very great expense; that, therefore, similar results could be obtained either by communities or individuals in any part of the tropics, was his argument. Mr. Roosevelt, who was in the Presidential chair at that time, was thoroughly familiar with the work in Cuba, and believed that the mosquito theory had been demonstrated beyond peradventure. Yellow fever began steadily to decline. In November, 1905, they had their last case of yellow fever in the City of Panama, and in May, 1906, their last case in Colon. During 1906 the Sanitary Department was raised to its maximum efficiency and in May, 1907, the sanitary work had been as follows: 1906, 39.51; 1907, 24.50; 1908, 8.68; 1909, 7.55; 1910, 7.50; 1911, 7.65; 1912, 6.37. These figures demonstrated that by 1908 they had a force of 38,000 employees on the Isthmus who were working in the sun, rain, and weather at the hardest kind of labor, with a death rate from disease of 8.68, not any greater than the same men doing the same work would have had in the United States. It was interesting to speculate upon what would have taken place if the President and Secretary of War had acted in accordance with the recommendations of the Executive Committee and decapitated the men in charge. The methods used were based upon the belief that yellow fever was a disease due to filth. By December, 1906, they had 9,000 non-immune connected with the commission, of whom 6,000 were Americans. It was probable that half of these would have died of yellow fever had sanitation remained as it was in 1905. This would probably have involved a suspension of the work till conditions could have been corrected, thereby causing a delay in the completion of the canal of at least two years, and very probably public opinion would not have supported a project that involved such loss of life and the work would have been delayed indefinitely. The actual expense of the measures that had accomplished these results had not been large, about $365,000 per year, or about one cent per day per capita. The expense of sanitation in the Isthmus was frequently spoken of as being large. This came about from the fact that official reports gave the expense of the Sanitary Department as having averaged $1,600,000 a year. And very naturally in reading this report one assumed that the expense of sanitation and the expense of the Sanitation Department were synonymous, but not more than one-fifth of the expense of the Sanitary Department was involved directly in the measures that had resulted in the eradication of yellow fever and the control of malaria. More than half the expense of the department was involved in the care of the 1,800 sick that they had constantly on hand. It was quite evident that if people could be protected against tropical conditions at Panama, the same thing could be accomplished in any other part of the tropics. The results at Panama were so in the limelight that they were attracting attention from all parts of the tropics.

## MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(Special Report to the Medical Record.)

(*Continued from page 872.*)

SECTION ON PEDIATRICS.

*Wednesday, April 30.*

**A Case for Diagnosis.**—Dr. George T. Imrie of Rochester presented this case and asked for opinions regarding the diagnosis. The patient was a baby, nine months of age. She was the sixth child of healthy parents and at birth was normal in appearance and weighed 8¾ pounds. She had been unable from the time of her birth to hold up her head as a normal child did. She had had attacks of cyanosis, an enlarged abdomen, and bulging over the sternum. There was also a heart leakage.

Dr. Charles Herrman of New York said that he considered the data characteristic of Mongolian idiocy with congenital heart lesion. The case recalled one that he had been a short time ago in which the temperature went to 109.4° F. The child died and no autopsy could be obtained. There must have been a defect in the regulating center.

Dr. George Van Gaasbeck of Kingston said that about 50 per cent. of these cases had congenital heart trouble and easily succumbed to tuberculosis or pneumonia.

Dr. Thomas S. Southworth of New York said that the prognosis in this case was very bad because of the early inability to hold the head. The child's head measured only 15⅝ inches in circumference and it seemed probable that if the child survived she would be microcephalic. She would probably belong to the low grade type of Mongolians. The history and poor development of the child did not hold out any definite hope that she would make much progress.

**The Use and Abuse of Sugar in the Diet of Children.**—Dr. Elias H. Bartley of Brooklyn presented this paper. He said that although sugars were among the most valuable articles of human diet, yielding their heat and energy on the least energy of the organs of digestion and assimilation, yet this very characteristic made them harmful if taken in large quantities. Twenty years ago he had called attention to the clinical evidence of the harmful and far reaching effects of the excessive use of sugar upon the digestive organs, the mucous membrane, and the general health of growing children. The many years of observation since that time had only served to strengthen the convictions expressed at that time. The injurious effects to which he referred were, irritation of the gastric mucosa, gastric catarrh, interference with the digestion and absorption of fats and proteins, the production of excessive fermentation with the formation of irritating organic acids, attacks of so-called "bilious vomiting," acid intoxication, anemia, and general malnutrition. He attributed these results chiefly to the fermentative changes, especially of the hexoses as invert sugar, and of glucose taken as such. He now believed that sugars when taken into the empty stomach acted as direct irritants of themselves and that they rapidly generated irritant organic acids. Sugar incapacity soon developed in certain older children as well as in infants. Invert sugar and glucose were more injurious than cane malt or milk sugar. Cane sugar was partially inverted or converted into glucose and levulose by heating with organic acids. The fruit jellies, jams, etc., contained sugar that was partially inverted. Modern confectionery contained from 10 to 25 per cent. of glucose or corn sugar, made from starch by boiling with sulphuric acid. The early symptoms from sugar eating might begin a half hour after eating and seemed to be due to the local disturbance and not to a disturbed metabolism. There were six ways in which excessive sugar ingestion could be harmful: (1) by direct local irritation of the gastric mucous membrane; (2) by the production of excess of acids; (3) by interfering with the digestion and absorption of fats, because of the excess of solids in the bowel and consequent malnutrition and anemia; (4) the disturbance of carbohydrate metabolism; (5) the production of a condition of a form of acid intoxication, differing however from the better known acidosis of diabetes, cyclic vomiting, etc.; (6) by the remote effects in the nervous system and on the mucous membranes. The attention of the public should be called to the harmful effects of the excessive use in sweets in such a way as to check it.

Dr. Phillip S. Potter of Syracuse said that one writer had recently made the statement that the child should be given all the candy it wanted as this was a cry of Nature. Such a statement was pernicious. Urticaria, rheumatism, and respiratory affections in children might result from the ingestion of too much sugar. Dr. Potter reported several cases of children coming under his care who showed all the symptoms of tuberculosis but with no physical signs of that disease, neither did they respond to the von Pirquet test. After cutting down the sugar in the diet of these children they recovered. He cited another case in which extraordinary nervousness, bilious attacks, headaches, and malaise were cured by cutting down sugar. There were children who could digest and care for from 4 to 8 ounces of sugar a day while there were others who could not stand it.

Dr. Charles Herrman of New York said they were indebted to Dr. Bartley for his paper. Children showed a very variable degree of tolerance to sugar. Those cases that showed the symptoms of tuberculosis were the ones known as "susceptible," and they easily fell a prey to that affection.

Dr. George N. Jack of Buffalo said these cases that were known to be susceptible to tuberculosis were hypersensitive and had a high leucocytosis. A large amount of sugar increased the leucocytosis. The waste products of the blood were dumped along the bronchi, larynx, and follicular glands and later the changes here spread along the trachea and bronchi and set up an asthmatic attack.

Dr. William B. Hanbidge of Ogdensburg cited an instance where in a children's home an ignorant nurse fed the babies on sugar and water whenever they cried and a great deterioration in their health resulted. He knew of two children who were raised without any sugar and they were fine healthy children.

Dr. Elias H. Bartley of Brooklyn said that in regard to the children who did well although the mother's milk contained a high percentage of sugar, they should remember that all children would not have done so well as children reacted very differently to large amounts of sugar.

**Some Observations on Infant Feeding.**—Dr. Harry Rulison of Albany presented this paper. He stated that the normal healthy child had a tolerance for a wide variety of foods. In the feeding of the normal healthy child complicated formulæ and complex methods were not necessary. What was necessary was a knowledge of the nutritioual requirements of the child to be fed and a correct interpretation of the various signs of nutritional disturbance, together with the ability to refer them to the particular element in the food that was causing the disturbance. The failure to make a correct interpretation was the cause of most failures in infant feeding. The food should have sufficient caloric value to meet the needs of the child and should be well balanced in respect to its various constitutents. It need not approximate breast milk nor even resemble it. Both the percentage and the caloric methods had their value but should not permit either to hamper him in the treatment of the individual case. The problem as to whether it was better to feed by age or by weight was still with them. He was in favor of larger quantities at longer intervals. One feeding in four hours was frequent enough. There should be plenty of water between feedings. The early elimination of night feeding was desirable but not always possible. It was now the consensus of opinion that the proteins gave little trouble, even if they formed 8 or 10 per cent. of the total amount of food. He usually began by feeding from 1½ to 2 per cent. protein and increased the quantity to 3 or 4 per cent. by the end of the first year. Protein resulted in no harm provided a certain amount of whey salts were present. He took issue with Cowie and Lyon on the statement that little or no protein was split up in the stomach on account of the normal absence of hydrochloric acid. He had found that the protein in the stomach was completely dissolved during incubation when no hydrochloric acid was present. It had been discovered that the fats were split up by the pancreatic lipase to a greater extent than was formerly believed. While fat would seem easy of digestion theoretically it was a different thing in practice. There were many children who could not metabolize even a small quantity. The average requirement was 2 per cent. or less. Of the carbohydrates maltose was the most easily digested and assimilated and the least liable to fermentation, but it had not given him any better results than cane sugar. The use of lactose was based on theoretical considerations rather than on direct results. Starch digestion in infancy was not as difficult as was formerly believed. Many edemas were supposed to be dependent upon sodium chloride; some occurred without renal or cardiac lesions and were dependent upon faulty metabolism; these a salt free diet would sometimes clear up over night. Proprietary foods had their place but should not be used "hit or miss." The directions accompanying them should be disregarded. Whey feeding should be condemned in dyspepsia, intestinal intoxication, atrophy, and spasmophilia. The administration of lime water was to be avoided as a routine measure as it delayed digestion.

**Infant Feeding with Undiluted Cow's Milk.**—Dr. William B. Hanbidge of Ogdensburg read this paper. He said that twenty years ago his attention had been called to the advantages of whole milk by a sister who had charge of a number of babies in an institution. In November, 1912, he had reported a series of 39 cases collected from various sources, in 35 of which the results had been very satisfactory. He now had a more recent series of 50 cases, 15 of which were from his own practice. Of ten of these children who were healthy there was one that could not take whole milk. Dr. Hanbidge related a number of cases sent to him by other physicians in which the babies were fed successfully with whole milk after other methods had failed. He believed that children on a concentrated food like whole milk should be fed only when hungry. If they

slept and got a little behind in their nourishment, they could easily make it up. It was nature's way to feed both children and young animals only when they were hungry. In feeding experiments the important thing was to arrive at the truth irrespective of theory. It was possible that in trying to obtain a food that chemically resembled mother's milk they had been led astray. The process of digestion was too complicated for chemistry to be the final judge. They had learned that the stomach did not hold the dominant place in the processes of digestion that they formerly had thought it did. The muscles of the new-born babe were poorly developed and it was possible that in giving a highly diluted food dilatation and atrophy were caused which interfered with the proper emptying of the stomach. Possibly they were diluting the gastric juice so that the process of digestion was retarded. Might not the distention and muscle weakness in the bowels result in colic? Experiments had convinced him that from 1½ to 2 ounces or possibly 2¼ ounces of whole milk for each pound of body weight provided sufficient nourishment for twenty-four hours. A popular work on pediatrics considered 32 ounces about the proper amount of modified milk for an infant eight weeks of age; the same child on whole milk would require only from one-half to two-thirds that amount.

**A Practical Study of Goat's Milk in Infant Feeding as Compared with Cow's Milk.**—Dr. DeWitt H. Sherman and Dr. Harry R. Lohnes of Buffalo presented this communication. Dr. Sherman said their object was to learn if possible, the reason why goat's milk agreed better with some infants than cow's milk. The babies were selected at random from the inmates of St. Mary's Infant Asylum and Maternity Hospital of Buffalo. The goat's milk used averaged from 1½ to 2 per cent. richer in fats than the cow's milk used in the institution. A series of experiments in which test meals were given and withdrawn one hour from the middle of the feeding showed that the digestion of the cow's milk was slower. The curds of the goat's milk were smaller and more flocculent, corresponding to the appearance in test tube digestion. Dr. Sherman presented a table showing the greater stimulating effect on the stomach of goat's milk over that of cow's milk, and the greater stimulating effect of both as compared with proprietary foods prepared without milk, and finally the greater stimulating effect of all three as compared with barley water. So far as absorption and gain in weight were concerned their statistics were indefinite because the babies being institution babies were apt to gain slowly, owing to an epidemic of streptococcus infection which had swept through the infants' ward at the time these experiments were in progress, and because a certain number who were doing well were removed from the institution before the experiments were finished. There were 16 cases tested, on similar formulæ. Of these 12 gained more rapidly on cow's milk and four on goat's milk. The gain in the former group was in the ratio of three to one and in the latter group in the ratio of nine to one. The more thorough emulsification of the fat in goat's milk prevented the separation of cream upon standing as occurred in cow's milk. This fact might be an element in reducing the tendency to regurgitation in goat's milk as compared with cow's milk, and further might be a very important factor in lessening the liability to sour vomiting due to fatty acid fermentation, so common in high fat mixtures. On account of the small size of the fat globules, there was probably present in the goat's milk a smaller amount of the lower or volatile acids. The babies as a whole tolerated equally well similar amounts of goat's or cow's milk with the same diluents, but as the goat's milk contained higher fat percentage than the cow's milk, the children actually received more fat per feeding and hence a higher caloric value. It was consequently strange that more babies gained on cow's milk than on goat's milk modification. The stools of the infants on goat's milk were smaller and of a more vivid yellow color. The age did not influence materially the ratio of gain on goat's milk versus cow's milk, but the younger the baby the more evidence pointed toward a greater gain on goat's milk. The only conclusions that could be drawn were that in the child whose resistance was below par, goat's milk agreed better because it was less stimulating, because it contained fewer volatile acids, and because of its more flocculent curds which made it more easy of absorption by some children.

**Infant Feeding from a New Standpoint.**—Dr. Godfrey R. Pisek of New York presented this paper. He said that the history of infant feeding embraced many methods which had succeeded one another in popularity. They had had raw milk, pasteurized milk, whole milk, the percentage method, the caloric method, etc. They pasteurized the milk to eliminate bacteria and then added millions of bacteria in order to aid digestion. When one method was in vogue and every one followed that the situation was not so difficult, but when all of these methods were the fashion at one time matters became very complicated. Specialists denounced proprietary foods and then prescribed those same foods to their patients. A case had recently been reported to the writer of a physician who had the care of an infant whose nutrition was not progressing properly. The mother wanted to feed the infant condensed milk but the attending physician objected and adduced evidence for his stand from a textbook. The mother asked a consultation with the author of the textbook and that authority, much to the chagrin of the attending physician, prescribed condensed milk. What wonder was it with pediatricians preaching one thing and practising another that the laymen were bewildered and the general practitioner was in a hopeless predicament. Scientific feeding of infants was bound to fall into disrepute unless pediatricians restored harmony in their own ranks. Unless they got together and agreed upon fundamentals they must not be surprised to see the manufacturers of proprietary foods flood the market with literature which would carry weight with the lay public in the absence of any authority upon which they could rely. Students went from one clinic to another and heard their teachers make contradictory statements and the question arose "How was the general practitioner to know what to do when authorities flatly contradicted one another in what were supposed to be the fundamentals of infant feeding?" Scientific infant feeding consisted in doing what was right at the time for the particular infant. It was impossible to state in a book what was to be done under all conditions. Each procedure had its place and in that place was scientific feeding; out of its place it was unscientific. A statement made years ago might have been correct at that time and yet be incorrect to-day. The average student in an agricultural college or domestic science school had a better knowledge of the fundamentals of nutrition than the average medical practitioner. Fundamentals of physics, chemistry, bacteriology, and surgery were uniformly taught. In infant feeding it was different. Infant feeding must be approached from a new standpoint and they would do this when they concentrated their teaching on the broad general principles of the science of nutrition of which infant feeding was only a branch.

Dr. Charles R. Witherspoon of Rochester said that it took a man who practiced general medicine just long enough to have two babies under his care to learn that he could not feed all babies in the same way. In feeding an infant one should have a good reason for what he did. It was important to know the number of calories that one was giving but one should not depend entirely upon that; one should know the percentage of the different constituents in the food, but one should also know more. He should know about stools as a macroscopical examination of the feces would teach him much; he should know what a healthy baby looked like and what he felt like.

Dr. J. Roberts Johnson of Syracuse said that it must have occurred to some of them while listening to the papers that they were still far from having definite and settled convictions. Unless they did agree on fundamentals they would be the laughing stock of the layman. They should have a knowledge of the general requirements of the infant and then study the individual case. Proprietary foods had their place but should be under the control of the physician. In his experience he had had the greatest trouble with the excess of fat. The malt sugar was easier cared for by the economy than any other type of sugar. The use of goat's milk was not as practical as other methods because it could not be obtained in all localities.

Dr. George Van Gaasbeck of Kingston related an instance of one mother who had reared nine children feeding them at irregular intervals and all very healthy robust children.

Dr. L. A. La Fetra of New York said that the subject of infant feeding was of the utmost importance to them as it was the distinguishing mark of the pediatrician. At present there was confusion as to what method should be used in a particular case. The truth was that infant feeding was easy only on paper. Babies had thrived on every imaginable manner of feeding but this proved nothing except that the healthy baby was very resistant. The cases that were interesting to them were the cases of difficult feeding; from these they could learn something. In these difficult cases one must endeavor to select that particular form of food that would suit that individual baby. If the method chosen did not succeed, one should find out the cause of failure if possible. The papers on this subject had been exceptionally good. Dr. Rulison had spoken of the caloric method versus the percentage method; this was a mistake. There was no antagonism between the methods. Both were valuable and the two should be combined. Even if a

baby was not being fed in the way one thought it should be fed, if it was doing well it should be let alone. Individual babies differed in their capacities for sugars. One had to find out which sugar was suitable in each case. As to the salts, it seemed to him that they did not know much about them. The cases cited were exceptional cases. According to theory the edematous, water logged baby ought to have no salts; yet they gave them skimmed milk and the edema disappeared. How about the theory? As to whole milk feeding, one might take a baby that was vomiting an ordinary quantity of mother's milk, put it on concentrated food, giving it sufficient number of calories and the baby would do well. One badly nourished baby was cited as taking double the quantity of food supposed to be required, but the fact that the baby was badly nourished showed that it needed the excess. Having sufficient calories, sufficient liquid and a proper balance of the food elements, one was on the right road to the correct food. The statement that proprietary foods had no food value was not true. These preparations had a food value and could be made good use of. In their infant feeding at Bellevue Hospital they used a wide diversity of foods, top milk, skimmed milk, whey, *Eiweissmilch*, condensed milk, dried milk, and all forms of sugar and there was a place for each.

Dr. George Dow Scott of New York said that he had used the percentage method when that was the correct thing and had tried to use the caloric method, but he had given them up. It seemed to him that on the theory of the caloric method one might argue that cabbage had calories and therefore one might feed cabbage. One had to get down to the fundamentals, facts of proteins, carbohydrates, and fats. He emphasized the fact that fruit juices were absolutely essential for the normal child, either raw orange or pineapple juice, or the juice of stewed apples, pears, or prunes. In the feeding of infants, they needed the theory but should not lose sight of common sense.

Dr. T. Wood Clarke of Utica said that Dr. Sherman had done good work and that if more men had the patience to carry out work of this kind they would get results that would teach them something. Hydrochloric acid had a great deal to do with the formation of the curd. They must have curds but they did not want tough curds. Lime water, instead of decreasing the hydrochloric acid, increased it and was absolutely contraindicated. Sodium citrate acted entirely differently. It lowered the total acidity slightly and greatly increased the acid salts; there was no free hydrochloric acid, and only a little in combination, and no hard curd. Sodium chloride and citric acid were formed which were not so active in forming the curd. His advice was, therefore, to citrate the milk. A good test meal was of value. They should study the chemistry of the infant's stomach; this was a matter that was being grossly neglected.

Dr. Harry Rulison of Albany said that, in relation to the fermentation of lactose and maltose, he did not mean lactose was more fermentable than maltose, but lactose seemed to be more influential in producing diarrhea. He had stated his disapproval of lime water as a routine measure. Lime water had been used in the effort to make cow's milk like human milk and it was supposed that human milk was alkaline, but it was not always so. Again lime water had been supposed to facilitate casein digestion and to prevent curding. Curding was a natural process and should not be prevented. Again, lime water was used for its effect on acidity. This resulted in delaying the passage of the stomach contents and was not a desirable effect.

Dr. William B. Hanbidge of Ogdensburg said he had been conservative in his attitude toward whole milk feeding. One of the greatest mistakes in infant feeding was that of giving too much water. So long as the baby was thriving it was better to leave it alone. A good plan was to experiment first and to theorize afterward.

Dr. De Will H. Sherman of Buffalo said that in dealing with an irritable stomach one should bear in mind the foods that would be stimulating and those that would not have such an effect.

Dr. Godfrey R. Pisek of New York said that Dr. Rulison showed the tendency of the German school but that he would be more successful if he would take what was good from that school and apply it in connection with other methods. In regard to the long intervals between feedings, it should be remembered that the child's stomach had a tendency to empty itself rapidly. It might empty itself entirely in thirty-five minutes, and the child would often be ready to take more food. He had seen such instances.

Dr. Charles R. Witherspoon of Rochester spoke of the difficulties that confronted the general practitioner when it came to the subject of infant feeding. When the pediatrician was called in the family had confidence in him and were willing to wait for results, but often this was not the case with the general practitioner, and the only thing for him to do was to endeavor to win the same confidence that was bestowed on the specialist by informing himself more thoroughly on the subject of infant feeding.

Dr. Harry Rulison of Albany, in reply to the question as to what kind of test meals had been employed, said that they had used a great variety, matzoon, farina, with bismuth, and all kinds of liquid foods.

*Wednesday Afternoon, April 30.*

**Election of Officers.**—*Chairman*, Dr. Thomas S. Southworth of New York; *Secretary*, Dr. Joseph R. Roby of Rochester.

**The Physician and the Mentally Defective Child.**—Dr. Isabelle T. Smart of New York presented this paper. She declared that the problem of the defective child was demanding the earnest consideration of the State legislators, sociologists, and educators, but that up to a very recent time the physician had been content to allow the layman to enter this field of pediatrics and to control practically all that had been or was being done for this type of children. It was contended that physicians did not know how to diagnose these cases. This was a grave accusation and reflected uncomfortably on the acumen of medical men and women. Dr. Smart considered more particularly the borderline cases that were more or less of a puzzle. These were the children that the general practitioner was apt to pass over lightly, telling the family to wait until the child was seven, or fourteen, or twenty-one years of age. A strong plea must be entered for the careful and painstaking examination and study of every unusual child presented to any physician. Too often these children received no attention unless they were suitable for institutional care. The outcome in many of these borderline cases depended upon proper nourishment and correction of physical defects, as a large number of these cases of mental abnormality were dependent upon physical defects. Several investigators from the Vineland Laboratory of Psychical Research had obtained permission to examine immigrants at Ellis Island. Of 44 cases tested, 33 were selected by the medical inspector as probably mentally deficient. Of these 33, 15 proved to be mentally defective, while 18 were normal. Less than one-half had been correctly selected by the medical inspector, while seven-eighths were correctly chosen by the experts. There should be a thorough exhaustive examination by a scientifically trained physician in all these cases, by one who could get at causes and pathological conditions as well as the defects themselves. It was time for all physicians whose work was primarily with children to be up and doing so as to be able to meet the snap diagnoses of the untrained or partially trained so-called expert. Instead of lightly passing over the backward child he should be watched during all of his formative years; nervous manifestations should be noted; school progress and mental acumen measured; eyes, ears, throat secretions, heart, lungs, liver, all should come in for a share of attention. Special attention should be directed to hypersecretion and undersecretion, particularly with reference to the pituitary gland about which they know so little. The physician could not afford to be behind the times in this matter, but must keep abreast of the big social problems. It behooved them to make themselves wiser so that they could make an intelligent protest against laws that endangered the defective class and also normal children, for the normal child might later marry the unfit and so widen *ad infinitum* the vicious circle. It could be shown that it would be economy in the long run to provide State supervision for defective children.

Dr. Mary Sutton Macy of New York said that Dr. Smart had called attention to the child showing retarded development from infancy, but she had not emphasized it sufficiently. The consequences of retarded development, or of even a temporary arrest of development in some slight particular, were too little appreciated by physicians as a whole, whether they were specialists or general practitioners. Dr. Macy said that she had been impressed by the lack of data on the normal development of the child after the age of three years and especially so with the apparent tendency to neglect all differentiation between the digress of development of functions and organs in the child after six years of age and in the adult. If they were ignorant on these points as to the normal child, they could not expect to advance much with the abnormal, the retarded, or the arrested forms of development which appeared in the mentally defective. Dr. Macy said that she and Dr. Smart had collected data in the course of a routine examination of 6,246 school children in the public elementary schools of New York City. All the cases were sent up on the presumption that they were mentally deficient. The children were picked out by the pedagogical

authorities because of their inability to advance in the grades without repeating each term; some for nothing more than a reputation for "excessive badness," or for chronic truancy; but some gave physical and mental evidence of low grade imbecility or idiocy which was unmistakable to the least informed layman. Of all these cases, 13 cases were truly institutional cases of mongolianism, imbecility, or idiocy; 51.8 per cent. were found to be in need of some very specialized form of pedagogical training. The large percentage of sensorial defects, as well as of general nutritional and neurotic disorders, might have had some relation to the degree of mental inadequacy, since the proportions in all these conditions were so universally larger among those requiring the special training of the ungraded classes. Of those examined, 88.6 per cent. showed eye defects; 67.7 per cent. ear diseases; 70.3 per cent. defective teeth; 33.2 per cent. enlarged tonsils; 32.3 per cent. enlarged adenoids; 46 per cent. both tonsils and adenoids enlarged; 53.2 per cent. speech defects; 6.4 per cent. epilepsy; 5.8 per cent. chorea; 37.3 per cent. other neuroses; 8.2 per cent. were tuberculosis suspects; 17.5 per cent. showed cardiac weakness; 68.7 per cent. showed nutritional disorders. Dr. Macy also gave statistics from 10,000 cases showing relative physical defects which she had presented at the International Congress on Hygiene and Demography. These statistics gave some idea of the immensity of the problem with which they had to cope. In another series of 125 cases, which upon the first examination gave evidence of greater or less degree of mental deficiency, without exception, following upon proper medical and hygienic care and the correction of physical defects, and having the advantage of specialized pedagogical attention during periods of from two to four years, had so far recovered from their feeble-mindedness that they had been able to resume and maintain their places in classes of children of their own ages.

Dr. Godfrey R. Pisek of New York said that Dr. Smart had not overdrawn her statements. In the New York schools and clinics these cases presented themselves in large numbers, and they certainly made an appeal to one's sympathies. Some change was bound to be made within a few years which would put this class of children into the proper hands. There were not enough medical men who were fitted to handle them at present. The study and recognition of these cases really made a specialty within a specialty. There were in New York City children with well-marked cretinism, eleven and twelve years of age, who had never received any treatment. There was one group of defective children which was sent by the schools for examination and classification. Even if these cases were recognized, how were they going to help them. A fully equipped department with a hospital in connection with it was needed where there would be corrective appliances, a room for physical therapy, facilities for the treatment of eye and ear defects, etc. When the general practitioner got these cases he usually sent them for adenoid or tonsil operations, and, of course, they were little benefited. Simple but effective measures were needed to put these children in their proper places in the world. The matter of Letchworth Village was an economic question. If the State could be made to understand the drain that such a defective child was upon the family income and the time of the mother, and what a burden to society it became later, legislators might see that it was economy for the State to care for and train these children. The lack of data regarding the child after the age of three years was accounted for by the fact that the physician did not see him so often at that age and he had not yet come under the control of the school. Possibly the prize baby contests that were being held all over the country might bring this type of children to the attention of the physician. These contests at least offered a field for the pediatrician to get into touch with a large number of children.

Dr. Ira S. Wile of New York said that Dr. Smart had been exceedingly conservative. It was said that there were 3,000,000 defective children in the United States; that four per cent. of the school children of the country were defective to the extent of requiring institutional care. There were in the State of New York 12,300 children who should have institutional care. There was at present a bill before the Legislature asking for the appointment of a commission to examine all the children coming into the children's courts in order to ascertain to what extent this class of individuals were defective and with the object of providing proper custodial care for them. It was said that physicians knew but little about these cases, and it was far from his purpose to contradict that statement. The school teacher was interested in advancing the pupils and had opportunities for making comparisons that the physicians did not have. Often the condition of the borderline cases was due to conditions at home; sometimes it was due to insufficient nourishment; or it might be due to eye or speech defects. Again, it was not easy to recognize these borderline cases and the older practitioners had not had the opportunity of studying the problem. The Vineland Laboratory was creating a false impression and leading people to think that every one was defective simply because they could not all do a certain thing as well as some one else.

**Social Pediatrics.**—Dr. Ira S. Wile of New York read this paper, in which he called attention to the weak spots in the present method of teaching pediatrics. He stated that the purpose of the medical school was to supply the community with men who were trained in caring for the public health. If they failed to teach their students the methods of preserving health and life they fell short of their ideal purpose. The position of the physician had altered in the community in that he was no longer regarded merely as an individual capable of curing individual cases of disease, but as a specially gifted man, capable of guiding the public in matters pertaining to health. The problems of infancy and childhood should not be given a subordinate place in the category of medical problems. When one considered that one out of every five in the population was a child whose welfare might be considered as belonging to the department of the pediatrician, that practically one out of every three deaths within the registration area fell upon a child under fourteen years of age, and that practically one-fourth of the total mortality in the registration area occurred under the age of 2.68 years, the immense importance of the field of pediatrics was accentuated. Recognizing the social and economic forces which interfered with medical progress, it was important to train the medical student so that he would appreciate the difficulties with which he would have to contend. It was impossible to give a complete course in sociology to the medical student with the present distribution of time, but a physician with a knowledge of sociology was far better prepared to cope with social problems in the manner that the future generations would demand. Physicians were urging more careful instruction in hygiene in the elementary schools, and yet the practical social aspects of hygiene were neglected in the great majority of medical colleges in the United States. The teaching of pediatrics must be strengthened. Medical colleges should have specially trained teachers for this subject. The value of midwives, the importance of health registration, the value of milk depots, and infant consultations were certainly pediatric themes. The relation of day nurseries, boarding-out and convalescent homes, and babies' hospitals were intimately bound up in the mortality rate. The value of school nurses, medical inspectors, school clinics, child labor laws, and district nursing were not foreign material in a broad-visioned course in pediatrics. The necessity of open air schools, the problem of the prevention of blindness, the detection and care of defectives formed topics in social pediatrics which were at present holding the attention of welfare workers, while the physicians were not fully acquainted with their relation to pediatric medicine. Students were not made to appreciate the full social and hygienic value of breast milk. The fundamental causes of infant mortality were poverty and ignorance. The physician might not be able to relieve the poverty, but he could correct the ignorance and discipline its stepchild, neglect. Pediatric medicine should be taught in relation to community life. This was the only way in which the preventive phases could be presented to the student in their true relative importance. To adequately teach the conservation and protection of infancy and childhood, medical schools must be socialized in spirit. If pediatrists were to be leaders in the preventive medical work that was the present ideal of medicine, the pediatric teachers must be aroused to their responsibility.

**Certain Neglected Aspects of the Problem of Infant Mortality.**—Dr. Philip Van Ingen of New York said that efforts toward the reduction of infant mortality had been chiefly directed toward deaths due to diarrheal diseases, which constituted from 20 to 30 per cent. of the total mortality during the first year of life. The very marked reduction in the death rate among babies in the Borough of Manhattan, New York, had been chiefly among this group of cases. From 25 to 40 per cent. of the deaths under one year were due to congenital debility, prematurity, etc. The figures for these deaths had not changed to any extent during the past seven years. An analysis of the deaths under one week and under one month showed a practically constant infant mortality rate for the group under one week, and a very small reduction in the rate for under one month, while from one month to one year, the reduction in 1911 was nearly 14 per cent., and in 1912 over

21 per cent., from the average for 1906-10. The problem presented by this portion of infant mortality was an all-the-year-round one, as the figures showed that a greater proportion of the deaths occurred during the winter months than during the hot months, although the variation was very slight as compared with from one month to one year. The New York Milk Committee had conducted a campaign of prenatal instruction and hygiene among the tenement mothers in the worst districts of Manhattan. It was a campaign of prevention through instruction during pregnancy, carried on by visiting nurses in the homes. The results of the first 1,375 cases show two deaths among the mothers, one from toxemia of pregnancy, one from acute hemorrhage due to placenta prævia; 95.3 per cent. gave birth to living babies at term; 1.2 per cent. to premature living babies; and 3.5 per cent. to stillborn babies. Of the babies born alive 97.3 per cent. were alive at the end of one month. In the Borough of Manhattan, as a whole, the death rate under one month per thousand births during the same period was 40.2 per cent. as against 27.5 per cent. for the supervised cases. The still birth rate was 34.3 per cent. as against 47.9 per cent. for the Borough as a whole. At the end of the first month 92.2 per cent. of the babies were being nursed entirely, 4.1 per cent. partially, and only 3.7 per cent. were being artificially fed entirely.

Dr. L. E. La Fetra said that those working on these problems had concluded that they were largely due to three factors: 1. The family income which involved the efficiency of the house. The schools should train the boy to greater efficiency. 2. The girls must be trained in home-making and child hygiene. The large majority of girls were likely to marry and should be trained for their work. 3. They had also the problem of eugenics and all that it implied. Instruction in the medical schools should be broadened out, but the problem was how to do this. Dr. La Fetra suggested a few lectures on sociological problems for students and so arranging the work of students in the out-patient departments that they would be brought in contact with the homes of the people and become acquainted with actual conditions. At Bellevue Hospital they had a chart for taking the social condition of the family of the patient down to the minutest details. As to the prenatal care of the mothers, there was no doubt but that such instruction in hygiene and eugenics would lower the infant mortality.

Dr. Godfrey R. Pisek of New York said that if the physician could be trained in the broad way suggested he would be prepared to displace those now in charge of institutions for children who had no interests in the children in the broad sense. If the physician was thus trained he would indeed be a doctor of public health. A part of the work of the doctor of health should be taken up by the pediatrist. It was often said that the smaller cities did not have these social problems, but there were few cities of 30,000 inhabitants that did not have their slums, and often they were worse than those in New York, and less was being done to ameliorate their condition.

Dr. George Dow Scott of New York said that those who were doing this work appreciated the fact that much must be done for the mother. The entire country should be districted and all mothers should be instructed in social hygiene; this was especially true of the foreign mothers. These foreign mothers did not know how to look after their children properly; they had been transplanted into a new environment and must be taught how to adapt themselves to their new surroundings.

Dr. Joseph Roby of Rochester said he wished to sound a conservative note. It had been found in an investigation in Chicago that the death rate was higher when there were four or more children in a family than where there were less than four. The problem of problems was over population and the millennium would never come without giving it due consideration.

(*To be concluded.*)

## PRACTITIONERS' SOCIETY OF NEW YORK.

*Two Hundred and Fifty-fourth Regular Meeting, Held April 4, 1913.*

The President, Dr. Brannan, in the Chair.

**Congenital Fusion of the First, Second and Third Dorsal Vertebræ and Ribs.**—Dr. Abbe reported this case. He said the patient was a young man of 18 years. He had had a fall two years before, but noticed no trouble and was perfectly well. About a year previously he noticed a swelling over the clavicle which was diagnosed as a sarcoma. This was a very grave matter for his family, who were distressed beyond words. They came to Dr. Abbe to see if anything could be done for the sarcoma. Photographs showed the clavicle raised one and one-half inches above the normal place, and above the clavicle a mass of hard bone development. There was a slight curvature of the lower part of the neck. A possible fracture was thought of, but this idea was abandoned. Diagnosis of a supernumerary cervical rib was made, and an *x*-ray picture showed the following unusual condition: There was an abnormal partial development of three cervical vertebræ, and three ribs were fused together. Two ribs formed a Y-shaped development. The seventh cervical was normal, but the first, second, and third were fused together. Ribs 1 and 2 were fused into one; and 3 and 4 fused into one at the spine. On the other side 1 and 2 were fused, but 3 sprang into an arch and fused further out from the spine. The condition was entirely a congenital defect, and not at all common. In the picture one cervical vertebra looked as if it had been fractured, but that was due to development. The supraclavicular space was filled with a hard mass of fused bone. Growth of the lower spine had caused distortion of the fixed ribs and clavicle. The normal, rapid development of the young man had caused the distortion to appear very recently. The serious suspicion of bone sarcoma was thus corrected by well-taken radiographs, greatly to the relief of the family.

Dr. Gibson said it was remarkable how many cases of cervical ribs and other congenital defects had been noted with the introduction of the *x*-rays. He had seen three cases this year. A man had come to his surgical clinic who had been refused for life examination. He had a swelling in the neck, which was painful, and supposed to be tuberculous. The pain was on both sides. By *x*-ray examination it was shown that the man had a cervical rib.

Dr. Huddleston said there had been six or seven cases of cervical ribs found at the Gouverneur Tuberculosis Clinic, in the course of lung examinations which had been confirmed by the *x*-ray. A number of such cases could probably be found at any tuberculosis clinic.

Dr. Thompson said he had recently shown two cases of cervical ribs in his clinic. He added that Dr. Abbe's case showed that patients suddenly became aware of some deformity they had always had. He had had a young woman patient who had always had enlarged cervical ribs, but not until she had reached the age of going to dances décolleté had she come with alarm to get advice on the "tumor" in her neck.

**Osteitis Deformans.**—Dr. W. Gilman Thompson presented this case (see page 832).

Dr. Gibson said he had seen several cases of this sort and would like to know now to cure them.

Dr. Bryant said he was very much pleased to see the case that Dr. Thompson had presented, but he would like to call attention to certain points. There appeared in the illustrations presented no involvement of the joints, particularly the humerus, as in osteoarthritis, which was a very common disease, and these radiographs showed very clearly the distinction between the two diseases.

Dr. Brannan said he would like to ask what the cause of the bowing was, if it was known.

Dr. Abbe said he had had a patient last month who had had an enormous thickening of the skull, with no apparent symptoms of any cerebral disturbance. There was no other evidence of disease, and the patient was a perfectly healthy man. The entire skull was increased in thickness one inch, but the head was not apparently enlarged; he wore the same sized hat. The only symptom was a slight humming in the ears, as if perhaps one of the arteries was thickened. There was no sign of acromegaly, the pituitary space being normal.

Dr. Thompson said in reply to Dr. Brannan that the bowing was perhaps due to the weight of the body, but not always so, because the bones in the arm showed bowing and the weight of the body clearly did not explain this as well. It was probably due to the deforming process going on in the central canal. The bones were apt to show distinct modules almost as hard as ivory. The long bones also showed areas of softening and were sometimes very friable. In some cases spontaneous fractures occurred. In the case in point the patient said she had had fractures, but she exhibited such childishness, and her history was so very unreliable, that it could not be taken seriously. For instance, she said she had had a fracture of the thigh in the middle of the femur, and had had no treatment, but had been able to walk about. The woman felt perfectly well and was quite persuaded that she had no disease at all. She did not have any of the serious muscle pains accompanying most cases of this disease.

In 1904, Vincent, a Frenchman, in a Paris Thesis, stated that the disease had probably a dystrophic origin in

the central nervous system, and he regarded the fatigue and the diminished knee jerks as evidence of dystrophy. Nothing was known of the etiology of the disease or of a cure. It was not known definitely to be associated with disease of the ductless glands. There were two or three cases associated with disease of the pituitary body, and fourteen cases associated with sarcoma or carcinoma. It was evident from the pictures shown that there was no involvement of the joints, so that the patient had complete use of all joints.

In reply to Dr. Abbe, Dr. Thompson said that he had no doubt the case he mentioned was one of osteitis deformans. There had been two such cases, classed as osteitis deformans, with no involvement of the long bones. These cases were not difficult to distinguish from acromegaly.

**Consultations without Scars.**—Dr. Joseph D. Bryant read this paper (see page 829).

Dr. Kinnicutt said he had to thank Dr. Bryant for presenting the subject in such a delightful way. He thought no one would disagree with what he had expressed in his paper. The whole matter was a delicate one, but the last sentence expressed what they all felt—that the code of ethics would be unnecessary if the golden rule were carried out.

Dr. Ewing said he could not apply Dr. Bryant's remarks to laboratory men, as they did not get such complex ethical questions in the laboratory. He had, however, listened with much profit to Dr. Bryant's paper, and especially to the reference to the difficulty at times of offering a sympathetic tribute to a colleague's work.

Dr. Cleveland said he had listened to the paper with interest and thought it was a very timely presentation of the subject. It was most necessary, and he hoped that when it was published it would be thoroughly read. He thought there were often great lapses in rules of professional etiquette. He, personally, felt grateful to Dr. Bryant for his interesting paper.

Dr. Murray said it was some comfort to him to know that other places had troubles similar to those at his home city, Halifax. When a young man practising it was not long before he had to face some such question. Dr. John Stuart was his first consultant. He was a classmate of McKenzie, a thorough gentleman, and a man of great medical ability. With him one could never imagine any trouble arising. Dr. Murray said that he had settled in his own mind that it was a matter of individual character that made difficulties in the profession. One consultant had sent flowers to his best patient.

Dr. Gibson said he did not know much about ethics. He had had a set of rules when he was a student, with one appropriate to every occasion, but he had been waiting to apply them ever since. He had read the rules of the A. M. A. and they made him think of the sign which read "Gentlemen will not spit on the floor; others must not."

Dr. Thompson said the paper was very interestingly presented and he was very glad to hear from one who had had so large an experience as Dr. Bryant. He did not think that there were many serious lapses from ethics, or that the physicians were as responsible for the lapses as the patients themselves, who went to so many different specialists and so often took matters in their own hands. In many consultations the diagnosis was already well known and the consultation was more for the general satisfaction of the family, there being no room for disagreement. This was largely due to the increase in laboratory investigation, which rendered diagnosis much more accurate. Originally a consultant was called in because of exceptional experience in diagnosis. Today he was called because the family did not think the recovery of the patient was as rapid as it might be. The consultant was submitted to a cross-examination by the family that sometimes made it difficult for him to live up to standards of ethics, although he might make every effort to do so. He thought that any effort to add to the dignity of the profession in these lines was an important one, for the rising generation of medical men especially.

Dr. Smith said he had been thinking during the reading of the paper of the position in which the consultant was placed by the laity. He tried to show civility to another medical man, and the patient and the patient's friends thought nothing of medical ethics at all, and did not care if the consultant was uncivil to his colleagues. This had happened to him. The attitude of the laity in this respect emphasized what Dr. Gibson had said. Thirty years ago the term "code of ethics" was like a red rag to a bull. It had been compromised. He confessed that it surprised him when a member said that he had had no experience with ethical questions.

Dr. Abbe said he thought that the present division of practice into specialties had made it easy for the specialist to get too much interested in a case presented to him for an opinion. He thought he could do it more good than the attending physician. He could not get away from the case. He was not wicked in intention, but he sometimes forgot the injunction "Thou shalt not steal." He did not mean to steal, but he was so interested that he ran the risk of forgetting.

Dr. Miller said he thought the younger members of the profession should find Dr. Bryant's paper valuable and timely and he wished to express his appreciation of it. He would like to ask Dr. Bryant a question, the answer to which might prove of use to other men. He had been asked to go into consultation in a rural community, where a local man's reputation was more often easily damaged than in a large community. He was asked to see a patient who had been kept in bed, with two or three trained nurses to take care of him, and who had not been allowed to move hand or foot, on the supposition that he suffered from serious, organic, cardiac disease. Dr. Miller was unable to find evidence of such a condition. The local physician was evidently sincere in his belief that the condition existed. He (Dr. Miller) had to be honest with the patient but at the same time try to do the right thing by the local doctor. He told him what he thought about the case and left it to him to explain it to the family. Some suspicion, however, seemed to have been aroused in their minds, for another consultant was called from the city. He, agreeing with Dr. Miller, said very frankly what he thought. Dr. Miller later learned that the case passed into the hands of the second consultant. That was a difficult situation, for in trying to be fair to the physician he ran the risk of not being fair to the patient or to himself.

Dr. Brannan said it seemed to him that Dr. Miller had not done himself justice and had hardly done justice to the patient. He would have insisted that the patient learn his views and make gradual change in his mode of life.

Dr. Miller, replying to Dr. Brannan, said that that was practically what had been done. Suspicion was, therefore, aroused and the local physician no doubt had lost prestige because of it.

Dr. Bryant said Dr. Miller was right to apply the idea of his conscience to the question. He hoped the principles of ethics were usually complied with and that what he had said would operate to make more medical men think about them. To the younger men they were suggestive of great guiding importance, and once a week he read fifteen minutes to the graduating class from the principles of ethics. Their ignorance on questions of an ethical nature was amazing.

Dr. Polk said he always liked to disagree with Dr. Bryant if he could. Dr. Bryant seemed to think that doctors were less thought of than clergy and lawyers. He did not think so himself. He thought that lawyers were worse thought of than doctors. As to the clergy as far as he could see, religion was getting pretty dim on the horizon. Man, as distinct from "God," was at the top all along the line. Every one seemed bent on his own individual conception of right and justice. He used any code that suited his own convenience. That might seem pessimistic, but if we stopped to listen and think, many of us would approximate this statement in our conclusions. There was a kind of human upheaval going on that took itself too seriously, and had reached the conclusion that it was self-sufficient in every direction. In consequence of this the legal profession had perhaps suffered more than the medical. He was not criticising the legal profession, but he thought that if you wanted to find evidences of lack of ethical methods of thought and conduct that affected the situation vitally in any and every community, you would find it in the legal profession. They should be the custodians of our morals and should stand for more things than those which touch our pockets. Man was not controlled by morals alone, but by the law as well, yet one could find a situation in which the law had been used for the purpose of showing people how close they could run to the penitentiary and yet evade it. This had demoralized the community as a whole.

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**Tuberculous Colitis and Pericolitis.**—Piéry and Mandoul on the basis of observations made on 20 cases conclude that a new painful intestinal syndrome may be described. This is designated "tuberculous mucorrheic enterospasm." This is often a manifestation of the inflammatory tuberculosis of Poncet and Leriche. A large number of cases of plastic colitis and pericolitis are similarly the result of an inflammatory tuberculous process. In many cases of Hirschsprung's disease a tuberculous factor is present.—*Revue de Médecine.*

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## Original Articles.

### ABORTIVE PULMONARY TUBERCULOSIS.

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THE prevailing notion among the laity, as well as among many physicians, is to the effect that once the tubercle bacillus has been implanted in the human body, especially the lungs, a well known disease will soon manifest itself; that this disease will pursue a certain course, variable to be sure, yet always progressive, and terminate fatally unless checked by appropriate specific, medical, dietetic, climatic, or institutional treatment. In former years medical men held that tuberculosis is invariably fatal but we know at present that a large proportion of patients recover, and judging from records of autopsies made on persons who died from all causes, more persons recover from, than succumb to this disease. But among medical "survivals," of which there are many, the idea that tuberculosis is invariably a progressive disease is one that has not been combated to the extent warranted by facts observed in the daily practice of every physician and especially while making autopsies on persons who died from causes other than tuberculosis.

The average duration of a case of pulmonary tuberculosis has been variously estimated by different authorities. Some state that it is not much over one year, while others believe that it extends to five, seven, and even ten years before it terminates fatally. But these estimates are based on fatal cases and can not give a real idea of the duration of the tuberculous process in the human being. They leave out of consideration the large number of cases running a benign course for years, and when death supervenes, it is usually due to a cause other than tuberculosis. These benign cases will be discussed in another paper, but here we are concerned with the abortive type of this disease, which is characterized by the short duration, one to three or four months, but which invariably recover, without any special treatment.

It is well known that most infectious and contagious diseases quite often pursue an abortive course—*i.e.* recovery takes place sooner than would be expected in a typical case. Thus, measles is known sometimes "to abort early in the eruptive stage, and convalescence begins about the second day of that period. Occasionally, during an epidemic of measles, cases characterized by fever, coryza, bronchitis, and gastric derangements, but without any rash are met with; as these patients are found to be immune on subsequent exposure to the infection of measles a possibility of the occurrence of measles without rash must be admitted."[1] Similarly there are abortive cases of scarlet fever. In some undoubted attacks the whole duration of the febrile stage may not extend over three days, occasionally it is even less.[2] Cases of smallpox without eruption are also known, and they may be of a very mild type and run a short course. There are also known abortive or one or two or three-day pneumonias[3] as well as cases of chancres which are not followed by secondaries or tertiaries. Abortive tuberculosis, in which the disease runs a short course and soon terminates in complete recovery, should also be expected if we bear in mind the large number of persons who at autopsy show healed tuberculous lesions in their lungs, though during life they have never suspected that they were infected with the tubercle bacilli. But clinically it appears that this type of pulmonary tuberculosis has not been described. Thus consulting the treatises on this disease which I have at hand, I find no mention of this type of tuberculosis in nearly all of them. Charles L. Minor[4] is one exception; he says that "a certain number of cases are latent or abortive, though they need not be made into a special class by themselves; the initial symptoms which are often not recognized at all, slowly disappearing either before or after a positive diagnosis can be made. The cough ceases, the weight returns to normal, and the process is either arrested permanently—these cases being those in which autopsy reveals old scars in apices—or for many years, to break out again during some period of depressed vitality." On the other hand I find that Cornet in the second edition of his great work on tuberculosis[5] devotes a paragraph to this type of the disease and says that the abortive course of tuberculosis, which Bard and Meissen have described, should be considered a special type. In these cases there is but little destruction of lung tissue, only at the apex, or in the bronchial glands; the process, however, is short lived under the influence of therapeutic measures or, what is more often the case, the lesion heals spontaneously, leaving behind a chalky deposit, or a smooth fibrous scar.

This type of pulmonary tuberculosis has also been described by Neisser and Bräuning, who have coined the term "tuberculosoid" to express a common class of cases in which the patients present subjective and objective symptoms and signs of tuberculosis, but recover under any form of treatment, or spontaneously, within a short time and remain well indefinitely. The lesion remains small and circumscribed, and either heals or passes into a latent phase.[6] That this type of tuberculosis is not rare is evident from the fact that among the 1,900 persons who were treated at the tuberculosis clinic at Breslau during ten years, Neisser and Bräuning found 300 who presented tuberculosoid condition, and examination from four to ten years

later has shown that they were nearly all well. In those that died from some intercurrent affection, the findings were those which Naegeli described.

It was Bard, however, who first described this mild form of tuberculosis and he named it "tuberculose abortive."[7] He puts in this class all cases of tuberculosis in which the lesion is circumscribed, of little activity, often altogether latent, and which quickly cicatrize and are found at autopsies in the shape of more or less extensive scars, located at the extreme apex, which have healed perfectly. He points out that most of these cases of abortive tuberculosis are not diagnosed during life because they present indefinite symptoms and signs, passing off as ordinary "colds." Those that begin with hemorrhages can be recognized and should receive attention, according to Bard.

Following Bard several other French clinicians have spoken of this form of tuberculosis and Piéry in his recent treatise devotes a chapter to the abortive type of the disease.[8] He shows that at autopsies abortive tuberculosis reveals itself in the form of puckering cicatrices at the apex which produce more or less deep depressions on the surface of the lung and which are surrounded by emphysematous air vesicles. These changes, according to Beriel, contain often smooth fibrous bands, or cheesy, chalky, or calcareous nodules. Cicatrices of the same kind may also be found in the pulmonary parenchyma. In the pleura and subpleural tissue are also found isolated fibrous or calcareous granulation, forming well defined nodules. These are the gray or white miliary tubercles forming indurations which are felt by the fingers passing over the serous surface. Abortive tuberculosis may also leave behind dense areas of slaty chronic indurative pneumonia, containing in their center one or more calcified, encysted foci, sometimes dilated bronchi, or smooth cavities.

I met with cases of abortive tuberculosis in a peculiar manner. As physician to the United Hebrew Charities in New York City, I have annually under my care several hundred cases of tuberculosis in all stages of the disease. They are recruited exclusively from the poorest strata of the population of the lower East Side of Manhattan. Their occupations are mostly of the class which has the evil distinction of figuring in the etiology of tuberculosis as "predisposing," or of aggravating the course of the disease in case of infection, especially when the patient persists in pursuing his vocation. When I began this work twelve years ago, influenced by the teachings of the literature on tuberculosis, which by the way is mostly written by physicians whose experience has been gained in sanatoria, I expected to see every consumptive succumb within a few months, unless vigorous measures were taken to check the disease and to change his mode of life. Considering the congestion in the tenements and the overwork in the sweatshops, as well as the deleterious effects of poverty with its concomitant starvation, I always urged it as imperative that all cases of tuberculosis be removed to sanatoria. In a large proportion of cases this was done—the patients were removed to some excellent institutions where they remained for months, often for more than a year. Within a few months after they returned to the city, immaterial whether they again engaged in indoor occupations or not, I was struck with the large number of relapses which occurred among these "cured," or "arrested," cases, and often the idea presented itself to me whether those whose practice is confined to institutional care of tuberculosis realize the futility of their methods in a large proportion of cases, particularly among the poor.

On the other hand, I was impressed with the large number of tuberculous patients that came under my observation and who for various reasons were not admitted to sanatoria, but continued in the tenements and the sweatshops, yet held their own for years. Many patients in whom a positive diagnosis of incipient tuberculosis was made but no treatment instituted, were found several months later in excellent condition, none the worse for their experience. Often because of the limited capacity of the sanatoria at our disposal our applicants' names are placed on waiting lists to be notified whenever a bed becomes vacant, which occasionally took from two to three months after the first application was made. I was quite often surprised when the applicant was called to be sent out of town to find that all the symptoms and signs of active tuberculosis, which were clear during several examinations two or three months ago, had entirely disappeared, and the patients felt quite well. Moreover they told me that they had kept on working all that time and had not been under the care of any physician. I have also met with many cases of spontaneous recovery from pulmonary tuberculosis in my private practice; patients who got over attacks of hemorrhage, cough, night-sweats, etc., within a few months without any special treatment, remaining well for years.

One of the cases of abortive tuberculosis that I had an opportunity to study thoroughly was the following:

E. G., a physician, 32 years of age, working quite hard at his profession, suddenly began to spit blood on March 7, 1904. Physical examination showed a distinct lesion of his right apex; a laryngologist found that the blood came from beneath the glottis. The physical signs indicated infiltration of the right apex manifesting itself through laggings, defective resonance, bronchovesicular breathing, crepitation, whispered voice, etc., at that area, especially posteriorly. The temperature, taken for two months every two hours when not sleeping, was usually subnormal in the morning, often as low as 97° F. but went up to 100° F., or 101° F. in the afternoon, particularly after exertion. Quite profuse night-sweats were of daily occurrence. His appetite was, however, not impaired and his bowels regular. Repeated bacteriological examination of the sputum which was quite profuse gave negative results. The patient continued working at his profession, though with less intensity, and within three months all his subjective symptoms disappeared; his cough, fever, night-sweats, etc., left him. At present, eight years after that hemorrhage he feels in excellent condition, his weight is 170 pounds, 25 pounds more than before his attack of tuberculosis. Physical examination shows some sibilant rales at the right supraspinous fossa, as well as some impaired resonance. That this was a case of tuberculosis, although no tubercle bacilli were found in the sputum, is attested by the fact that three excellent diagnosticians, as well as a laryngologist, considered it such. I was inclined to doubt the correctness of this diagnosis, but meeting with many other such cases, I am now strongly of the opinion that it belongs to that class of abortive tuberculosis which is so rarely mentioned in medical literature.

A case in which the objections that can be raised in the preceding case are wanting is the following:

C. E., a woman 27 years of age, married five years, but no pregnancies because of atrophy of the testicles of her husband. Family history negative. Consulted me August 5, 1911. Had a profuse hemorrhage two weeks ago, and gives a history of three similar hemorrhages during the past five years. Coughs since the last hemorrhage, has fever, malaise, night-sweats, etc. Has lost seven pounds in weight within two weeks. Examination shows dullness of the right upper lobes both anteriorly and posteriorly, true bronchial breathing, some crepitation and whispered voice at the same area. Examination of the sputum shows the presence of tubercle bacilli. The patient was advised to stay in bed for two weeks and given the usual treatment in such cases. When she reported again at the appointed time, I found that the fever had left her altogether, her appetite improved, her general condition was that of well being, and while the dullness on the upper part of the right chest persisted, yet the bronchial breathing changed to the bronchovesicular type, and no rales could be elicited. This woman has been under my care ever since and at the last examination, December 20, 1913, I find that she has gained eighteen pounds in weight, as compared with her weight when I saw her first. She has not coughed, nor felt out of sorts seriously during the last fifteen months. The dullness has persisted to date, and auscultation shows prolonged expiratory murmur at the right apex. There is no doubt to my mind that this woman passed through an abortive attack of tuberculosis and was cured in about three months.

Another abortive case of tuberculosis taken at random from my case histories is that of J. R., 25 years of age, tailor. Family and personal history give nothing which may have any bearing on his troubles which brought him to my office, December 9, 1911. Has been coughing for three weeks, ever since he suffered from an attack of "grippe." The cough annoys him especially at night, and on one occasion he noted some streaks of blood in the sputum he brought up. Complains of pain in the left chest, extending as far as the shoulder. Appetite fair, bowels regular, but has been feeling out of sorts, unable to do a good day's work during the last two weeks. A feeling of languor overtakes him every afternoon and he is inclined to sleep at that time. Night-sweats have been noted only the last two nights, and this frightened him so much that he came to have "his lungs examined." Physical examination shows a pulse rate of 108, increased to 124 on slight exertion; signs of infiltration with retraction of the left apex and also defective motion of the base on the same side. Microscopical examination shows the presence of tubercle bacilli. The usual routine treatment was prescribed for this patient, and he showed improvement within two weeks; his cough disappeared within a month, and he gained twelve pounds in weight; his night-sweats also ceased. The few crepitant rales that were heard one month ago, have also gone but the bronchial breathing, and the dullness have persisted to the last examination on September 8, 1912. On the whole the patient feels well, and has been working at his trade all along.

A striking case of abortive tuberculosis was that of A. F., a clothing manufacturer, 40 years of age, who suddenly, without premonition was seized with a profuse pulmonary hemorrhage on September 5, 1911. He was referred to me by a colleague, and when I reached him I found him in actual collapse, not so much from the loss of blood as from fright. No thorough examination of the chest could be made at that time, but auscultation of the anterior aspect of the thorax suggested a lesion at the left apex. The hemorrhage continued for ten days, some days it was quite profuse, and for ten subsequent days he continued to bring up blood-tinged sputum. Of three specimens of sputum examined, only one showed the presence of tubercle bacilli, about five to a field. His temperature was that of a typical case of incipient tuberculosis, often subnormal in the morning, and reaching 102 F. in the afternoon and evening, and had severe night-sweats. After he remained in bed for a month, and no blood was seen in his sputum for ten days, I carefully examined his chest and found physical signs of infiltration of the left apex. He was quite run down for his experience, having lost fifteen pounds in weight during the month he had been confined to bed with the hemorrhage. I advised him to leave the city, and he went to Lakewood, N. J., returning within a month, reporting that he had regained his weight and strength and feeling in excellent condition. Examination of his chest at that time showed signs of cicatrization at the left apex—no crepitation, only some sibilation and defective resonance on percussion, but by far not as intense as during the examination five weeks before. I have seen this patient five times since then, but found him just as well as could be expected of one who never had tuberculosis; even the rapid and unstable pulse, which was quite pronounced in this case, has become normal. It is his own opinion that he never felt better in his life.

A case under my observation for eleven years illustrates the benign course of tuberculosis in some cases better than those just detailed. N. D., 29 years old, carpenter, called to see me July 15, 1901. He came from bad stock—his father died at the age of 38 from "hemorrhage"; of seven children born to his mother only two survived, the rest have died—one from meningitis (tuberculosis?); two from endemic diseases during infancy; one, who was crippled from hip joint disease, succumbed through an accident; and one, a sister with whom my patient lived during the last five years in New York, died from pulmonary tuberculosis three months ago. Personally my patient has been very much addicted to "colds," especially during the spring months. But these colds usually passed off within a few days, a week or two. But the present cold, contracted last March, when he was said to have had "grippe," has persisted. He coughs, has night-sweats, feels flushed and tired every afternoon, and has lost twelve pounds in weight during the last four months. Examination showed signs of infiltration of the left apex down to the third rib anteriorly as well as dullness at the right interscapular space which I consider a good sign of bronchial adenopathy. An examination of his sputum revealed a moderate number of tubercle bacilli. I urged him to give up work and go to the Catskills, which he immediately did. But he returned within ten days, saying that he can not remain in the mountains, where he is lonesome, and inasmuch as he feels strong enough to work for his family, he prefers to do so. He insisted that the idleness in the country makes him sick. He has kept at work ever since and comes to see me whenever his cough annoys him excessively. I have made it my business to examine his sputum

whenever available, and of fourteen such examinations, only on two occasions were tubercle bacilli found—once in July, 1901, and another time in April, 1902. When I saw him last, during November, 1912, he presented signs of fibrosis of the left upper lobe, but his sputum, which is rather scanty, was negative of the Zihel-Nielsen strain. His weight was 156 pounds, as against 136 in 1901. The diagnosis in this case was as reliable as can be expected, based on both clinical and bacteriological findings. The course was that of an abortive case, recovery taking place in about three months and for eleven years there was no recrudescence, the patient working at his trade all along.

Another case running an abortive course was that of A. C., Russian, 22 years old, works at leather goods; has been in the United States but one year. His family and personal history are negative—has always felt well until February 14, 1910, when, without premonition, he began to bleed from his throat while at work, losing about four ounces of bright red blood, and continuing to expectorate blood streaked sputum for three days. At one of the tuberculosis clinics, where he immediately went for advice, he was told that he has tuberculosis. He consulted me for the first time on February 17, when upon physical examination I found a short note at the left supra and infraclavicular space to the second rib, narrowing of the field of resonance (Krönig's sign) bronchovesicular breathing and whispered voice posteriorly and some crepitation anteriorly on the left side. He complained of a dull pain in the left chest. His appetite was excellent and his bowels regular, but he informed me that he had been losing in weight ever since he came to New York one year ago. Microscopical examination of the sputum was on four different occasions negative as regards acid fast bacilli. During the first fortnight that I had him under observation I found an elevation of his temperature of one or two degrees above normal every afternoon, but thereafter it was always normal. Since then his strength returned, his weight increased so that on September 12, 1912, when I saw him last, his weight was 139 pounds, as against 124 in September, 1910. I also found that the short note at the left apex gave place to slight hyperresonance, but the prolonged expiratory murmur persisted and in addition there was some sibilation where formerly there were found crepitations. This patient wanted to return to work two weeks after he was under my care, but his fellow workmen, who have heard so much about the dangers of infection, refused to work with him, and it took him six weeks to find a new job in a factory where his troubles were not known. At any rate, this patient has been idle about two months and without any special treatment, and in spite of his life in an East Side tenement, recovered completely during that short period. Had he gone to a sanatorium, which would have been the case had this patient not feared deportation in accordance with the United States immigration laws, institutional or climatic treatment would have been credited with the cure.

A case of abortive tuberculosis under my care which was studied as thoroughly as could be expected was that of C. L., a dentist, 24 years of age. His family history was negative, as was his personal history, excepting that he had been subject to "colds" which annoyed him during the winter months. On the 25th of April, 1911, after an annoying cough of two weeks duration, he suddenly began to expectorate bright red blood in moderate quantity. This hemorrhage continued for three days, and for three subsequent days he kept on bringing up blood-streaked sputum. Excepting the cough he felt well, his appetite was good and he told me that he never felt better. Physical examination of his chest showed marked dullness at the left apex, Krönig's sign, both anteriorly and posteriorly, and true bronchial breathing down to the second rib in front and the spine of the scapula behind, and also some tubular breathing in the left interscapular region. No adventitious sounds could be elicited even after cough, but whispered bronchophony was quite pronounced. All this indicated infiltration of the left apex, and probably enlargement of the bronchial glands. His temperature, taken every three hours for three weeks, showed the characteristic remittent curve, normal in the morning, rarely one degree subnormal, and rising one or two degrees in the afternoon and evening. Only on two or three occasions had the patient noticed night-sweats. Repeated examination of the sputum gave negative results bacteriologically, but the albumin reaction was positive. During the six weeks following the hemorrhage this patient had an excellent appetite and in spite of the superalimentation in which he indulged at my advice, he did not gain in weight, in fact he lost three pounds. But within two months the physical signs of infiltration of the left apex disappeared—instead of dullness I found hyperresonance, and instead of bronchial breathing, vesicular breathing with prolonged expiration which persists to date; the whispered voice also remained, though with less intensity. He works at his profession and considers himself well, which he undoubtedly is.

Not all the cases of abortive tuberculosis begin with hemorrhage—in fact I believe that the vast majority of abortive cases never bleed, but we do not recognize them because they pass through the infection without any symptoms which would direct attention to the lungs. But sometimes we may be able to follow this form of tuberculosis quite closely and make a proper diagnosis. This is especially true of cases following influenza which often show signs of apical infiltration, but which clear up within a month or two. Inasmuch as tubercle bacilli are not found in the sputum in this sort of cases, it is almost invariably thought that post grippal coughs with apical signs are hardly ever tuberculous. I suspect that many of these cases are of the type of tuberculosis discussed in this paper and that they pass unrecognized. The following case illustrates this point.

M. S., 46 years of age, has been my patient for fourteen years, has always been troubled with coughs during the winter months, and shows signs of pulmonary emphysema ever since I knew him. In November, 1911, he was laid up with characteristic symptoms of influenza, running a rather high temperature with all its concomitants—anorexia, pain in the limbs and back, cough, profuse expectoration, etc. After remaining two weeks in bed his temperature became normal and though debilitated and sick, he returned to his business. But within a week he had to give up work, because of lack of strength and vitality. Physical examination at that time revealed, in addition to the signs of emphysema, evidences of infiltration of the left apex—dullness, bronchial breathing, whispered voice and subcrepitant râles, all localized above the second rib. In addition to Krönig's

sign, there was also some defective motion of the base at the left side, which I was sure never existed in that patient before. Tachycardia was very pronounced in this case—the pulse rate was over 100 during rest and the least exertion increased it very much. Although he expectorated profusely muco-purulent material, repeated bacteriological examinations, once with the antiformin method, failed to show tubercle bacilli, his night-sweats were very severe—some nights he had to change his bed clothes two or even three times. Anorexia was extreme and his cough very annoying and difficult to control with the usual anodynes, and the dyspnea pronounced—after exertion alarming. His temperature again began to run a remittent course, subnormal in the morning, and two or three degrees above normal in the evening. Thus he remained in bed for four weeks, and when his temperature was normal for ten days, and he left his bed, it was found that he had lost twenty-eight pounds in weight during the last three months. He spent three weeks in a winter resort in the neighborhood of this city returning somewhat invigorated, yet suffering from dyspnea, and instability of the pulse and temperature after the least exertion. He continued attending to his business and yet the improvement in his general condition kept up, and while he was slow in regaining his lost weight, his strength returned after a vacation during the summer. He surprised me when he brought a new life insurance policy which was issued after an examination by a physician living in the country place where he spent his vacation. An examination at that time showed that the dullness at the left apex had disappeared and the signs of pulmonary emphysema were again evident all over both sides of the chest, as I knew to be present before the illness of last winter.

The post-grippal cases of abortive tuberculosis are very frequent in my experience. I meet with them especially among artisans of the garment industry in New York city. Many present symptoms and signs of incipient tuberculosis which last but a month or two and recover without any special treatment. I have known some who persisted working in sweat-shops while coughing and having mild fever, yet recover in a short time. The large number of persons among this class of workers at indoor and dusty occupations who show auscultatory and percutory signs indicating differences between the sides of the chest, are good proofs of the frequency of abortive tuberculosis among them. Among the poor and dependents who apply for relief to the United Hebrew Charities in New York city I have also seen many cases of abortive tuberculosis, and it seems that poverty, malnutrition, overcrowding, etc., are not always instrumental in bringing about an acute course of tuberculosis when a person is infected.

From the few cases detailed above it is evident that we are dealing with a distinct group of cases of tuberculosis which run a short and benign course terminating in recovery within two or three months. To be sure we have known all along that very few persons pass through life without being infected with the tubercle bacilli, as is evident from autopsies made on thousands of persons who died from all causes. The positive reaction found in over ninety per cent of humanity to some of the tuberculin tests, notably von Pirquet's, is another proof of the large number of people who have been tuberculosis without showing clinically any symptoms. Some of these cases can be recognized during their period of active infection, if we paid more attention to "neglected colds," obscure attacks of "grippe," "rhinopharyngeal coughs," pulmonary hemorrhages, which are supposedly due to causes other than tuberculosis, etc. Many of these cases could be diagnosed as abortive tuberculosis, if a careful seach for symptoms and signs was made. Moreover, I am under the impression that many of the cases in which a diagnosis of tuberculosis is made by a competent physician, but the subsequent course of the disease has thrown some doubt on the correctness of the original diagnosis, are cases of abortive tuberculosis. A large proportion of cases admitted to sanatoria, but soon discharged as non-tuberculous, also belong to this class. I have also seen many patients making applications for admission to public sanatoria and passed upon by the examining physicians as incipient tuberculosis and eligible, but inasmuch as the institutions are overcrowded, they have to wait for weeks or months before beds are vacant for them. When they finally present themselves for admission it is found that all the signs and symptoms observed a few weeks before have disappeared. In such cases I formerly believed that the original diagnosis was erroneous; that an "apical catarrh," a "local bronchitis," or pleurisy, etc., was mistaken for incipient tuberculosis. But I now look upon many of these cases in which the lesion, instead of pursuing its normal course, has healed quickly as aborted cases of tuberculosis, just as we have aborted cases of measles, scarlet fever, syphilis, pneumonia, etc. When carefully examining these persons we may find some differences in the auscultatory and percutory signs when the two sides of the chest are compared, thus indicating the presence of healed lesions of tuberculosis.

The symptoms and signs of abortive tuberculosis are practically the same as those of incipient tuberculosis as described in standard text books on the subject. But they never pass beyond the stage of incipiency. The vast majority of cases can not and are not recognized clinically. It is different with those that have hemorrhages, and most of the cases detailed above began with more or less profuse bleeding. The bleeding lasts a few hours or days and either stops abruptly or continues for some days in the form of expectoration of blood-streaked sputum. Every physician has among his clientele patients who have had pulmonary hemorrhages years ago and have felt well ever since. There are also many patients who have had hemorrhages many years ago, but recovered shortly, feeling well for a long number of years, to be finally attacked with phthisis. In such cases the first hemorrhage was probably due to an attack of abortive tuberculosis, while the second or third attack was not aborted, but pursued its usual course.

Some may never have fever, but these are not recognized and pass as ordinary "colds." In many the fever may pass unrecognized because a careful search is not made for it. Just as in all cases of incipient tuberculosis, it is advisable to take the temperature every two hours and after some exertion on the part of the patient before deciding that the temperature is normal. While many cases show a subnormal temperature in the early morning hours, it can not be said that all are thus characterized. Tuberculous fever, it is well known, does not run a definite and characteristic course, but is always irregular and capricious and this is to

be borne in mind when considering the abortive cases. I place great reliance on the excellent appetite some patients have in spite of the fever as almost pathognomonic of tuberculosis. Some of these febrile cases are troubled with the usual symptoms of fever—malaise, lassitude, languor, pain in the limbs, backache, etc.

Night-sweats are observed in most of the cases. In some this symptom is overlooked because of its mildness, while in others it may be quite profuse and so pronounced as to be the main concern, as was the case with one of my patients.

Cough is a constant symptom, though in some cases it is so slight as to be overlooked by the patient who says that he does not cough, but when carefully questioned he admits that he has to clear his throat in the morning, and occasionally coughs during the day or night. We often meet with the dry, hacking cough annoying the patient all through the day, or keeping him awake during the greater part of the night. Especially is this the case with nervous patients, frightened by a pulmonary hemorrhage. In cases following influenza the cough may be loose, productive of abundant sputum, which though not characteristic yet is never purulent in abortive tuberculosis. Some are also hoarse intermittently, the hoarseness lasting a few hours during the day, or for several days in succession. Most of the abortive cases are of the "closed" variety of tuberculosis, but now and then we meet one showing tubercle bacilli in the sputum, and most of the cases reported in this paper have been of this sort. The albumin reaction, which I consider of great diagnostic significance [9] is almost invariably positive in abortive cases in which sputum is available for analysis.

Weariness or languor is also seen in many cases. The patient while not completely incapacitated by sickness yet feels tired during the afternoon, but recuperates in the evening, or feels refreshed after a night's sleep. The digestive organs are practically normal in function. The anorexia, which is so common in progressive phthisis, is usually absent in the abortive cases. The patients eat well and when superalimentation is urged they can easily carry it out. It is, perhaps, for this reason that most of the abortive cases are not emaciated and even gain in weight quite soon, in some cases while continuing at work.

Tachycardia is a frequent symptom—all my cases had a pulse rate of 90 or more per minute. Another feature of the pulse is its instability, its rate increases with even slight exertion, and comes down after rest. But the rapid pulse is not of long duration: Within a few weeks, going hand-in-hand with the general improvement, the decline in the fever, gain weight, etc., it slows down, becoming normal again. Indeed, in all cases of incipient tuberculosis in which the pulse slows after a period of tachycardia, I always look forward to a speedy recovery. The same is true of the blood pressure. It is, like in most cases of tuberculosis, rather low, between 65 and 90 mm. of mercury, and rises again with the general improvement. But there are many cases in which the blood pressure is normal, or even above normal. Dyspnea is rare. One exception that came under my observation was a case of abortive tuberculosis implanted on an emphysematous lung, but the patient recovered within ten weeks, and has been well for eighteen months.

The physical signs of abortive tuberculosis are, like the subjective symptoms, those of the classical incipient cases of tuberculosis. Of course, in the cases in which the lesion is of small extent, we may not find any signs on auscultation and percussion, and without hemorrhage the diagnosis cannot be made with any degree of certainty. In all probabilities the vast majority of tuberculous infection of the lung in man are of this character. They are aborted without making themselves known in any way. In some the conglomeration of tubercles is large enough to give definite physical signs which may be detected when carefully looked for. In these cases we may have either a short note or defective resonance of the affected apex above the clavicle, or beneath the inner third of that bone. Krönig's method of finger to finger percussion reveals a narrowing in the resonant area at the apex when compared with the opposite side, which is one of the best signs at our command, provided, of course, we have as a concomitant the subjective symptoms characteristic of incipient tuberculosis. It must be borne in mind, however, that in some cases there is hyperresonance, due to vicarious emphysema, hyperfunction, or pulmonary relaxation, as a result of scattered small tubercles which do not exclude all the air from a comparatively large area of lung tissue. Defective motion of the base, so frequent in progressive phthisis, I have not observed all in abortive cases.

Auscultation is more valuable for those who are not adept in light percussion. The inspiratory murmur is the first to be affected—it becomes either rough or interrupted or cogwheel in character, and in many cases there is a prolonged expiratory murmur. Broncho-vesicular breathing is not uncommon, and in some I have heard true bronchial breathing, indicating quite extensive involvement, yet recovery went on speedily, showing that the abortive course may take place even when the lesion is quite extensive. Adventitious sounds are not always heard, excepting in those who have had hemorrhages and in some post-grippal cases. When heard we find on inspiration dry crackles, or crepitations which are often difficult to differentiate from marginal râles and muscular sounds. At one time I thought that friction sounds are a frequent phenomenon in these cases, but I now consider these adventitious sounds as marginal or atelectatic râles, because they are greatly influenced by deep breathing and cough. Of course, to be of significance these objective signs must be strictly localized at one apex and constant for some time.

These are, as was already intimated, the classical symptoms and signs of incipient phthisis and by no means give a clue as to the course the disease is likely to take. In fact, many of the abortive cases are admitted to sanatoria, where they are speedily cured and they contribute no mean portion of the credit claimed by advocates of institutional treatment. In the progressive cases the lesion as well as the subjective symptoms pursue the usual course, and shortly other signs make their appearance. But in the abortive cases the physical signs do not indicate a progression of the disease—the impaired resonance or dullness does not extend lower and lower on the chest, the bronchovesicular breathing does not become true bronchial, tubular or blowing; the dry crackles or crepitation are not superseded by moist subcrepitant râles or gurgles. But in the course of a few weeks, a month or two the adventitious sounds disappear and are superseded by sibilation, and the type of breathing becomes distinctly vesicular in many cases, while in others the

prolonged expiratory murmur remains permanent in the circumscribed area that was affected. While in most cases the local impaired resonance remains, I have observed that in some even this disappears to be replaced by slight hyperresonance, due probably to hyperfunction from relaxation, or localized vicarious emphysema of the lung tissue around the cicatrix, which the healing process has brought about.

Similarly the subjective symptoms are soon abated in abortive cases. The cough, which may have been severe at the beginning, becomes less and less of an annoyance to the patient and ceases altogether within six to ten weeks; the weakness and languor, which persists in progressive cases, is not severe in the abortive and soon the patient feels strong enough to work at his usual occupation. With a good appetite and normal gastric function the patient soon gains in weight and wonders whether the diagnosis of tuberculosis made by the physician was correct. One point has helped me occasionally in cases beginning with hemorrhage: In progressive cases there is usually a history of cough, weakness, night-sweats, etc., for weeks or months before the hemorrhage, while in the abortive type of the disease this is rare—the hemorrhage usually comes without any premonition, and even without any exciting cause.

A reliable diagnosis of abortive tuberculosis can, under the circumstances, not be made immediately upon seeing the case. It is only by following its benign course that we can recognize this special form of tuberculosis. Those without pulmonary hemorrhage can in the vast majority of cases not be diagnosed at all.

Abortive tuberculosis is to be differentiated from collapse induration, an apical lesion first described by Krönig; and also from simple non-tuberculous apical catarrhs which are met with among persons engaged at indoor and dusty occupations, and after attacks of influenza. But this is often very difficult. All these apical lesions have in common most of the subjective and objective symptoms and signs of incipient pulmonary tuberculosis. In many cases only the bacteriological findings, when revealing acid-fast bacilli, can decide. I am usually guided by the following points: Collapse induration is met with only in mouth breathers, while pulmonary tuberculosis occurs in persons with or without nasal obstruction. In collapse induration there is no hemoptysis, excepting such as is derived from the nose, pharynx, or tonsils, while abortive tuberculosis often begins with hemorrhage more or less profuse. The albumin reaction of the sputum is always negative in collapse induration and in simple apical catarrh, and positive in abortive tuberculosis. The subjective symptoms of abortive tuberculosis are more pronounced than in the non-tuberculous apical lesions—anorexia, fever, tachycardia, dyspnea, fatigue, languor, hoarseness, etc., are rare in the latter and common in the former. The physical signs of collapse induration are invariably found in the right apex, while abortive tuberculosis may be implanted in either apex with about equal frequency. The motion of the base is restricted very often in tuberculosis and never in collapse induration or simple apical catarrh. In doubtful cases only the course of the disease, when carefully observed, can decide whether we are dealing with an abortive lesion of pulmonary tuberculosis, or with a simple, non-tuberculous apical lesion, or a usual case of phthisis.

There are many theoretical problems presented by the abortive form of tuberculosis which have some practical bearings. It is a question whether we deal here with patients whose individual resistance to the noxious effects of the tubercle bacilli is so great as to overcome the destructive tendencies of the germ, or perhaps this form of tuberculosis is caused by an attenuated strain or race of microorganisms characterized by low virulence. It is well known that the differences in the severity of epidemics of infectious and contagious diseases, or even of individual cases in the same epidemic, is often due, in part at least, to the varying degree of virulence of the invading germ, even conceding important differences in susceptibility of the invaded hosts. Thus there are known differences in virulence of various strains of diphtheria bacilli, of streptococci and also of the tubercle bacilli which are known to become quite attenuated when grown on artificial media, often losing most of their virulence, even when growing luxuriantly. Cattle infected with attenuated tubercle bacilli suffer less than those infected with virulent strains, as has been shown by many authorities, notably Behring. The wide distribution of such attenuated strains of tubercle bacilli in nature, says Cornet, urges the conclusion that for man also there are tubercle bacilli, be they of the bovine, human, or similar strains, of low virulence and these may, at least in many cases, be the cause of abortive tuberculosis. How far we can enhance the natural resistance of the body, thus preparing the soil for the abortive course in patients who were infected, must be further investigated.

If it could be proven that in abortive cases we are dealing with an attenuated strain of tubercle bacilli it may be of practical importance to study the bacteriology of this type of the disease as well as of other groups of benign tuberculosis in man. That the virulence of the various strains of tubercle bacilli differs to extreme degrees is well known, but I do not know that the study of the problems connected with it has been given the attention it deserves.

It is also of practical importance to inquire whether an individual who passed through an abortive attack of tuberculosis is more or less susceptible to another infection with the tubercle bacilli. Of course it is evident that in cases in which the bacilli remain alive, though inactive, in the lung tissue or in the peribronchial glands, there is always danger of an acute recrudescence of the disease under some exciting cause. We have seen this to be the case with many of those who have a mild attack of tuberculosis, recuperate and several months, perhaps years later, after an attack of typhoid, influenza, or pregnancy, etc., there is a fatal recrudescence of the disease which had been dormant. Experimentally it has been proven that the chalky deposits in healed lesions of tuberculosis harbor virulent tubercle bacilli.[10]

On the other hand, there is evidence to the effect that an infection with tubercle bacilli may immunize against a second infection. Koch has long ago shown that tuberculous guinea-pigs are immune against new infection with tubercle bacilli; Behring also brought forward evidence showing that cattle can be immunized in this manner. Calmette is of the opinion that healed tuberculous lesions, especially of the glands, during childhood, confer immunity against tuberculosis in later life. Römer shows that spontaneous tuberculosis of a chronic character protects guinea-pigs against renewed in-

fection. Among human beings also Römer says, that "the tuberculous are immune against tuberculosis." A slight early tuberculous process protects the individual against mild new infection.[11] If this be true we may expect that those who passed through an attack of abortive tuberculosis and the lesions have healed through cicatrization, not through calcification, are more or less immune against renewed infection by the tubercle bacilli.

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## A CONSIDERATION OF THE THERAPEUTICS OF INTESTINAL AUTOINTOXICATION.

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It has been known for generations there is a certain amount of toxemic absorption from the intestinal tract into the general circulation, but this fact was little understood by the profession and consequently was not taken seriously into account by the physician in his daily practice. More recently, however, there have been many discoveries along these lines, and today the subject is well understood and is one of the most important that confronts the physician. Calomel with its saline cathartic was about the only treatment given, but the modus operandi of its action was little understood.

Symptoms produced by antointoxication are so varied in their character and anatomical distribution that in attempting to describe them one would be carried into a great diversity of conditions. I shall not attempt a description of the symptoms of autointoxication, but I wish to call attention to some symptoms which I believe have been given too much prominence, even being considered as pathognomonic without any foundation. Headache has been considered one of the chief indications of autointoxication. Recently a long article appeared in a well-known medical journal advocating a certain diet as a never-failing cure, the only diagnosis given of the autointoxication being that the patient suffered from headache. But few of the patients I have found suffering from autointoxication complained of headache, and in three of the most severe cases, in which the ethereal sulphates were never below 0.59 gram in the twenty-four hour output, the patients, although above thirty years of age, stated thay had never had a headache. Another indication given as diagnostic of autointoxication is constipation. My own experience covering more than three hundred cases, in which careful laboratory examinations demonstrated a marked autointoxication, has proved that people suffering from constipation have less toxins on an average than those who do not. Alternate constipation and diarrhea is a far more diagnostic symptom. The functional nervous symptoms are many. Not every case of neurasthenia is due to autointoxication as some would make us believe, but I have seen recoveries from neurasthenia after the patient was cured of autointoxication, when many other methods of treatment for the neurasthenia had been tried and failed. One of my patients suffered much on account of her eyes. She had visited many oculists, both in New York and Berlin. The close application of her eyes for only a few minutes would cause the greatest distress. All the physicians she consulted practically agreed that they could find nothing very materially wrong with her eyes, the weakness being due to a condition more general than local. They had changed the glasses and trained the ocular muscles without effect. I treated her for autointoxication without any thought of her eyes. To my surprise they began to improve at once, and five months after discontinuing the treatment she was reading and sewing for long periods at a time without suffering. Sleeplessness is a marked symptom in some cases, as evidenced by the disappearance of the insomnia after relief of the autointoxication. Sleeplessness, however, is by no means a universal symptom for many complain of a constant drowsiness with heavy unrefreshing sleep. Many persistant skin symptoms disappear after the relief of autointoxication. These few instances show how widely different conditions may depend on autointoxication.

The putrefaction I refer to in this paper is due to the anaerobic bacilli, the presence of which in the intestines is caused by the absence of oxygen which has been consumed by the colon bacilli. There is putrefaction, with a correspondingly large gas volume, always above 50 per cent. and generally ranging from 90 to 130 per cent. Indol is present in a much more than normal amount, and skatol to a marked degree, the latter sometimes in such abundance as to give the peculiar odor of skatol to the entire fecal mass. Indican is present in large quantities in the urine, but as it varies so markedly with the different degrees of concentration, as well as at different times of the day, it is not a safe guide for close observation. If one examine the urine for indican, beginning with a specimen voided by the patient on first rising and then examined every two hours until bedtime, one will find indican more pronounced in the morning, and gradually decreasing until evening, when it may begin to slightly increase again. This variation, irrespective of the specific gravity, shows that the absorption of toxins is greater during the night. A quantitative sulphoether test of a twenty-four hour specimen of urine is the most reliable, as it gives the amount of absorption into the system and it is this absorption that is so injurious.

The sulpho-ethers taken in connection with the fecal test give an indication as to the location of the putrefaction, the absorbing power of the small intestines being much greater than that of the large intestine. The citation of two cases will illustrate this point. One gave in a fecal examination a gas volume of 103 per cent. with a correspondingly large amount of indol and skatol, while the urinary examination gave only 0.30 gram of the sulpho-ethers.

In the other case, a fecal test showed a gas volume of 60 per cent., a moderate amount of indol and a slight trace of skatol, yet the urine showed 0.70 grams of the sulpho-ethers passed in twenty-four hours. In this latter case the location of the putrefaction was undoubtedly high up, probably in the small intestines. This proportional increase in the sulpho-ethers, owing to the high location of the putrefaction, is always in the indoxyl potassium sulphates. According to my experience, when the putrefaction is in the large intestine, as evidenced by the small proportional amount of the sulpho-ethers, the indoxyl potassium sulphates furnish about seven hundred parts to the thousand of the combined sulpho-ethers, while in those cases in which the putrefaction is located in the small intestines the indoxyl potassium sulphates furnish approximately nine hundred parts to the thousand. I believe this distinction is very important as an indication in the treatment, for when the putrefaction is located in the small intestines much may be accomplished with internal medication. It is in this condition that the lacto-bacillus of Metchnikoff is of the greatest use if the treatment is properly carried out. I have, however, tried all the internal medicinal forms of treatment that have been in vogue during the last few years, when the putrefaction was located entirely in the lower intestine, with very indifferent results.

The internal treatment may be divided into two general classes: intestinal antisepsis, and the lactic bacillary treatment of Metchnikoff. Of the former, I have used the various preparations, as they have appeared from time to time, which it was claimed would survive the digestive powers of the stomach and duodenum. I have employed these separately, and in connection with medication which was supposed to increase the secretion of bile, thus assisting the antiseptic property of the agent. These remedies have been tried along strictly scientific lines, in connection with a laboratory where the fecal mass was carefully examined, and always taken in connecton with the sulpho-ether test of the urine. Benefits from these so-called antiseptic remedies have been about in proportion to the cathartic action of the remedy employed. The thorough washing out of the lower intestine will for a few hours reduce the putrefactive condition, as well as the toxins in the urine. That this condition remains for a few days only is proved by the gas volume arising immediately again to above 50 per cent. and the toxins as quickly reappearing in the urine. I have made a careful study of the comparative value of the different cathartic remedies in removing the toxins. I find the action of the saline cathartics is but slight in this respect, and gives only temporary relief, that cascara scarcely affects them at all, but that a full dose of castor oil quite thoroughly removes them for the time being. When the saline cathartic is preceded by a dose of calomel the effect is marked, but only for three or four days. This is undoubtedly due to the antiseptic quality of the bile which is increased by the calomel.

These statements regarding intestinal antisepsis are not based on one or two instances, but on a great many, always corroborated by laboratory analysis. If there is today an antiseptic which can be given by mouth, and reach the point in the large intestine where its action is needed, and be of any material use, I have been unable to discover it. That bile is a powerful antiseptic in this condition is proven, for in the crisis which often occur in these cases when the increased flow of bile is paramount, the sulpho-ethers begin to decrease even before the purging begins and entirely disappear soon after, but when a cathartic is used which does not increase the flow of bile, the sulpho-ethers increase for the first twenty-four hours and then decrease for twenty-four hours, when they begin to gradually work back to their original level.

I have employed the Metchnikoff bacillary treatment in every form, having used the various milk preparations, also many preparations of the bacillary tablets. I believe I have tried all the different American products as well as those of European manufacture. In those cases in which I have prescribed a bacillary milk diet only, cutting off all other food, the putrefaction has disappeared, the gas volume being reduced to a minimum. The patient will ordinarily thrive well for a few days, perhaps for a week or more on this diet, but his strength will then rapidly decrease, and it has been impossible to maintain a working energy on it for a great length of time. I am satisfied, however, that occasional periods of diet of this kind may be beneficial in some cases. If the bacillary tablets are fresh they have a certain beneficial action, but that this action is limited when the colon is the seat of the putrefaction is proven by laboratory analysis of the feces and urine, as well as by failure to remove the clinical symptoms. It has been sufficiently proven in my cases that the lactic bacilli in this form have a limited action in destroying Welch's bacillus and lessening putrefaction, but that they have very little if any action in destroying the Shiga or diarrhea bacillus. It is for the destruction of this special bacillus that the milk preparations surpass the dry forms. The limited action I refer to in the reduction of putrefaction is the lessening of gas volume, as well as the indol and skatol. The bowels will be slightly more regular, and other symptoms attributable to putrefaction may be relieved to a certain degree, but the action is not sufficiently powerful to eradicate the condition when it is confined entirely to the lower bowel. Somewhat different has been my experience when the putrefaction is in the small intestines, as evidenced by the sulpho-ethers in the urine being out of all proportion to the condition found in the stool. Here it is that medication will be found most useful and the lactic bacilli of the greatest benefit. The method and thoroughness of administration are most important. When given on an empty stomach the efficiency of the lactic acid bacilli is much greater than when given after meals, but they are liable to produce disturbance of the digestion. When administered after meals it is claimed the bacilli aid digestion, but that their effect in overcoming the putrefaction is lessened is proven by the following case. The fecal examination in this case before treatment showed 96 per cent. putrefactive gas volume, with a large amount of indol and skatol, and urine examination showed 0.70 gram of sulpho-ethers. The patient was placed on the dry bacillary treatment, two tablets one half hour before meals. After four weeks of such treatment the examination of the feces and urine showed gas volume 21 per cent., trace of indol, no skatol, and sulpho-ethers 0.18 gram. The tablets were now given immediately following the meals. After four weeks of this treatment, examination showed gas volume 110 per cent., with a return of the indol and skatol, and sulpho-ethers 0.91 gram. Reverting to the original form of administration the former good results were obtained. I could cite at least five similar cases.

It would appear from this that the claim that dry bacilli given after meals are just as effective as when given on an empty stomach is not true, but they even make matters worse by interfering with digestion. The most effective method I have found of administering the bacillary milk is to give it with the breakfast. The meal should consist of some kind of cereal, preferably rice or the malted foods, plenty of milk and sugar, a cup of cocoa made with milk, and a couple of slices of bread. With this breakfast there are given about eight ounces of bacillary milk. We here not only get the effects of the bacilli taken in the preparation itself, but the sugar furnishes a fermenting medium to convert the milk taken with the cocoa and cereal, which I believe prolongs the action for a greater period than when taken in the ordinary way. This has been my most successful method of administering either the milk or dry preparations.

I consider the breakfast as given above a very essential feature of diet. The way the food is eaten is also very important. There is no condition in which eating slowly and chewing the food thoroughly has a more beneficial action than in autointoxication. Very little fluid, not more than four or five ounces, should be taken with either the lunch or dinner, but plenty of water should be drunk between meals. I believe it is better in most cases to confine the diet to meat once a day. Yet I must admit I have found no great reduction in the putrefaction by cutting out meat, as evidenced on examination of the feces and urine. Veal and pork should be taken very abstemiously. Whether canned meats or fish are bad in this condition I cannot say as I have had no experience with them. I believe fresh white bread produces more intestinal putrefaction than any other article of diet. If one will take the trouble to make proper laboratory examinations, when one is eating a quantity of fresh white bread and when the patient is eating a limited amount of starch treated bread, such as is used for diabetes, one will be surprised at the great decrease of putrefaction with the latter. Eggs disagree with some people and in such cases should be avoided, but when they are acceptable they may be eaten prepared in any way except hard boiled or fried. I have been unable to discover that one kind of vegetable produces more putrefaction than another. I believe the patient is much better off without beer, wine, or spirits of any kind. Beer markedly increased putrefaction in every case I have observed. The sulpho-ethers and the putrefactive constituents in feces increase more from beer than from any other article of food and drink I have observed. Milk as a rule in large quantities is not tolerated by people suffering from autointoxication. Cream or other fats are not well borne. Cake and pastries should also be avoided.

It is my purpose to give a special form of local treatment for the eradication of this putrefactive condition when located within the large intestine, an eradication which has been found to be more or less permanent in its action, according to the thoroughness of the treatment, and the subsequent care of the patient's diet and hygiene. Starting with the premises that the colon bacilli feed on oxygen, that the putrefactive bacilli are destroyed by this same agent, and that the former must utilize all the available oxygen in the intestine before the latter can materially manifest themselves, I sought some method by which I could thoroughly oxidize, not only the surface of the lining of the large intestine, but also carry this oxidation within the glandular cells and tissues of the membrane. The technique of the treatment should be carefully followed, as it is only by exercising great care in this respect that success will be attained. I first give a high enema to empty the bowel of fecal matter, so that the antiseptic afterward employed will not be utilized solely in destroying this dead matter, as well as to clear the membrane that the action may be unimpeded upon its surface, and thus enable a better osmosis or anaphoresis to take place. A colon rectal tube is employed. In introducing it care should be exercised not to allow it to double up, as in a majority of these cases there is a capacious rectum which readily permits it to do so. The tube should be well lubricated so that it will not impinge upon the sphincter, as its easy passage through this muscle is necessary in determining whether it is progressing straight up the bowel. After it has passed the sphincter for an inch or more, the movement onward should be made by easy stages, not more than an inch or two at a time, and made with a delicate touch. If the tube is well lubricated, and the sphincter is not unduly tight, as soon as it begins to double up owing to obstruction, its elasticity is sufficient to force it back when pressure is relaxed. Rolling the tube slightly may change the position of the point so that it will pass an obstruction. Allowing the fluid to flow will also have a tendency to clear away a slight obstacle, as well as stiffen the tube. The next point is the slow and careful introduction of the water. The bag is placed but little higher than the body of the patient. The water should flow very slowly to prevent a sudden damming up at the end of the tube, but be allowed to work its way back beyond the fecal mass, and at the same time to soften and percolate through it. For this preliminary injection I use only plain water. If possible the patient should rest for a few minutes before going to the closet, where the bowel is thoroughly emptied. The patient is again placed in position and the tube is reintroduced. With this second injection an electric current is employed. A large electrode, which thoroughly covers the abdomen, is placed directly over the line of the transverse colon. To this is attached the positive pole of a continuous current. The other rheophore is attached to an instrument by means of which the current is made to traverse the fluid injected, thus making it the negative pole. One word regarding this instrument. I formerly used a rectal electrode I invented a number of years ago, which I believe was the first electrode used for hydroelectric application, and as it has been before the profession for so many years it need not be described here. This electrode, however, was capable of being introduced into the rectum for the distance only of a few inches. I therefore devised an electrode for the treatment I am about to describe, which also serves as a connection between the leader of the syringe and the colon tube. This consists of a piece of hard rubber tubing, having the usual corrugated ends for the attachment of the rubber tubes, with a sufficiently large opening to allow the fluid to pass freely. In this opening is placed a piece of platinum wire soldered to an ordinary split tip connection which leads up through the side, and to which the rheophore is attached. This instrument is left in permanent connection and serves the purpose of conducting the fluid and the electrification of it admirably well. For this second injection a normal salt solution is used, to which are added two ounces of fresh electrozone per quart of water. There is undoubtedly a certain amount of

chlorine also set free by the passage of the electric current through the normal salt solution. As chlorine is strongly anaphoretic in its electrochemical affinity, we not only get its action upon the surface of the membrane of the intestine, but also carry it within the glands and follicles of the membrane itself, and it is here that its action is most needed. The action of chlorine in this connection is too well understood to call for elaboration here. I may mention, however, that the chemical affinity of hydrogen for chlorine is so much greater than it is for oxygen, that the $H_2O$ is split up, leaving a free oxygen. As stated in the first part of this paper, anaërobic bacilli cannot thrive in the presence of oxygen, and the formation of the different groups of the anaërobic bacilli is because the colon bacilli have first consumed all the available oxygen. The oxygen thus set free in this treatment not only destroys the entire group of anaërobic bacilli, including Welch's bacillus which causes the putrefaction, but it also destroys the medium on which it thrives, and at the same time furnishes food for the normal bacilli, thereby building up a strong family of the normal group.

In properly selected cases I have never seen such positive results as this treatment produces. The number of treatments required varies as to the condition of the patient. In most cases from eight to twenty treatments given daily will suffice. The indican and sulpho-ethers gradually disappear from the urine. The skatol disappears from the feces, the indol is decreased, and the gas volume is reduced to from 12 to 18 per cent. The clinical results are manifest by the disappearance of the insomnia and other conditions depending upon the autointoxication.

I wish to say in conclusion that the laboratory analysis in all these cases have been made by Drs. William McKimmie Higgins and J. J. Connellen.

64 West Fifty-First Street.

## BLUNDERS MADE BY NATURE.

### THE PART PLAYED BY NATURE IN CAUSING DISEASE OF THE GENITOURINARY ORGANS AND THE SKELETON.

By AUGUSTUS MAVERICK, M.D.,

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### Genitourinary Organs.

In his book, "The Nature of Man," Metchnikoff[1] mentions several natural disharmonies in connection with the sexual organs. He draws attention to the uselessness of the hymen. Placed as a screen before the entrance to the vagina of virgin women it not only serves no useful purpose but sometimes acts as an impediment to the free outflow of the menstrual blood, causing the woman much suffering and allowing bacteria to grow in the stagnated blood clots and retained secretions. The first step in married life is to break the hymen and this may cause so much pain to the woman that she may fear and repulse her marital duties for a long time afterward. The husband on account of the hymen sometimes experiences such great difficulty during the first days or weeks of marriage that this initial sting of discontent may remain as a permanent scar upon his married life—for as much as he may fool himself in not believing it the sexual item is the most important in his marriage if he marries for love. In certain savage tribes it is the duty of the high priest to break the hymen of all brides before turning them over to their husbands, but in our race we do not place the same confidence in the presiding marriage official and prefer to take care of our own troubles from the beginning.

As useless as the hymen in the female is the prepuce in the male. Here is a worthless flap of skin which tends to collect dirt and decomposing secretions and predisposes the individual to venereal disease. Sometimes it is so tight that upon working back it constricts the urethra and hinders the passage of urine. Of the many excellent hygienic rules which Moses handed down to the Jews circumcision of all male infants is one of the best. The only disadvantage claimed against excision of the prepuce is that it lessens the sexual power, but judging from our Hebrew friends this is by no means the case.

Menstruation is one of the crudities of nature which we could readily dispense with and very willingly. "Menstruation," says Matthews Duncan, "is like the red flag outside an auction sale; it shows that something is going on inside." What goes on inside is not only a profuse flow of blood from the over-distended uterine vessels but more or less complete shedding of the inner lining of the womb which must renew itself after each menstrual period.[2] This natural loss of blood each month may act as a drain on weak and ill women which makes their condition steadily worse. There is also usually more or less general illness associated with menstruation—often headache, backache, pimples on the skin, nervousness and depression, and neuralgic pains. In some women there is an exaggeration of these purely natural symptoms, forcing them to bed in agony one week out of every four.

The uterus, as we know, often shifts from its original position, causing trouble by pressing upon the rectum or bladder or sensitive nerve trunks or kinking its neck so that the menstrual blood can only escape under difficulty and with great pain to the woman. The ease with which this displacement takes place is entirely due to insufficient natural support. The uterine ligaments are merely guy ropes which allow the uterus to swing in almost any direction. There is an advantage in this free movement when the uterus becomes pregnant, but it is unsuited for the erect posture of man. Falling of the uterus is also quite common and due to the same cause. Once this organ has become parallel to the vagina there is little to keep it from passing down. Nature's failure to fully develop certain parts of the body at birth is sometimes illustrated in the uterus. Thus the uterus may be double, its interior may be separated by a partition, or it may take other strange shapes which tend to interfere with its function.

In the vicinity of the ovary there are several little remnants of embryonic life and lower animal days, which serve no purpose. The significance of these in the production of disease is that they not rarely become the seat of different kinds of cysts and tumors.

In the male a testicle sometimes fails to pass all the way down to the scrotum but remains in the groin as a sensitive lump causing much discomfort and usually necessitating surgical removal. It would have been much better for us if the testicles had remained altogether in the abdomen and had a place prepared for them there. Situated in the position nature has given them these important and very sensitive little bodies are far too easily injured. The cremaster muscle is intended for drawing the

testicle up out of harm's way, but in man it is entirely too weak for the purpose. The prostate gland in later life has a natural tendency to grow larger, possibly to compensate for the declining sexual power of old age. One-third to one-half of all men over sixty show this hypertrophy of the prostate.[3] If some isolated organ like the testicle cared to enlarge naturally it would excite little inconvenience but the prostate encircling as it does the first part of the urethra causes compression of this tube by its enlargement and dams the urine back in the bladder. Partial or complete suppression of urine is the result unless the gland is surgically removed.

Falling of the kidney from its original position is quite common in women and occasionally causes much distress. Like many other organs the support of the kidney is not entirely suited for the erect position of man. A simple pad of fat plays a large part in keeping it in place, and when the fat wastes away as it is apt to do after childbirth or general emaciation from any cause the kidney passes down like a wedge and gains its freedom. Tight lacing sometimes aids the natural conspiracy. The kidneys have the reputation of being great filters, but we are quickly finding out that they are not perfect by any means. Formerly when the kidneys allowed a little of the albumin in the blood to filter through into the urine we thought they were diseased, but now we know that perfectly healthy kidneys often allow albumin to pass with merely such slight encouragement as a cold bath, a hearty meal, or muscular exercise.

The ease with which pregnancy is prevented has become one of the pleasantries of the family fireside. Some savage tribes are said not to realize any connection between coitus and childbearing, and this is probably the natural way of looking at it, for when nature built the sexual organs it never expected that we would ever trace the spermatozoon to its lair or follow the ovum in its flirtations down the Fallopian tube. As different writers have pointed out, the fertilization of human ova is much inferior to the system of fertilization in plant life. There is an enormous waste of ova and spermatazoa during the life of each individual, for it is usually a thousand to one shot that nature will miss the spot and it must use plenty of bullets to make up for its lack of skill.

Numerous pseudoscientific writers, especially in Germany, have written a metropolitan library full of volumes concerning the discord which often arises in married life from natural causes. This literature often makes interesting reading but has little or no practical value because the writers look at the subject from a purely selfish standpoint. They think nature is at fault because it does not cater to their private tastes, forgetting that what may be agreeable to us may be injurious to nature itself. If we are to find fault with nature we must do so on nature's own ground without consideration of our own selfish ends. Thus we might say that nature blundered when it allowed so many bacteria to nag at us; but we cannot do this because the bacteria serve nature's end to keep thinning out other forms of life; likewise while the bacteria are troublesome to us we must not forget the bacteria's own point of view, since they occupy just as important a place on the scale of living things as we do ourselves. In nature's eyes we are no more important than the bacteria, in our own eyes we are the rulers of the universe and all living things were made especially for our benefit. We are inferior to bacteria in one thing at least, namely, modesty. If we wish to pick fault with nature, therefore, we must consider nature's advantage in the matter rather than our own. Thus when nature takes every precaution to protect our brain from injury and infection from without and then carelessly leaves little holes in the roof of the nasal cavity for the virus of meningitis and infantile paralysis readily to enter the skull, we may fairly say that nature blundered, not because we die or remain paralyzed, but because nature defeats her own efforts to protect the brain. It is in this way, therefore, that writers on the incongruities of sexual life lose their bearing.

In spite of themselves, however, they occasionally hit the right spot. They truthfully point out the disadvantages of the various sexual functions' failing to develop at the same period. Thus a girl is apparently ready for childbearing at the age of puberty but as we all know the sexual instinct comes several years in advance of the proper development of the childbearing organs, so that to follow nature's signal of beginning womanhood would be detrimental to the health of the young girl and to the life of the child. The spermatazoa commonly becomes active before the boy is sexually capable and they may remain so long after the old man has become impotent. The sexual desire may persist for some time after the testicles or ovaries have been destroyed by disease or surgically removed causing considerable nervous disturbance. Nervous symptoms connected with the beginning and end of sexual life in women are purely natural, but as we know they sometimes make the woman a nervous wreck for the time being and may even encourage an outbreak of insanity. The unhappiness to married life which so often arises because of a difference of sexual feeling between man and wife is frequently pointed out as an unnecessary burden placed on us by nature, but we can hardly find fault with nature for this. Nature believes strictly in polygamy and expects us to mate as often as it is necessary to find perfect harmony. To act naturally means to perform rape and adultery and run a harem; if we live unhappily because we do not act naturally we have our own taste to blame and not those of a lascivious and unchristian nature.

### The Skeleton.

When nature allowed man to take the erect posture there were many anatomical structures about the body which were altogether unsuited for the change of position. During the thousands of years that followed, most of these were remedied by nature in its slow and often incomplete way, but not a few remain with us today as glaring examples of nature's lack of enterprise. One of the most conspicuous of these is the arch of the foot. At least one-third, some say one-half, of all adults today have arches too weak to support their weight with more or less flatfoot as a result. Forty per cent. of all applicants rejected by the United States Army fail because they have flatfoot, and these applicants are young men in the prime of life.[4] The ligaments of the arch are in the first place too weak to keep it from flattening out, and as the arch yields the bones of the foot atrophy from pressure; the insertions of the leg muscles beneath the foot are called upon to support the falling arch, but they were not originally arranged for this purpose and their attachments are not suitable to lend much aid. Overde-

veloped leg muscles may compensate to a certain extent for weakening arch ligaments but as a general rule the larger and more robust an individual, the more his arches suffer from the additional weight. Some races like the Arabs are lucky in having naturally high arches while others, especially negroes, have very low ones. Shoes have nothing to do with the cause, for a shoe with a heel really supports the arch. Much of the trouble is due to the fact that the foot is not placed at right angles to the leg as it should be for walking and standing purposes and really needs a little support under the heel to tilt it forward. To stand around barefooted in the natural way will encourage flatfoot quicker than anything else as is so well illustrated among sailors and washerwomen. The suffering and hindrance to standing which flatfoot causes is too well known to need discussion.

Above the first rib in the neck another one sometimes arises on each side and is called the cervical rib. It plays no part in the formation of the chest and is entirely a useless structure. In most cases it remains merely useless but sometimes it is long enough to get in the way of the nerve trunks and vessels of the neck and produce much mischief. Its pressure on a vessel may cause aneurysm or thrombosis; upon a nerve trunk, persistent neuralgic pains, muscular atrophy, or interference with respiration.[5] As pointed out in a previous article[6] a series of little ribs properly arranged around the neck with a plate of bone in front would do much to lessen the frequency of injuries to the windpipe, the large neck vessels and nerves, and the ease with which the neck is broken. An extra upper rib is less frequent than an extra one below; in fact there is a natural tendency for the upper part of the chest to degenerate in order to shorten the trunk and, as before mentioned,[6] this degeneration affecting the lung apex helps predispose this part to tuberculosis. Extra lower ribs are also of course useless supplements, but they are in a good place not to produce harm by interfering with important structures. The lower ribs in the normal thorax could readily be dispensed with since they give little or no protection to internal organs and are useful only for the insertion of such rudimentary muscles as the serratus posticus inferior and part of the latissimus dorsi.

In a previous article[7] the natural tendency of the lower part of the spinal cord to degenerate and how this weakened this part to the virus of locomotor ataxia was also mentioned. There is a lot of useless space lost in the lower part of the vertebral column; the cavity of the spine runs down into the sacrum but the spinal cord itself ends in the lower thoracic vertebræ and only a little strand of nerve fibers runs on toward the end of the passage. This is not due to the tendency of the spinal cord in man to degenerate and allow the brain to do all the heavy work, for the same is found in lower animals and it is said that in such a low animal as the hedgehog the cord ends far up in the anterior thoracic region. The os coccyx representing all we have left of a tail is, of course, vestigial. It sometimes becomes broken during childbirth from sticking itself in the way of human progress and causes quite a little pain afterward, but otherwise it never bothers us by its presence. The wearing of tails is no longer considered fashionable, but that we did once have tails and are prepared to grow them again should the fashion change is shown by remains in our pelvis of tail-wagging muscles now rudimentary and degenerative from lack of use. Wiederscheim[8] divides these muscles into two groups; the ventral, made of the coccygeus and curvator coccygeus, and the dorsal, consisting of the extensor and levator coccygeus, in addition to which is sometimes present the caudofemoralis which flexes and abducts the tail when the thigh is fixed. Wiederscheim also calls attention to the remains of arteries and veins which formally nourished the tail; how the continuation of the abdominal aorta is sometimes represented by a variable weak vestigial vessel, the arteria sacralis media, a duplicate of the caudal artery in some long tail animals. Even today we very rarely hear of a child being born with a tail and there is a picture of one in Gould and Pyle's "Anomalies and Curiosities of Medicine."[9] These modern tails, however, are too short for any use, unless it is to make the father stop drinking.

The skeleton shows many variations in its more intimate anatomy. These make little difference about the trunk and limbs, where the bones are for the most part large and clumsy anyway, but in the face slight changes from the original may be the cause of much trouble. A good example is seen in the frequent tendency of the bony palate to arch too far upwards causing irregularities of the teeth, deflection of the nasal septum, and mouth breathing. The retraction of the jaw in higher races has been a factor in the production of irregularities of the teeth so common among us. Occasionally a natural reversion is seen among our race in which the jaw becomes unduly prominent again, causing the lower row of teeth to stick out beyond the upper row, making perfect chewing impossible.[10] Sometimes there is a natural bending inward of the tip of the shoulder blade causing persistent shoulder pain of obscure origin.[11]

The phalanges of the fifth and less conspicuously of the third and fourth toes are well known to be vestigial, no longer of use and showing a degenerative tendency. This would readily explain the commonness of corns on the little toe. Corns are, of course, caused by shoes, but if nature had not allowed the little toe to degenerate corns would be much rarer, even though we were foolish enough to squeeze a number eight foot in a number seven slipper.

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**Paratyphus-B Infections in Animals.**—E. Job calls attention to the frequency of this infection in animals and emphasizes the importance of the bacteriological examination of all slaughtered animals as a means of detecting this form of contamination.—*Revue de Médecine.*

# THE COMPULSORY DETENTION OF THE HOMELESS TUBERCULOUS.*

By EGBERT GUERNSEY RANKIN, M.A., M.D.

NEW YORK.

At the autumn meeting of this society in 1904, I had the honor of presenting a paper in which the above measure was suggested. To-day I will again, with your permission, present the same subject, but in a more definite and positive manner; and at the same time I will endeavor to show sufficient grounds for a stricter application of a law which, if effectively applied, would eliminate one of the most potent sources of the spread of tuberculosis.

It is not generally known that in the City of New York the Department of Health, Sanitary Code, Section No. 139, has the power to detain forcibly homeless, positive cases of tuberculosis. Instead of discussing the application of this law—or rather as matters now stand, its nonapplication—let me state a few conditions which bear upon the situation.

There is no disease which calls for classification and segregation according to social conditions to such a degree as tuberculosis. This is obvious from its very nature, especially from its manifestly greater prevalence among the lower classes. New York has its numerous so-called "lung blocks," and they are located just where one would expect to find them, namely, where the crowded tenements prevail, specially those inhabited by peasants of Eastern Europe and of Sicily, and Jews of a low class.

To designate the mode of living of this type as unhygienic is almost an euphemism to cover harsher words. Joined to squalid surroundings, there is ignorance and indifference to anything better. Cleanliness is not attainable, and if it were, often would not be appreciated.

The tuberculous patient who is well placed in life generally, if not always, seeks restoration in some well-appointed sanatorium and is not a menace to the community. Those of slender means, or none, such as clerks, salesmen, and others of this class, are usually cared for by friends or find refuge in some semi-charitable institution; they, likewise, are not a menace to the public health, for they cannot be regarded as belonging to the class I have in mind, and their habits of living are not such as to constitute them a source of danger.

The class to which I refer is composed of those unfortunates who either have no settled abiding place, or who live in lodging houses of the poorest type, or are members of a family living in a crowded, dark, and unclean tenement apartment. Many of these persons have been laborers of various kinds, workers in the street excavations, sweatshop workers, etc., some of them tramps, some of them "hospital rounders," and most of them enter a hospital in an advanced stage of disease, having refrained from seeking relief until general weakness compelled them to do so. Many of this class, again, are alcoholics. Some go to one tuberculosis hospital for a while, then to another, then out again; then into a hospital once more, then out for a while, and so on, as long as they can continue. This is a matter of record in the Bureau of Dependent Adults of the Department of Public Charities of the City of New York. These are the "rounders." In the intervals of their sojourn in the city does any one suppose that these persons are careful about their sputa? They belong to that large class of public spitters which in New York is allowed by the police to violate the law with the utmost impunity.

I am speaking as the result of experience in the Tuberculosis Division of the Metropolitan Hospital, with its 904 beds. This institution, as is well known, is for the poorest class. While the vast proportion who enter it are in a more or less advanced stage of disease, some so far advanced that they simply come to find a place in which to die, a large majority are ambulatory cases, many of which improve. It is this class which constitutes the chief source of danger.

A daily experience in the Metropolitan Hospital Tuberculosis Division is as follows: A patient applies for discharge, perhaps one of the physically better types, having improved (I am glad to be able to say that many do improve), or a patient desires to leave who has not improved—simply wishes to return to the city. The reason often given is a desire to seek employment, which is genuine in some cases, but in others is sometimes a craving for an alcoholic debauch. In all instances the patients present more or less pronounced evidences of tuberculosis, the majority with abundant bacilli in the sputum. They will be told that they are not in condition to leave, that if they do go it would be dangerous or even fatal, that they will come back much worse, etc.; but no, they will go.

Does any one suppose that persons of this type heed the cards of instructions which are given to everyone on leaving the hospital, which briefly state how to take care of tuberculosis and how to avoid giving it to others? These cards or leaflets are printed in several languages, and in the Yiddish dialect.

Let me cite a case for the sake of illustration. The patient, a fairly intelligent Irish laborer, about fifty years of age, after six months in the hospital, during which time he improved considerably, applied for discharge. Notwithstanding improvement, there were abundant bacilli in the sputum and marked evidences of tuberculous disease in both lungs. He was informed that it would be harmful for him to go out unless he had a home. He had none, but said that he wanted to go to work. After about three weeks he returned, having lost all that he had gained. On being asked what he did, he replied that he had two dollars, and as long as that lasted he slept in lodging houses; after that, in the park squares, the weather being mild. A case like this has a two-fold aspect; it not only is a source of spreading the disease, but the possible chances of recovering are thrown away, which is perhaps the lesser of the evils.

The Tuberculosis Infirmary makes it a rule to notify the Department of Health three days before the discharge of patients. This rule, I believe, has been followed by all the other tuberculosis hospitals in the Department of Public Charities of the City of New York. During this period the home of the patient is investigated by the Health Department to ascertain if it is suitable for the care of the patient. This department, however, only visits regular bona fide residences, not lodging houses. According to the report published last year it had 159 nurses engaged in tracing these patients, and 21,700 visits of this nature were made in 1911. It also sends nurses to visit the homes of tubercu-

*Read at the meeting of the New York State Homœopathic Medical Society, Albany, February 11, 1913.

lous patients to give instruction as to care, and to exercise a general supervision. In 1911, 231,183 visits of all kinds were made. All most excellent as far as it goes; but let us look further.

First, let me call attention to the fact that the Department of Health visits only alleged bona fide home addresses; lodging houses are not visited. According to the Metropolitan Hospital statistics this leaves about 40 per cent. (namely, 328) of the infirmary male patients without any surveillance from the Department of Health after discharge. Some register from lodging houses so as to escape this department.

Again, during the calendar year 1911, there were admitted to the tuberculosis hospitals of the City of New York 15,145 persons. Of this number it was estimated that 3,786 were readmissions, leaving the number of individual cases 11,359. Of this number 6,122—a percentage of 54—were classified as homeless. This is according to the report of Mr. F. S. Mann, secretary of the committee on tuberculosis of the Charity Organization Society.

The Department of Health report shows that on December 31, 1911, there were 32,635 cases of tuberculosis on its register. The total number of different registered cases for the year 1911 is 55,121, though the actual number on the register at any one time is about 32,000. For the year the number not found at the addresses given is stated to be 7,454. In regard to these cases the Health Department says: "They may be grouped under four heads: (a) Patients giving false addresses; (b) Patients giving correct addresses when reported by a hospital, but failing to return to that address upon discharge; (c) Cases moving in the interval between nurses' visits at the addresses given and leaving no address; (d) Cases which reside at the addresses given, but which the nurse cannot find. Often the patients are boarders in a family, the name of which is not given."

It will thus be seen that there is a very large number of tuberculosis sufferers of an irresponsible class, wandering at will, as it were, throughout the city, upon whom there is absolutely no restraint.

In 1911 the number of cases forcibly detained by the Health Department was 54; in 1912 it was 73—a contrast to the number reported as homeless. The Riverside Hospital has a capacity of 160. In this institution there are two new buildings approaching completion, with an additional capacity of 160 (80 each), making a total of 320. Another Department of Health Tuberculosis Hospital, that at Otisville, is for the better class of cases only. In the year 1911 there were admitted to the tuberculosis institutions of New York, not including sanatoria, 11,309 persons, not counting readmissions; of this number 3,359 died in these institutions, leaving that much room for new admissions, but leaving a total of 8,000 to be cared for.*

The present number of tuberculosis beds in New York is 2,635, and about 1,000 more will be added as soon as Sea View Hospital on Staten Island is opened, making a total of 3,635. With over 30,000 registered cases, of which at least over 6,000 are apparently homeless, it is obvious but a small portion could be detained; therefore, the need of a still greater number of beds for tuberculosis is manifest. This number necessarily varies according to different observers; about 7,000 is the figure usually given. The Hon. Homer Folks says that for the State outside the city the number of tuberculosis beds should stand in relation to the number of deaths from tuberculosis in the proportion of two to three, two beds to three deaths; and in the city there should be as many beds as deaths, so according to the number of deaths from tuberculosis in the city in 1911 (10,248) there should have been 10,248 beds, according to this estimate.

It is obvious that under present conditions an effective solution of this problem of caring for the homeless tuberculosis population is impossible. What should be done, however, is plain; namely, an increase of hospital accommodation should be provided, and Riverside Hospital should be made exclusively a place of detention.

The situation may seem hopeless, but it is not so. Something has been accomplished, for in 1905 the death rate from all tuberculous diseases was 2.40, and in 1911 it was 2.20. In the instance of pulmonary tuberculosis the decline was greater, being in 1905, 2.12, and in 1911, 1.76. It should be taken into consideration that during recent years there has been an enormous influx of foreigners into New York of a low type. One has but to observe the streets to note this unwelcome fact. Many of these people represent generations of poverty and bad hygienic conditions, as evidenced in their physiognomies and physique, and they naturally more readily fall victims to tuberculosis. In other words, tuberculosis has decreased, notwithstanding the fact that the class from which it chiefly recruits its ranks has increased.

The number of homeless tuberculosis patients herein given, namely, 6,122, may be too large, for it is difficult to be accurate when computing the number of persons who have no settled homes and whose addresses are sometimes fictitious. However that may be, the fact remains that whatever may be the exact figure there is a large number of persons with tuberculosis in New York upon whom no restraint or surveillance is possible as matters now stand. Why should they be allowed to spread their infection?

226 Central Park, South.

*Report of Mr. F. S. Mann, Secretary Committee on Tuberculosis, Charity Organization Society.

## TUBERCULIDES.

By WILLIAM P. CUNNINGHAM, M.D.,

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In attempting to define a tuberculide I am reminded of the banal witticism of our childhood days, to wit, "When is a door not a door? When it is ajar." When is a tuberculosis cutis not a tuberculosis cutis? When it is a tuberculide.

A tuberculide is a disease of the skin, in some unproven and uncertain manner, indirectly and circumferentially, connected with tuberculosis. It is like tuberculosis; but it is not tuberculosis. All this is delightfully vague. The elucidation runs something as follows: In true tuberculosis cutis the bacillus is demonstrable. In a tuberculide it is not. But the tuberculide often occurs in association with tuberculosis elsewhere, and it is assumed that the toxins of the bacillus are responsible for its production. In other words it is a by-product and not a direct product of the bacillus. Examples of

true tuberculosis of the skin are found in lupus vulgaris, tuberculosis verrucosa cutis (really a warty lupus sometimes called lupus verrucosus), verruca necrogenica or anatomical tubercle, and Bazin's disease or erythema induratum. Examples of the tuberculide are found in acne varioloformis, acnitis, folliclis, acne scrofulosorum, and lupus erythematosus. The classification of lupus erythematosus as a tuberculide is vigorously disputed, so we will confine our attention to the admitted tuberculides, leaving acne scrofulosorum for indepepdent consideration at the end.

Acne varioloformis, acnitis, and folliclis are really variants of one disease. They are histologically identical. They differ only in location and sometimes in size. It is as if one should attempt to distinguish ordinary acne into three diseases, namely, acne faciei, acne dorsi, and acne brachii. They would all be acne and nothing else. So with the three titular diseases under consideration. They are simply tuberculides, differently named to the everlasting glory of some discerning dermatologists and the everlasting confusion of most of the profession.

Acne varioloformis occurs mainly in the scalp, on the forehead, on the temples, on the ears, and on the cheeks in front of the ears. Acnitis shows a tendency to fill in the space left vacant by the preceding, namely the chin, cheeks below the orbit, upper lip, and upper eyelids.

Folliclis attacks the limbs, especially the forearms, legs, hands, and feet. The differences between these three conditions are purely arbitrary, largely fanciful and of no practical importance whatever. It is the reproach of specialism that it tends to split the obvious into many trifling antagonisms, obscuring instead of clarifying the subject by unnecessary refinement in diagonsis.

Taking acne varioloformis as the type of the tuberculide it may be stated that it begins with an acne-like papule whose evolution leaves a pitted scar like that of variola. Hence the derivation of the name. On the papule appears a pustular top which dries down into a depressed scab giving the little lesion a saucer-shaped appearance. There is a destruction of tissue accounting for the synonym acne necrotica and the pitted scar. The disease is indolent. The duration of the individual lesion is about three of four weeks, but new lesions continue to appear, so that the disease as a whole may persist for months or years.

The lesions may be sparse or numerous. I have noted one peculiarity that does not seem to have been emphasized before, namely, a rough uniformity in the size of the lesions in each individual case. Small lesions predominate as a rule, but I have seen them as large as the old-fashioned three-cent piece. In the other extreme they may be no larger than a pin-head. The eruption gives little annoyance beyond a slight itching which is not always present.

A fact of some interest in connection with the etiology of this condition is that it is not confined to those with other evidences of tuberculosis, or with a tuberculous history. It is sometimes found in those apparently robust and healthy. Apropos of this, I was much struck by the statement of a physician attached to a prominent tuberculosis sanatorium in New York State, to the effect that tuberculosis cutis and tuberculides were uncommon in his experience. In fact, he was unfamiliar with their manifestations.

The lesion is an infective granuloma. There is a round-celled infiltration about the hair follicles or independent of them, followed by inflammation and necrosis. Tubercle bacilli have not been found in these growths. Their inoculation in the guinea pig has not produced tuberculosis. Sabouraud is of the opinion that the lesions have no relation to tuberculosis at all, but are produced by the conjoint action of the microbacillus of seborrhea and the staphylococcus.

His microbacillus produces the acne papule, and the staphylococcus the suppuration and scarring. Crocker remarks that this explanation is so beautifully clear it ought to be true, but he considers it strange that, if the conjunction of two such common organisms is all that is required, the disease should be so very rare. It might be answered that, if the presence of the tubercle bacillus or its toxins is all that is required, it is strange indeed that the disease is so very rare even in the frankly tuberculous. As the case stands we have to be content with a Scotch verdict "not proven." The only disease it is likely to be confounded with is a tertiary syphilide of almost identical appearance. Very acute differential diagnoses have been made between these cutaneous gemini, but truth to tell the distinction has rested often upon the *ipse dixit* of some eminent dermatologist, upon chance, or upon corroborative evidence of syphilis in the patient's skin or history. Of course if there is the characteristic crescentic grouping of syphilis, the distinction is plain. But in the absence of this it is frequently anything but plain. It is still further obscured by the fact that the therapeutic test, if applied for syphilis, is of little avail, iodide of potassium and Ung. Hydrarg. Ammoniat. operating successfully in both conditions. The Wassermann reaction in this stage of syphilis is positive only in about thirty per cent. of the cases. So the confounding of the two diseases is quite easy. The best means of differentiation are the Wassermann, if it chance to be positive, incriminating scars in other situations, or a history of luetic infection. Obviously there are cases so clearly one thing or the other, by reason of their course, duration, history, and other circumstances, that no mistake is likely. But in the border-line cases great care must be taken to avoid falling into error.

Treatment is effective and comparatively simple. The turberculide will frequently yield to the treatment for tertiary syphilis. It will also yield to applications suitable to acne indurata. If the therapeutic test mentioned above as being frequently misleading should take the form of treatment for the tuberculide instead of for syphilis, results of some value might be achieved; for the tuberculide will respond to the sulphur applications for acne (perhaps because of their antiseptic action) and the syphilide will not.

If the patient is below par suitable up-building remedies are indicated.

Acne scrofulosorum is a tuberculide which is not at all likely to be confounded with the three already considered. It occurs only in young children of strumous or tuberculous make-up. The sites of election are the buttocks, and the back of the thighs, but any part of the lower extremities may be affected. The eruption, as the name implies, consists of acneiform pustules, from the size of a pin's head to that of a pea, on an inflamed base. It comes out in scanty successive crops, leaving purplish stains but no scars. Pruritus is absent.

The treatment is that of the underlying cachexia, cod-liver oil, iron, hypophosphites, and a sustaining diet. Locally resorcin and sulphur ointments in low percentages are indicated. The results are speedily favorable.

Lichen scrofulosorum would appear to be a sort of admixture of acne scrofulosorum and lichen. It is not a real lichen. Some of the lesions resemble lichen papules, having the shape and the burnished top, but lack the lilac color. Other lesions are pustular. The eruption is on the trunk; rarely it extends to the face and limbs. Grouping in circles, and arcs thereof, is a pretty common arrangement. The victims are always children with direct evidence of, or a pronounced tendency to, tuberculosis. There is little likelihood of this rare disease being the cause of any confusion in the differentiation of the tuberculides.

Something has been said, I hope, to simplify the subject of the tuberculides and render their diagnosis less perplexing. As a final word I would reiterate the injunction to keep in mind the identity of type in these nominally different diseases, the type being the papule with the necrotic top eventuating in a depressed scar. Avoid distinction by titles. It makes no difference what else you call the lesion provided you properly call it a tuberculide.

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## THE PREVENTION OF ADENOIDS.

By WILLIAM BRADY, M.D.,

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So far as we are aware, the chief function of the ring of adenoid tissue surrounding the common orifice by which air, food, and water enter the body is that of guarding against the various infections which may gain entrance in the media of air, food, or water. This, from clinical and physiological observation, seems to be the purpose of the pharyngeal tonsils, the lingual tonsil, and the "nasal tonsil" or mass of lymphoid tissue which normally occurs in the nasopharynx of the growing child.

Some authorities, however, question the premises stated. It appears that partial or total extirpation of the ring of lymphoid tissue subjects the patient to no additional susceptibility to disease. The appendix, too, is richly endowed with lymphoid tissue, and while the appendix, like the tonsils, probably has some important function in connection with fetal and infant life and development, we observe no marked indications of injury to the health as a sequence of its surgical removal, even though it be a normal appendix.

The Cause of Adenoid Hypertrophy in Children.—Without denying the possible influence of mouth-breathing as a predisposing factor of hypertrophy of the nasopharyngeal adenoid tissue, it is difficult to believe that a child would acquire such a habit if the nasal chambers were not abnormally contracted. Children are the greatest imitators in the world, it is true, and one mouth-breather in a schoolroom may start a lot of unconscious mimicry, but is it not more logical to consider the habit of mouth-breathing as a result rather than a cause of nasal stenosis? That is to say, is not the child, with his naturally narrow nasal chambers, forced to open his mouth in order to breathe freely whenever the mucosa becomes turgescent from any cause

Anyone who has done special work on the nose and throat must agree that the infant's and young child's nasal chamber is a very restricted canal, and that its lining responds with wonderful alacrity to every temporary alteration of the general physical state. And even the general practitioner who never attempts to make rhinological or nasopharyngeal inspections must be aware of the fact that the lack of "resistance" on the part of the child's nasopharyngeal mucosa accounts for more than half of the diseases of childhood. These truths being admitted, why is the nasal and pharyngeal mucous membrane sought out by the bacteria of so many diseases? And what can be done to increase the local and general resistance of the growing child to these dangerous infections?

The foremost factor of mouth-breathing with its attendant evils is the intolerable atmospheric condition of the average home. We are not harping on the usual string here; we have no complaint whatever to make about draughts—except that there are not enough draughts—nor about unequable heating, excessive dryness of the air, and all that sort of old-fashioned "health" advice. The fault lies not with our methods of heating, but with the ultra-American habit of overheating the dwelling through the greater part of the year. You will find the idea beautifully expressed by a picture in a well known advertisement of steam radiators—a picture of Mr. Luxury-lover enjoying his morning panatella in slippers and pajamas, as he stands gloating with his back to the heat.

Adenoid and tonsillar hypertrophy is merely a concomitant or side issue of the "Indoor Plague." Having coined that horrendous appelation for the so-called common cold, it is but fair to interpret its meaning. By the indoor plague we would understand not only coryza with its manifold complications, medical as well as surgical, but also diphtheria, tonsillitis, and quinsy, influenza (not "grippe"), bronchitis, pleurisy, pneumonia, and pulmonary tuberculosis. These all too common maladies are known to be acquired solely through bacterial infection, whatever be the "predisposing" factors; and every one of them, from coryza to consumption, is caught through personal contact with a victim of the indoor plague or an unrecognized germ-carrier indoors. While it is unnecessary to discuss the pros and cons of the foregoing in this place, we would emphasize the neglected truth that vulgar, everyday, so-called "cold in the head" is just as contagious as is diphtheria or consumption if one comes into intimate contact with the patient indoors.

"Catarrhal tendency" is the vague term that describes the rebellion of the oxygen-starved lining of the nose and throat against excessive warmth in living-rooms or sleeping-rooms. The thickening of the mucosa accompanying that condition is invariably attended with an overgrowth of the mucous glands. The adenoid tissue in the fossa of Rosenmüller and the posterior pharyngeal wall ultimately takes part in the hypertrophy of congestion, and then the child has "adenoids."

Modern progress in therapeutics has demonstrated beyond a doubt the preventive and curative influence of outdoor life, at least in the case of pulmonary tuberculosis. And I am sure the better informed practitioner will agree that the same truth applies with even greater force in the case of pneumonia. If cold air exerts such marvelous effects upon these plagues, how much more powerful must be its preventive and curative influence upon the milder infections of the upper air passages. How much more certain is its

power to prevent the sundry more or less disabling infections which are thoughtlessly grouped under the misleading title, "a simple cold."

In these days of fresh air and common sense, the observing physician cannot help noticing how uncommon that one time disturber of the night has become—croup. The open bedroom window is robbing the night of its terrors for the mother, and robbing the doctor of many a hurried summons from sleep. Adenoids and croup are right-hand partners. Where one is common, the other is invariably present. Nature's germicide-tonic seems to be making good headway against both.

After a few months' incarceration in an overheated house a child becomes very susceptible to "head colds," or infection with the bacteria of the indoor plague. Hence his misguided guardians feel it incumbent to keep him indoors most of the time when he would naturally wish to be out playing in the snow. Thus warmth plus ignorance—for both of which evils the family doctor is to blame—keep the unfortunate youngster ever ripe for fresh "colds," and each acute attack leaves behind it a further thickening of the insulted adenoid tissue, until it finally dawns upon the mystified parents that in spite of their extreme care about exposing the poor child to the weather, there is something serious the matter.

Prevention is Better and Easier than Cure.—Were it only to save the growing child from the esthetic blemishes caused by adenoids, every possible means of prevention should be employed. But the damage to physical beauty and mental efficiency is a minor consideration as compared to the effects of the condition on the child's present and future health.

Since weather-phobia and excessive indoor life in overheated apartments produces the soil upon which adenoids develop, the sensible way to prevent adenoids is to permit and urge the children to play outdoors in all kinds of weather, regardless of grandma or Doctor Coddle, and to send them to schools where the open-air idea is practised. The sole precaution to be observed in keeping the youngsters outdoors in "inclement" weather is the one that any but an idiotic child is fully capable of looking after himself—personal physical comfort. The child who does not know enough to come in when he gets too cold to enjoy himself is not sick, but is weak-minded.

Porch bedrooms or near-porch bedrooms are so rapidly gaining adherents that they need no champions. Families who possess sufficient intelligence to acquire the Arctic bedroom habit seem to be entirely too smart to have coryza, adenoids, and croup in the house.

In view of Dr. Hill's recent investigations and our everyday experience, the principal prophylaxis against adenoids is the avoidance of overheated living-rooms. Instead of the usual temperature of 75° F. or more, the family should be taught to acclimate themselves to an average of 60° to 65° throughout the winter. If the effort is made at the beginning of cold weather in the fall, and the household temperature is regulated by the thermometer and not by personal feelings, such a moderate temperature will be comfortable to everybody, from baby to grandma herself. And with the removal of the enervating, debilitating influence of highly heated air the nasopharyngeal mucosa will have a fighting chance against its daily assailants. This means that there would be no adenoids.

## A DROP METHOD OF GIVING ETHER WITH A CLOSED INHALER.

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Ether, for the present at least, must be the routine anesthetic. The disadvantages of ether have been greatly lessened by the use of ingenious mechanisms, by which the ether vapor is administered and maintained throughout at a very uniform strength. In the few institutions thus equipped, and with a skilled anesthetist perfectly familiar with the mechanism, not only is danger diminished, but ether anesthesia loses much of its, not undeserved, unpleasantness and dread. However, among the large number of anesthesias daily given throughout the country, in how many instances would we find such a comparatively simple apparatus available as a Bennett inhaler? Furthermore, of the great number of anesthesias daily given throughout the land, the majority must be administered by men who owe their living to a time-consuming general practice and who cannot, more than in a general way, become specialists. Simple, indeed, must the device or method be to find its way into more than the most restricted use, and, therefore, become more than a trifling factor in diminishing the danger, ever present in anesthesia, and the disagreeable features of ether anesthesia.

The vehicle, or diluent, of the ether vapor is atmospheric air. Therefore, to secure and to maintain a perfect mixture of air and ether vapor, in the desired proportions, is what we wish to attain. If gasoline were administered to an automobile, for instance, as ether not infrequently is administered to patients, the engine would refuse to work. Not so with our patients, for nature has endowed them with powers of compensation and tolerance sufficient to endure the insult which the man-made machine will not. However, hypersecretion of the muciparous glands, laryngeal spasm, cyanosis, and fluctuations of pulse, blood pressure, and respiration, are among nature's many protests against uneven ether mixtures.

A drop method is apparently necessary to maintain uniform strength of the vapor. The open drop method deserves its popularity because it has been a step forward. It has removed the two great objections to ether, when it was given in a closed cone, namely, anoxemia, and intermittent periods of over concentration of ether vapor, with their numerous very undesirable consequences. Beyond the removal of these two serious objections, what has the open drop method to recommend it?

Gatch says, "When we give ether by the open method we take a very efficient means of producing acapnia." He calls attention to the primary stimulating effect of ether upon the respiratory center, and the consequent over-ventilation of the lungs. The result of this must be a reduction of the carbon dioxide, below the normal proportion, in the complemental and residual air.

When we give ether by the open drop method the current of air expelled during expiration is expelled directly against the surface of the mask, and the expired air is disseminated as lateral air currents and lost. During inspiration some of the inspired air is aspirated through the gauze carrying the ether, but most of it is taken in by the paths of least resistance, the open space around the edges of

the mask. Ether vapor is very light, and in order to give enough of the vapor to induce anesthesia the mask is frequently held very close to the patient's face. This diminishes the amount of air dilution from the open space around the mask, but when the mask, wet with ether, is held close to the face the small air space intervening affords a very inadequate mixing chamber. The rapid evaporation of the ether greatly chills the inspired air, and furthermore, the cold, concentrated vapor has no opportunity to become evenly mixed with the inspired air. Warming the anesthetic (by placing the can or bottle in warm water) by increasing volatility, enhances the change from a liquid to a gaseous state. With ether, however, this transition occurs so quickly and utilizes so much of the latent heat of the surrounding air that after warming the liquid anesthetic as much as practical, the vapor will still be cold and therefore concentrated.

Frequently a towel is placed around the edges of the mask, shutting off the lateral air currents, and practically converting the mask into a cone. The objection to this procedure is that the mask is nearly always held close to the patient's face, and the ether vapor traverses too small an air space, before being taken into the lungs, to allow it to become warmed and well mixed with air.

Suppose, instead of a towel, that the lateral air currents are shut off by a cone, like the old closed cone made of a newspaper and a towel, and about the size of a quart tomato can, with ends removed and sides flattened enough to give the desired oval shape. Suppose the top of the cone is closed by laying several layers of gauze over it, and that onto this gauze the ether is dropped. The gauze then becomes the mask. What results? The ether is still administered by dropping it onto a mask. The current of tidal air expelled during expiration leaves the cone filled with warm expired air. During inspiration the ether on the gauze is aspired through an air chamber already filled with warm air, in which the vapor readily diffuses. By the time the ether vapor traverses five or six inches of warm air space, and reaches the mouth and nostrils of the patient, it has been pretty thoroughly mixed with air and is warm.

The Allis inhaler is somewhat similar to the cone I have described, but the air chamber is not sufficiently deep to accomplish my purpose, and is only partially closed above by folds of gauze arranged like a window shutter when the slats are open. It, therefore, fails to retard the diffusion and loss of the expired air as does the cone I have described. I purposely close the top of the cone with a flat roof of gauze. This is sufficiently porous to allow the act of inspiration to aspirate the ether vapor readily into the cone. It also offers just enough obstruction to the current of expired air to keep the cone full of warm expired air for the ether vapor to diffuse into during the following inspiration. The number of respirations are considerably increased during ether anesthesia. The lungs are, therefore, more or less over-ventilated, and the amount of carbon dioxide, in the complemental and residual air, is below the normal.

The gauze roof of the chamber offers sufficient obstruction to the expired air so that at the beginning of inspiration the air chamber is full of expired air. Rebreathing, in a considerable degree, is thus accomplished without causing anoxemia, because a few layers of gauze offer very little obstruction to the patient's breathing. Rebreathing aids in conserving the normal amount of carbon dioxide in the lungs and, therefore, in diminishing the danger of acapnia and shock.

If the anesthetist wishes to concentrate the ether vapor, additional layers of gauze, permitting the use of more ether, may be used, or, the cone may easily be closed, partially or completely, by a towel over the gauze top.

## Medicolegal Notes.

**Expert Evidence of Physicians Examining Plaintiff to Testify as to Injuries.**—In an action for injuries received by a passenger traveling in the caboose of a train when a collision occurred, it appeared that the plaintiff was thrown eight or ten feet from his seat against a wooden partition, striking it with his head. He was rendered unconscious for a time; received cuts and bruises; several of his teeth were broken or knocked loose; and he was injured in the back of his neck and in the region of his stomach. There was evidence tending to show that for almost eighteen months, and up to the date of the trial, he was incapacitated from following his employment as a traveling salesman; and that, besides his health being affected in various ways, he had many of the symptoms that precede paralysis. The chief point in the case was whether the evidence received as to the possible permanence of his injuries and consequent damages was competent. It consisted almost entirely of the testimony of physicians who had examined him, not in the regular course of treatment, but for the purpose of qualifying themselves as witnesses upon the trial. One of these witnesses, who had in this way examined the plaintiff on three different occasions, was permitted to state, over objection, that the muscles of the plaintiff's neck were rigid and stiff, and of limited motion; to state to what extent the motion of the head was affected by the muscular condition which he found; that the motion of the plaintiff's left arm was limited and painful, and the motion of the right arm much better; that he tested the motion of the arm by taking the patient by one hand and shoulder and rotating the arm; that the superficial reflexes were tested by pricking the skin with a pin and that they were sluggish and nonresponsive. He was also permitted, over objection, to elaborate that symptom, and upon it, in conjunction with others, to express his opinion that the conditions indicated by such symptoms were the natural result of some kind of a concussion. He was also permitted to state, over objection, that at an examination of the plaintiff on the day previous, "the perspiration just oozed out of him and streamed down the side of his face and all over him"; that a man could not simulate sweating; that the plaintiff was stripped at the time and that "he was doing as we told him and standing up and attempting to bend his body, or whatever else we told him"; and that in the opinion of the witness the cause of the sweating was "exhaustion." He was further permitted to give his opinion, based upon the symptoms narrated by him, that there was an injury to the plaintiff's spinal column and to the medulla oblongata and the muscles of the back, and that in his opinion the injuries indicated by the symptoms mentioned by him were growing worse, and that in the future the plaintiff would be paralyzed on the left side and his life shortened.

It was held to be improper to permit these witnesses to express their opinions to the jury based upon subjective conditions, and then to fortify such opinions by stating to the jury acts of the injured party which could apparently have been voluntary and under the injured party's control, and which might have rested upon another basis than the truthfulness of the injured party. In Illinois the law is that a physician who has not treated the injured person, but has made an examination to enable him to testify on a trial as to his condition, must base his opinion on objective and not subjective conditions. He cannot relate nor take into consideration the self-serving statements of the injured person made to him, not with reference to his treatment, but with reference to his trial. The law admits in evidence the declarations of an injured party as to his physical condition given to physicians during treatment, because it is presumed that the injured party will not falsify in his statements made to the physician when he expects and hopes to receive medical aid; but no such presumption arises when he is examined by an expert for the purpose of giving evidence in a case about to be tried.—Edward v. Illinois Central R. R. Co., 161 Ill. App. 630.

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## DIPHTHERIA AND ITS PRESENT-DAY PROBLEMS.

THERE are many problems relating to diphtheria that still remain unsolved. The remarkable reduction in mortality that followed the general use of the specific serum aroused the hope that the absolute control of diphtheria was close at hand. Nevertheless the conviction soon dawned that the antitoxin was not a specific in the strictest sense. It is efficacious only during the first three days of the disease. There are severe cases in which the overwhelming infection cannot be subdued even by massive doses of the serum. The immunity, whether active or passive, is only of short duration. The incidence of cardiac complications and of postdiphtheritic paralyses apparently has not been affected by the antitoxic treatment. Moreover, this has little or no influence over the persistence of the diphtheria bacilli in the throats of convalescents and of healthy individuals, so that the problem of the carrier is still an important one. However, one must recognize the fact that the prompt and liberal administration of the antitoxic serum has robbed diphtheria of most of its terrors, has diminished its prevalence, and has saved many lives. The army of research is now no longer engaged in resisting the main body of the enemy, but is able to turn its attention to the flanking columns.

Until recently the chief point of attack in the investigaion of the pathogenic properties of the Klebs-Loeffler bacillus was its soluble toxins. Little or no heed was paid to its insoluble poisons or endotoxins, for it was thought that these take no part in the production of the morbid phenomena of diphtheria. Moreover, they play no rôle in the mechanism of immunity and cure dependent upon the elaboration and use of the curative serum of Behring and Roux. The pendulum, however, is now swinging in the direction of a discovery of the actual pathogenic properties of the endotoxins of the diphtheria bacillus, and of a possible therapy based partly upon these endotoxins.

One of the pioneers in the investigation of the latter was E. Rist of France, who in 1903 showed that the endotoxins of the diphtheria bacillus have pathogenic properties, for he was able to produce, by means of intraperitoneal inoculations of these endotoxins into guinea-pigs, paralyses similar to the clinical forms. The next important contribution to this subject was that made by Hewlett and Nankivell (*Lancet*, July 20, 1912), who utilized the injections of diphtheria endotoxins in the treatment of diphtheria carriers or of chronic cases of diphtheria (see MEDICAL RECORD, August 10, 1912). The latest and apparently an epoch-making announcement along this line is the recent report from Behring that he has found a combination of diphtheria antitoxin and toxin to be the ideal means of creating active immunity, and the ideal remedy in combating this disease.

During the past few years there has been a pronounced recrudescence of diphtheria in Germany, a circumstance which is apparently inexplicable in view of the improved sanitary conditions and the widespread use of antitoxin. This epidemic has, however, furnished the opportunity for important clinical and pathological studies. One of the latest of these was that made by William H. Leede of the Hamburg-Eppendorf General Hospital, and reported in the *Zeitschrift für klinische Medizin*, Vol. 77, Nos. 3 and 4. This study was concerned chiefly with the pathological and post-morten bacteriological findings in relation to the clinical picture. The material that formed the basis of this investigation was a large one, comprising 3,671 cases that were under treatment in the hospital during 1910 and 1911. It was noted that the period of greatest incidence of this disease is between the fifth and fifteenth years of life. Females, particularly, after the fifteenth year, provide the larger number of cases, the latter circumstance apparently being explained by the opportunities of contact infection to which nurses and other female attendants are exposed. Cardiac disturbances were apparent in more than ten per cent. of the cases and were detected during the first few days of the disease. Indeed, heart failure in diphtheria does not come on suddenly as is commonly taught but gives early warning in unmistakable constitutional and cardiovascular symptoms. Since involvement of the heart is to be expected in the severe cases, heart stimulants should be administered to the latter from the very beginning. Leede obtained the best results with a combination of strychnine and suprarenal extract.

In spite of the severity of the Hamburg epidemic, the mortality of the author's 3671 cases was 12.47 per cent., a good showing in comparison with the appalling mortality of twenty and thirty years ago. The causes of death are classified as follows: (1) The entrance of an overwhelming amount of toxin into the bloodstream, with the resulting disastrous effects on the vasomotor centers, heart, and suprarenal capsules; (2) changes in the heart muscle chiefly of a parenchymatous nature, interstitial changes playing only a subordinate rôle; (3) affections of the bundle of His; and (4) bronchopneumonia, which is a more important factor than is generally recognized. Diphtheritic involvement of the lower air passages occurs very frequently at the present day though not to as great an extent as formerly. The hemorrhagic forms of the disease are apparently the result of a toxic damage of the endothelium.

The author made a systematic examination of the blood in all cases that came to autopsy, and

in 63 per cent. of these demonstrated a bacteriemia, the microorganism most frequently present being the streptococcus. In a few instances diphtheria bacilli were isolated. The positive results were found mostly in cases that presented evidences of bronchopneumonia. The author does not attribute any great importance to this bacteriemia and believes that at any rate it is rarely responsible for the lethal outcome.

It is curious to note that the Germans still employ tracheotomy in preference to intubation. Of the 3,671 cases, 271 or 7.38 per cent. were subjected to the former operation, with a mortality of 53 per cent. This high death rate either speaks against the value of tracheotomy, or else indicates the desperate nature of the cases that were subjected to this operation. The mortality from the latter was greatest during the first year (88 per cent.) and after the fifteenth year (62 to 66 per cent.). These figures were all the more significant in view of the fact that many of the cases received early in the disease large doses of antitoxin. There are certain personal factors in the evolution of laryngeal stenosis that baffle all therapeutic efforts.

One important lesson learned in the Hamburg epidemic was that the effective treatment of severe cases of diphtheria requires the early administration of large doses of antitoxin, preferably by the intravenous route.

## MORAL DEVELOPMENT IN MEDICAL EDUCATION.

We hear much of the necessity of increasing the moral tone of the medical profession, and recently we referred to a bill introduced into our legislature which proposes giving to the Board of Regents the power to revoke medical licenses for any conduct not consonant with good morals. Almost every State board requires a certificate of moral character and no one, we are quite sure, would deny the wisdom of this. The privacy of medical practice makes it impossible to observe how the obligations are fulfilled, and it is on account of this privacy that a greater degree of confidence and trust is called for than in any other profession. In law, for instance, one's true character is known sooner or later because there is not the protection of privacy or the opportunity of being excused by a possible change of conditions in the case as in medicine. Considering, then, how important it is that every member of the medical profession should be of the very highest moral character, it is strange that so little thought has been given to the subject of how moral development might be quickened during the course of medical education.

The physician's is a high calling. It should attract only those who are innately moral. But should nothing then be done to further the growth of this moral disposition? How shall the moral nature be promoted in the medical school? It goes without saying that the conduct of the teachers should be exemplary and that the prevailing spirit of the school should be for righteous conduct and a keen perception of duty; but it is in the method of teaching that we should be able to find concrete instances of the perfection of the moral sense if we are to avoid mere cant. In the average medical school, scabies, for instance, is taught by showing a case in the clinic and probably by demonstrating at some other time and some other place a cabinet specimen of the itch mite. In fact, the student is told only that the lesions observed are caused by the itch mite. Simply having been told he may have but a hazy recollection of the appearance of these lesions when, in later life, a case may present itself to him. Then, if he be given to moral obliquity, how easy it would be for him to yield to temptation and give himself the benefit of the doubt because he really does not know—telling the patient that it is eczema and treatment will have to be taken for a long period—so that he may gain more fees. But if, on the other hand, he had been practically trained and had been required to prove, to his own satisfaction, through finding in one of the lesions that the itch is caused by the mite, he would then know absolutely a case when it presented itself, and it would only be by the veriest kind of a moral upheaval that he would go contrary to his absolute knowledge of the case and his natural desire to tell the patient that it was caused by the mite and what he must do to get rid of it. This phase of teaching, the absolute presentation and demonstration of the *truth* to the student has a positive effect on his whole nature. It creates interest and enthusiasm; it develops manual skill, and the knowledge acquired besides giving a lasting personal satisfaction remains so indelible as to determine the course of action throughout the whole of life without permitting any equivocation.

The next phase of teaching which affords a concrete instance, as developing the moral sense, is practical work in the out-patient department. Here the student not only sees, but feels his responsibility and learns better than in any other place how much depends upon his doing his duty. If a case of lead poisoning is shown to him at the dispensary and he is taught to work up the case fully—visiting the home or factory if need be—he soon solves the problem of etiology. The satisfaction of having done so will last through all his years and the experience will show him how much depended upon his own initiative in finding out the cause and gaining relief for the patient by having it corrected. Nothing could stop him, when, in later life, a suspicious case presented itself, from leaving no stone unturned until he finds the cause. He again must have not only the pleasure of solving the problem, but he *feels* his duty to find the absolute cause, as no amount of *telling* could have made him. He must find the cause and then see to it that it is corrected! Other and numerous instances of the enlivening of the moral sense by this method will readily suggest themselves.

Another phase of teaching, which is especially conducive to developing deep feelings of responsibility on the part of the student in relation to his profession, is by showing mistaken diagnosis on the autopsy table. Each case in such teaching points a moral, but above this is the magnanimous attitude and honesty of his teacher, the memory of which will always serve as a guide to right conduct and will give strength in hours of temptation.

The moral development of medical students, like that of children, is brought about less by precept than by all of the subtle influences which make up their daily life. It is the foregoing phases of teaching in a medical school that enrich that life.

## THE CURABILITY OF INSANITY.

At one time American alienists were enthusiastic concerning the curability of insanity, and their figures seemed to show that their enthusiasm had a sound basis on which to rest. Statistics used to be cited to the effect that 80, 90, and even a larger percentage had been discharged cured. Cold reason has now taken the place of enthusiasm and statistics of the present time give evidence that the percentage of cures in American hospitals is nearer 20 than 90. In a paper contributed to the *American Journal of Insanity* for April, 1913, Dr. A. J. Noble of Kalamazoo, Mich., points out that statistics given out by different institutions for the treatment of the insane are not wholly to be depended upon, and he goes on to give the figures of the Kalamazoo State Hospital during the two years between July 1, 1910, to June 30, 1912, assuming that Kalamazoo State Hospital in point of efficiency occupies an average place with respect to the other institutions of the state and county. There were committed to the hospital during the period referred to 960 patients. Of these 381, or about 40 per cent. were suffering from what might be termed curable forms of disease, and 579 from incurable forms. The recovered tabulated in the two years were 93, or 9.5 per cent. of the admissions, those discharged as improved 10.19 per cent., unimproved 7.22 per cent., while 20.79 per cent. died, and 48.87 per cent. remained in the hospital. In the six months following the period the remnant was reduced to 35.44 per cent. and the cured had been increased by 2.40 per cent., making the total cures in two and a half years 11.9 per cent. of the original admissions. Moreover, there was a probability that 2.58 per cent. more of these patients would eventually recover. Disregarding the small and uncertain percentage of patients who may have recovered at home, this would make possible, so far as these particular patients are concerned, a complete recovery rate of 46.48 per cent., and applying Thurman's rule, a permanent recovery rate of approximately 16 per cent. Thurman deduced the following general rule: "In round numbers, of ten persons attacked by insanity, five recover and five die sooner or later during the attack. Of the five who recover, not more than two remain well during the rest of their lives, the other three sustain subsequent attacks, during which at least two of them die."

Noble believes that the rate will not be materially bettered. He further is of the opinion that alcohol, directly or indirectly, is a potent factor in the production of insanity and the various neurotic conditions which are so apt to develop into psychoses. Finally Noble propounds the radical opinion, that alcoholics should be colonized, that the epileptics and feeble-minded should be segregated, colonized, and sterilized, and that this should be done at once.

## The Cocaine Law in Canada.

A few years ago in Montreal and in some other parts of Canada, the abuse of cocaine had reached such heights and the evil wrought had become so obvious that the aid of law was called in to check the fast-growing menace. An act was put into force in Canada in 1908, whereby the presence of cocaine in proprietary or patent medicine was absolutely forbidden. However, it appears that politics are strong in the Dominion as well as elsewhere, for this wise act has been set aside in favor of a proprietary medicine. A popular so-called specific for asthma had been retailed far and wide in Canada, but when the act came into force the sale of the remedy, one of the main ingredients of which was cocaine, was stopped. At once a cry went up from the many users of the drug and protests and pleas rained in on members of parliament. So strong does the pressure seem to have been, that instructions have been issued to collectors of customs throughout Canada to permit importations of the proprietary medicine in question. The *Canadian Medical Association Journal* comments on this action as follows: "With the legal aspects of the case we are not concerned at the moment, although it is worth remarking that there is no provision in the act which warrants any minister, or the Government itself, in breaking it. We have the utmost sympathy for sufferers from asthma, and even more if possible, for sufferers from the cocaine habit. At a time when the use of cocaine is so widespread, and when the courts are making such desperate efforts to check it, it is an ill-timed procedure, this flooding of the country with the drug through a legalized channel. Sufferers from asthma have still the services of the profession at their command, and can procure cocaine for a legitimate purpose in a legitimate way."

## Influence of the Upright Posture Upon Mankind.

Despite the great antiquity of man it does not appear that he has yet succeeded in adapting himself thoroughly to the change from the quadrupedal state. Or perhaps it is better to assume that he had at one period succeeded in such adaptation, but that under the influence of civilization the structures most active therein began to lose the power of compensation, so that all the original drawbacks of the bipedal state have once more reasserted themselves. At a recent session of the medical section of the silesian Society for National Culture held at Breslau (*Berliner klinische Wochenschrift,* April 14), Klaatsch read a paper on this subject. Numerous affections of mankind which have no analogues among quadrupeds are distinctly favored if not essentially determined by the upright posture which allows a pull of gravity not experienced in a virtually prone position. Here belong especially hernias, hemorrhoids, varicose veins, enteroptosis, intestinal stasis, and conditions peculiar to women, gravid and nongravid. The backache of delicate women is no doubt due to the insufficiency of the trunk muscles for the maintenance of the upright attitude. The conditions which result in mankind are in striking contrast, Klaatsch assumes, to those seen in the bipedal kangaroo, which has apparently succeeded completely in adapting itself to the upright posture.

### "Rheumatoses" of Nasal Origin.

The expression "rheumatoses" is sometimes heard in connection with minor affections which have a distinct rheumatic component, such as erythema nodosum, peliosis rheumatica, and chorea minor. The term serves to distinguish these from the frankly rheumatic affections of the synovial membranes, tendon sheaths, endocardium, etc. At a recent meeting of the Freiburg Medical Society (*Münchener medizinische Wochenschrift*, April 8), Senator, who has identified himself with the occasional endonasal origin of rheumatism *per se*, made the claim that the "rheumatoses" may exhibit a similar origin. A case of a child was cited in which the removal of adenoids was followed by chorea minor. It is known that this operation is not infrequently followed by infection. The author has seen one case analogous to the preceding. The recorded cases of rheumatic or at least rheumatoid infection, and of rheumatoses, which have been noted after tonsillitis, sinusitis, and other spontaneous conditions, as well as after endonasal and endopharyngeal operations, while few in number, possess an unequivocal character which should form a datum for future studies.

## News of the Week.

**Health Reform Bills.**—On May 17 Governor Sulzer of New York signed the bill known as the Seeley-McDaniels bill, which was passed recently by the New York State Legislature, and is designed to carry into effect the recommendations of the special Public Health Commission appointed by the Governor last January. The chief provisions of the bill are as follows: A public health council is created to consist of the State Health Commissioner and six members appointed by the Governor, which shall have power to enact and amend the sanitary code. Three new divisions, each in charge of a director (Child Hygiene, Public Health Nursing, and Tuberculosis) are added to the Department of Health, and the six divisions (Administration, Sanitary Engineering, Laboratories and Research, Communicable Diseases, Vital Statistics, and Publicity and Education) already established, are written into the statute. The State is to be divided into twenty or more sanitary districts, each under a sanitary supervisor who shall be a physician and whose duties are detailed. The Health Commissioner is given a six years' term of office with an annual salary of $8,000, and the health officers throughout the State are ensured a respectable compensation, and their duties are plainly defined. The regulations regarding the registration of cases of tuberculosis are to be more strictly enforced, and health authorities are given control over "persistently dangerous and careless persons, afflicted with an infectious, contagious, or communicable disease, the law providing for the commitment of such a patient to a hospital by a magistrate upon proof that he is a menace to the community.

The Governor also signed the Seeley bill giving the State Health Department increased powers over cold storage plants, and the Foley bill providing for an inspection by the Health Commissioner of the kitchens of all hotels, restaurants and other public places.

**Changes at Ellis Island.**—Surgeon L. L. Williams of the United States Public Health Service assumed the duties of chief medical officer at Ellis Island on May 15, relieving Dr. George W. Stoner, who has been assigned the command of the U. S. Marine Hospital at Stapleton, S. I. Dr. Stoner has completed twelve years' service at Ellis Island. Dr. Williams has had previous experience on the Island, having been in charge there in 1900-01, and has had much to do with immigration and public health work in this country and abroad.

**Quarantine Station.**—Dr. John R. Hicks has been appointed chief medical officer of the Detention Hospital on Hoffman Island, and Dr. Albert A. Mendez has been selected as chief medical officer of the Contagious Diseases Station on Swinburne Island. Dr. F. C. Clark and Dr. C. S. Hudson, after three years' service on the quarantine islands, have been promoted to the positions of Deputy Health Officers, and are now assigned to boarding duty at Rosebank.

**City Death Rate.**—During the week ending May 10, there were in New York City 1,543 deaths, giving a death rate of 14.98 per thousand of population, as compared with a rate of 14.73 per thousand, and a total of 1,461 deaths for the corresponding week of last year. The mortality of children under five years of age was decreased as compared with last year, but in all the other age groups an increase occurred.

Statistics recently compiled by the New York City Department of Health show that the incidence of typhoid fever was much less during 1912 than during any year since records have been kept. The total number of cases in the city during the year was 3,076, and there were 499 deaths, giving a case incidence of 59 and a death rate of 10 per 1,000 of population. In 1911 the case incidence was 10 points greater.

**No License for Friedmann.**—The Commissioners of the District of Columbia have decided that the efficiency of the Friedmann treatment of tuberculosis has not been sufficiently established to warrant the granting without examination to Dr. Friedmann of a license to practise medicine in the District. In a report of Congress they state that they are opposed to the bill introduced by Senator Hughes of New Jersey, directing that such a license be granted.

Four of the patients in whom the Friedmann culture was injected have died. If many more fatalities occur the question may be raised whether the hospital authorities are justified in exposing their patients to the danger of these experiments.

**Health of the Canal Zone.**—The report of the Department of Sanitation of the Isthmian Canal Commission for the month of March gives the total number of deaths from all causes among employees as 32, of which 19 were due to disease and 13 to violence. The annual average death rate per thousand is given as 6.82, as compared with 10.76 in March, 1911, and 8.45 in March, 1912. The annual average death rate per thousand in the cities of Panama and the Canal Zone, including both employees and civil population, however, was considerably higher as compared with last year, being 19.32 in March, 1913, and 14.67 in March, 1912. Among employees the principal causes of death were lobar pneumonia, 3; tuberculosis, 7, and duodenal ulcer, 2. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

**An Investigation of Fractures.**—Dr. John B. Roberts, 315 South 17th Street, Philadelphia, chairman of the Committee on Fractures of the American Surgical Association, writes that the committee

desires to have two reprints of any paper dealing with the nonoperative or operative treatment of open or compound fractures which has been published within the last five years. The committee also desires papers on the medicolegal relations of radiography to the diagnosis and treatment of fractures. If authors on these subjects have no reprints the committee would be pleased to receive memoranda of the places of publication of such papers.

**Osler's Practice of Medicine.**—In a review of this work recently published in the MEDICAL RECORD it was stated that the book was in its twelfth edition; this was an error, the latest edition and the one noticed in the review being the eighth.

**Bequests by Dr. Duhring.**—By the will of the late Dr. Louis A. Duhring, formerly professor of diseases of the skin in the University of Pennsylvania, his manuscripts on cutaneous diseases, as well as his notes of medical cases have been devised to the university, with directions that they be edited by an expert and published. His medical library also is bequeathed to the university, with the proviso that duplicate volumes are to be given to the College of Physicians of Philadelphia, and the sum of $3,000 is devised to the University library without stipulation. The sum of $3,000 is bequeathed to the trustees of the university as a permanent fund for the care of his medical works, portraits, drawings, photographs, and models. To the Department of Diseases of the Skin of the university are bequeathed all drawings, paintings, lithographs, plates and photographs relating to medicine. The College of Physicians of Philadelphia is to receive $5,000 in trust for the purchase of works on the subjects of cutaneous medicine and surgery. A trust fund of $25,000 is created, and the income from this is to be used for the benefit of the Department of Cutaneous Medicine at the university, and in which there is to be established a museum for the study and observation of skin diseases. If any of the income from this source becomes available for other purposes it is to be used for lectures, prizes, scholarships and methods of promoting a knowledge of the nature, pathology, and treatment of cutaneous disorders. To the managers of the Hospital of the University of Pennsylvania the sum of $50,000 is bequeathed for the establishment and maintenance of wards containing free beds for the treatment of "cutaneous, cancerous, and allied affections." The sum of $5,000 is devised to the Mutual Aid Association of the Philadelphia County Medical Society. The residue of the estate is bequeathed to the trustees of the University of Pennsylvania and to be devoted in equal parts as follows: One-third for the general library, one-third for the maintenance of free beds for the treatment of diseases of the skin, and one-third to the Department of Cutaneous Medicine for the advancement of the study of diseases of the skin.

**Charitable Bequests.**—By the will of the late Mr. Hugh D. Auchincloss of New York the Presbyterian Hospital receives a bequest of $7,500 for the endowment of a bed in memory of the testator's mother.

The Montefiore Home, Mount Sinai Hospital, the German Hospital, the Skin and Cancer Hospital, and the Society for the Ruptured and Crippled, all of New York, will receive $1,000 each from the estate of the late Mr. Charles Schoolhouse.

The Montefiore Home and Mount Sinai Hospital receive bequests of $1,000 each under the will of Moritz H. Rosenstein, and of $2,500 each under the will of the late Emanuel Heilner.

Bequests of $100 each are made to Beth Israel Hospital and Mount Sinai Hospital in the will of the late Mr. Morris Rothman of this city.

**To Endow Medical Research.**—The University of California has received a gift of $1,000,000 for the establishment of an institution for research in connection with the Medical Department of the university. The gift is made by Mrs. George William Hooper of San Francisco in memory of her husband.

The University of Cincinnati has received from Mrs. M. M. Emory of that city a gift of $125,000, to be used for the endowment of a chair of pathology in the Department of Medicine.

**A Correction.**—Dr. Mary Sutton Macy writes that, in the report of the Pediatric Section of the State Medical Society on p. 918 in the issue of May 17, the statistics of 10,000 cases of physical defects in children, quoted by her, should have been credited to Dr. Smart by whom they were originally presented at the Congress on Hygiene and Demography.

**Milwaukee Law Upheld.**—The Supreme Court of the United States has declared valid the Milwaukee city ordinance prescribing standards of pure milk. The dairymen of the State had been refused an injunction against the enforcement of the ordinance in the lower courts and had carried the fight into the Supreme Court. The ordinance prohibits dairymen from supplying milk to Milwaukee unless their cows are subjected annually to the tuberculin test and passed by a veterinarian, requires that every bottle be tagged with the name and address of the dairy, and gives to the Health Commissioner the authority to seize and destroy milk sold in violation of the ordinance.

**International Dental Congress.**—By invitation of the British Dental Association the Sixth International Dental Congress will be held in London from August 3 to 8, 1914, under the patronage of King George. The offices of the congress are at 19 Hanover Square, London, W., to which address all communications and requests for information should be sent.

**Massachusetts State Medical Society.**—The 132d anniversary of the Massachusetts State Medical Society will be celebrated by a meeting of the society in Boston on June 10 and 11, for which an elaborate program has been prepared. On the evening of the first day Dr. Harvey Cushing will deliver the annual Shattuck lecture on "Diabetes," and on the following evening the annual dinner will be given at the Copley-Plaza.

**Iowa State Medical Association.**—At the closing session of the 62d annual meeting of the Iowa State Medical Society on May 9 the following officers were elected: *President*, Dr. L. W. Dean, Iowa City; *Vice-Presidents*, Dr. F. S. Smith, Nevada, and Dr. F. A. Stettman, Ottumwa; *Treasurer*, Dr. W. B. Smith, Waterloo. The next meeting will be held at Sioux City.

**West Tennessee Medical and Surgical Association.**—At the annual meeting held in Jackson on May 9 the following officers were elected for the ensuing year: *President*, Dr. J. R. Carroll, Henderson; *Vice-Presidents*, Dr. I. C. Rawls, Dyersburg, and Dr. O. S. McCown, Memphis; *Secretary and Treasurer*, Dr. I. A. McSwain, Paris.

**North Dakota Medical Association.**—The following officers were elected at the 26th annual meet-

ing of the North Dakota State Medical Society on May 7: *President*, Dr. Murdock McGregor, Fargo; *Vice-Presidents*, Dr. R. H. Beek, Lakota; Dr. Victor H. Stickney, Dickinson, and Dr. A. Carr, Minot; *Secretary*, Dr. H. J. Rowe, Casselton; *Treasurer*, Dr. C. S. Crane, Grand Forks.

**McPherson County (Kan.) Medical Society.**—At a meeting of the physicians of McPherson County held on May 2 a county medical society was organized with the following officers: *President*, Dr. L. A. Bradbury, McPherson; *Vice-President*, Dr. Harry Edgerton, Canton; *Secretary-Treasurer*, Dr. G. R. Dean, McPherson.

**Atchison County (Kan.) Medical Society.**—After being dormant for several years this society was revived at a meeting held at Atchison on May 5, the following officers being elected: *President*, Dr. M. T. Dingess; *Vice-President*, Dr. G. E. White; *Secretary-Treasurer*, Dr. E. T. Shelly.

**The Late Dr. Morrow.**—At a meeting of the Medical Board of the City Hospital, held May 1, 1913, it was directed that a copy of the following resolution be sent to the family of the late Dr. Morrow, to the MEDICAL RECORD, also to the *Medical Journal*, and the resolution spread on the minutes of the meeting: "The Medical Board of the City Hospital records with sorrow the death of Dr. Prince A. Morrow. Dr. Morrow was appointed dermatologist to the City, then Charity, Hospital in 1884, and was connected with the Dermatological Department up to the time of his passing away, the last few years as consulting dermatologist. The Medical Board wishes to record and express its appreciation of Dr. Morrow as a fellow member, and its sense of loss in his death. The Medical Board wishes to extend to the immediate members of Dr. Morrow's family its sympathy and sorrow." Signed WILLIAM B. PRITCHARD, President; DANIEL H. WIESNER, Secretary.

**Obituary Notes.**— Dr. GEORGE H. POWERS of San Francisco, emeritus professor of ophthalmology in the University of California, a graduate of the Harvard Medical School, Boston, in 1865; a surgeon in the United States Army during the Civil War; professor of ophthalmology and oto'ogy in the Toland Medical School and later in the Medical Department of the University of California after the amalgamation of the two; a member of the American Medical Association, the California State and San Francisco County Medical Societies, and the Section on Eye, Ear, Nose, and Throat, San Francisco, died at the home of his daughter in Detroit, Mich., from disease of the heart, on May 4, aged 72 years.

Dr. LEONARD BAILEY of Middletown, Conn., a graduate of the Eclectic Medical College of Pennsylvania, Philadelphia, in 1857, and president of the Connecticut State Eclectic Medical Association, died at his home on April 28, aged 77 years.

Dr. ADDISON MCARTHUR BOURLAND of Van Buren, Ark., a graduate of the Medical Department of the University of Tennessee in 1857, died at his home on April 23, aged 87 years.

Dr. ROBERT WATTS EASTMAN of New York, a graduate of the College of Physicians and Surgeons, Homeopathic, Buffalo, in 1879, and a member of the Greater New York Medical Society, died at his home on May 5, aged 60 years.

Dr. ARTHUR AMES BLISS of Philadelphia, a graduate of the University of Pennsylvania, Department of Medicine, in 1883, for twenty years laryngologist at the German Hospital and the Mary J. Drexel Home, and a member of the Pennsylvania State and Philadelphia County Medical Societies, the American Laryngological Association, and the Section on Otology and Laryngology of the College of Physicians of Philadelphia, died suddenly at his home on May 2, aged 54 years.

Dr. BENJAMIN BARR of Burlington, N. J., a graduate of the Homeopathic Medical College of Pennsylvania, Philadelphia, in 1855, a veteran of the Civil War, and for many years a practitioner of Philadelphia, died at his home on May 5, aged 85 years.

Dr. FREDERICK L. PRESTON of Chester, Pa., a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1877, died at his home from paralysis on April 21, aged 70 years.

Dr. WILLIAM GOMEZ WARD of Mobile, Ala., a graduate of the University of Alabama, Medical Department, Mobile, in 1895, and a member of the Alabama State and Mobile County Medical Societies, died at his home on April 26.

Dr. GEORGE THOMAS CARSON of Chatsworth, Ill., a graduate of the Rush Medical College, Chicago, in 1896, and a member of the American Medical Association and the Illinois State and Livingston County Medical Societies, died at his home from pneumonia on April 25, aged 43 years.

Dr. RUFFIN C. CLAIBORNE of New Roads, La., a graduate of the Medical Department of the Tulane University of Louisiana in 1905, died at his home after a short illness on April 27, aged 33 years.

Dr. JACOB L. NOBLE of Preston, Md., a graduate of the University of Maryland School of Medicine, Baltimore, in 1876, and a member of the Maryland State and Caroline County Medical Societies, died at his home on April 29, aged 64 years.

Dr. GEORGE HANCOCK INGALLS of Boston, Mass., a graduate of the University of Vermont College of Medicine, Burlington, in 1885, and a member of the Massachusetts State and Suffolk County Medical Societies, died at his country ho ne in East Kingston, N. H., after a long illness, on May 4, aged 53 years.

Dr. PATRICK J. TIMMINS of Boston, Mass, a graduate of the Georgetown University School of Medicine, Washington, in 1878, died at his home on May 4, aged 62 years.

Dr. JAMES E. PAYNE of Normangee, Texas, a graduate of the Barnes Medical College, St. Louis, in 1901, died recently in a sanatorium at Houston, Texas.

Dr. GUSTAF BJORKMAN of Racine, Wis., a graduate of the University of Upsala, Sweden, in 1878, and of the University of Stockholm in 1887, died at his home after a long illness on April 27, aged 58 years.

Dr. H. M. CRAWFORD of New York, a graduate of the College of Physicians and Surgeons, New York, in 1896, died at his home on May 7.

Dr. WILLIAM HENRY MEREDITH died at Quakertown, Pa., on May 9, at the age of 70 years. He was graduated from Jefferson Medical College in the class of 1866.

Dr. ARTHUR E. SPOHN of Corpus Christi, Tex., a graduate of the Long Island College Hospital, Brooklyn, in 1867, and of the Bellevue Hospital Medical College, New York, in 1879, died at his home after a short illness, on May 5.

Dr. FRED HOYT PILCHER of Winfield, Kan., a graduate of the Ensworth Medical College, St. Joseph, Mo., in 1893, and formerly superintendent of the Kansas State School for the Feeble Minded, died recently, in Eureka Springs, Ark.

# Correspondence.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

ROYAL MEDICAL FUND—YELLOW FEVER COMMISSION—PLAGUE COMMITTEE REPORT—ANKYLOSTOMIASIS—NURSES ASK FOR REGISTRATION—BIRMINGHAM HEALTH WEEK—CONGRESS—OBITUARY.

LONDON, May 2, 1913.

THE Royal Medical Benevolent Fund held a dinner on Wednesday to celebrate the fact that the prefix "Royal" was added to its name by permission of the King, who has consented to become patron of the charity. Prince Arthur of Connaught had promised to preside on this occasion, but was prevented by the grave condition of his mother, the Duchess of Connaught. Sir John Tweedy took the chair and read to the company the draft of a speech which the Prince had sent to him to signify what he had hoped to say. It contained a sympathetic acknowledgment of the benefits the royal family had received from the noble profession of medicine and alluded to the crisis from which his mother was being restored, but which on that date the relapse had rendered inappropriate.

The Yellow Fever Commission differs somewhat from the bodies usually so termed and is rather a committee of experts for examining and reporting on investigations made for it by competent persons in West Africa. In 1909 an advisory committee was set up in consequence of Professor Simpson's investigations, to advise the Colonial Secretary on the medical and sanitary conditions of tropical Africa. Very soon afterward a sanitary department was at work in the West African colonies, for each of which an expert was appointed. The results of its work are most encouraging. The "white man's grave" is no longer a phrase applied to these parts. The death rate among European officials has of late been not much higher than in some English localities. In 1905 it was 28 per 1000 and in the next three years fell to 21 and 18, rose to 20 again in 1910, fell to 14 in 1911 and to 12 in 1912. These are the figures for the full body of officials, above 2,400 in number, scattered over Gambia, Sierra Leone, the gold coast and Northern and Southern Nigeria. Even more encouraging is the diminution of invaliding; in 1904 there were 67 per 1,000; in 1908 they fell to 46, in 1910 to 39, in 1911 to 37, in 1912 to 28. It should be stated that officials now sent out are required to undergo a course of instruction at the Imperial Institute so that they are equipped with a knowledge of the sanitary conditions they may have to meet. The commission mentioned above consists of Sir J. K. Fowler, Major Sir R. Ross, Sir W. Leishman and Professor W. J. R. Simpson, and to some extent their appointment is due to the recommendation of the advisory committee and the controversy on the views of the late Sir Rubert Boyce, who went to Africa in 1910 to inquire into the simultaneous outbreak of yellow fever in Sekondi and Freetown. You will remember that he believed he had traced the disease to a mosquito and held that the insect could be exterminated or "easily tackled," as he put it. Further he concluded that the fever was always endemic among the natives in a mild form and this had been confused with malaria. Many deaths on the coast attributed to malaria had, he felt certain, been due to mild yellow fever, the "disease of the newcomers," as the natives called it. Discussion of this view was unhappily interrupted by his death in 1911, but is again being renewed and will claim consideration from the commission, which is to examine and report on the work now being carried on in Freetown, Acera and Sekondi by a special staff including officers of the R. A. M. C., the West African medical staff, the Lagos Medical Institute and the London School of Tropical Medicine. Most of the members of this special staff are already on the coast. Besides their own individual work, they will seek the co-operation of resident government medical officers and any other medical gentlemen practicing in West Africa. The details and results of their observations and inquiries they will forward to the commission in this country.

The plague investigation committee, in their seventh report, state that in the city of Madras plague has never gained a foothold, except in one epidemic in 1905-6. Yet there is much overcrowding in some of the Indian quarters of this city of 509,346 inhabitants. The corporation has for some years offered a reward of one farthing for every rat brought in, with the result that since 1906 (February), 1,220,686 have been destroyed. Statistics are given showing that in Madras there is a seasonal fluctuation in the number of rats and rat fleas. Neither were so abundant as in other infested places in India, but there were probably plenty to maintain plague if introduced, though possibly few enough to render implantation difficult. From statistics of the disease in man and in rats in Bombay, 1907-11, the collection of rats had been carried out on a large scale by the Health Department of Bombay and careful examination made. It appeared that the rat epidemic always precedes the human. The mice of Madras harbor fled from fleas. The report contains articles on chronic or resolving plague, on serum treatment, on experimental production of plague in rats, on the immunity of the wild rat in India and on flea-breeding in Poona.

Ankylostomiasis was supposed not to be prevalent in Grenada, but Dr. Cockin, who has been in charge of hospitals there and now returned, reports in *Parasitology* over 80 per cent. of hospital patients suffered from it. To get rid of it he recommends incineration of sewage, compulsory use of boots for laborers on land, application of lime to infected ground, leaving sufficient space between rows of trees, drainage, and free dispensaries. A pretty full list of requirements, but if all these methods were vigorously resorted to Dr. Cockin thinks the disease would be eradicated.

Nurses are making another attempt to secure state registration. On Monday the Prime Minister received at the House of Commons a deputation from the central committee, which represents some half dozen societies engaged in the effort to set up a register of trained and qualified nurses and so enable the public to distinguish them from the untrained and unqualified. Dr. W. A. Chapple, M. P., introduced the deputation and told the Premier that two vested interests were opposed. One the unqualified, the other one or two hospitals which exploited nurses for their own financial advantage. He declared trained and skilled nurses as necessary as medical men and untrained ones as dangerous as unqualified doctors. He did not ask any exclusive rights, but only a means of distinguishing those who were qualified from those who were not. Sir V. Horsley supported the proposal, as he said, on behalf of the British Medical Association, which he asserted was the only society which could be said to

represent the medical profession. This is rather a large claim, considering that though on this question it may do so, on others it has sometimes misrepresented the prevailing opinions. Drs. Mackintosh and McGregor addressed the Premier, as did three ladies, who dwelt on the project as it affected the public.

In his reply Mr. Asquith said he was much impressed by the arguments put forward, but thought Dr. Chapple took too sanguine a view of the opposition to their proposals, which was more formidable than four years ago, when he received a similar deputation. This opposition, he was informed on the best of authority, was now taken part in by 91 chairmen and 66 matrons of London hospitals, 178 matrons of provincial hospitals, 1,332 nurses and 342 doctors. He must say, in view of the figures, there was not unanimity among doctors or nurses for they must count matrons as among the most skilled.

He thought such a measure as they proposed would be vigorously opposed in parliament. He was not expressing hostility or even want of sympathy, but suggested they should negotiate with their opponents or so modify their plans as to command the support of the medical and nursing professions. If they would do that the Government would ardently sympathize—cold comfort, perhaps, but all he could give at present. Dr. Chapple said they had got unanimity among the societies, but could not possibly do so among individuals. He complained of the action of one hospital as to their nurses and the Premier said he would communicate the statement to the chairman.

This is Birmingham Health Week and has been kept with the usual spirit of the Midland capital. It opened on Sunday with sermons in about 150 churches and chapels in the city. Besides the leaders of various organizations for the betterment of the people, the Lord Mayor, the Medical Officer of Health and the Health Committee, the vice-chancellor of the university and chairmen of the several hospitals and an array of medical men and other speakers have been actively engaged all the week in pushing the claims of civic hygiene. A pamphlet has been issued showing what ought to be done in clearing away slums and many addresses have dwelt on the housing of the poor in the central and older parts of the city. Numerous public meetings in the Town Hall and the various council schools have been held daily.

The arrangements for the International Medical Congress in London from the 6th to 12th of August next are well advanced and the twenty-three sections all promise to be interesting.

Dr. William Huntley, superintendent of the Agra Medical Missionary Institution, died on the 11th of April in his fifty-fourth year. He had passed nearly all his medical life in India as a medical missionary and his services in several districts as such and in times of famine were greatly appreciated. In 1902 he took up the important post at Agra, where native Christians were trained for hospital assistants. He was educated at Glasgow University and took the degrees of M. A. and B. Sc., as well as the bachelorship of medicine and surgery followed by the M. D.

Dr. S. W. Cheeham, a well known practitioner of Forest Gate, died suddenly on the 27th of April, aged 49, while on a visit to a patient to whom he had hurried on his tricycle.

## OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

DISPOSAL OF EXCRETA—THE HOG AS A CARRIER OF HUMAN INTESTINAL DISEASE—MINNOWS AS DESTROYERS OF MOSQUITO LARVÆ—PLAGUE-INFECTED RATS.

MANILA, P. I., March 15, 1913.

IN order to deal more intelligently with the problem of the disposal of human excreta in the provinces, where no water carriage of sewage is practicable, and for the purpose of ascertaining whether the hog, which is the universal scavenger in the Philippines, might be concerned in the transmission of diseases to human beings, the Bureau of Health has had an interesting series of experiments made by the Bureau of Science, and these have just been completed.

The intestinal discharges of pigs were found to contain an entameba which closely resembled the pathogenic entameba of man, but this was finally determined not to be identical with the *Entamœba histolytica*. Four young pigs, used in the experiments, were naturally infected with human stools containing many encysted *Entameba histolytica*, and these were mixed with boiled rice and fed to the pigs. Daily stool examinations, which were begun the day of the feeding, were made for a period of 58 days. They constantly showed cysts of the pig entameba, but never the *Entameba histolytica*. Attempts were then made to infect monkeys with the pig entameba, but these experiments resulted negatively.

Feeding experiments were then made with hookworms which were obtained by making cultures of human feces containing the eggs of the hookworm. A pig was then fed on a six-day culture, an eight-day culture, a thirteen-day culture, and a fifteen-day culture. Stools of this pig were examined daily for a period of two months, with negative results.

Seven monkeys were then fed feces of a pig which contained many encysted balantidia and these were mixed with rice and fed to the animals. One monkey received direct rectal injection of the fluid stool from a man, containing many motile balantidia. The immediate result of these feeding and injection experiments appeared to be negative. However, by following the cases with daily stool examinations, and ultimately by necropsies, it was found that every one of the experimental animals became infected, that is to say, the pig-balantidia behaved in the monkey like the *Balantidia coli* does in man, it only appearing in the stools at rare intervals. In two of the cases they were never found constantly in the stools until the necropsies were made. Monkeys that were killed one month after the feeding experiments were begun, showed portions of the large intestine congested and reddened, but there were no ulcerations present. Sections of such areas showed the balantidia penetrating the sound tissue into the submucosa as far as the muscularis.

From the foregoing it was concluded that the pig-balantidia is identical with the *Balantidium coli*, and the primary etiological agent in balantidial dysentery of man. The experiments with *Strongyloides stercoralis* resulted almost identically with those of the *Balantidia coli*. The conclusions deduced from all of the experiments were, that the domestic pig plays no rôle in the dissemination of amebic dysentery or hookworm infection, but that it may be the source of infection in man of *Balantidia coli* and *Strongyloides stercoralis*, in the Philippine Islands.

In order to ascertain whether the pig in the Philippines is concerned in the dissemination of cholera, and especially whether the pig may not be an important agent in aiding in the suppression of cholera, a number of experiments were carried out. A hog was fed on rice mixed with a 24-hour old agar culture of cholera vibrio, at 8:45 in the morning, and the rectum was swabbed a day later and the specimen planted in 300 c.c. of cholera peptone the following morning. The peptone culture was examined by the hanging drop method, and found to contain a motile organism. It was then plated on Dieudonné's medium, and on lactose litmus agar. The following day the rectum was again swabbed and cultures made, and these were examined by the agglutination test with anti-cholera serum, but no positive reaction resulted. On the fourth day, plates and peptone cultures of the third day were examined, but no cholera vibrios were found. These experiments were repeated a number of times, and finally cholera cultures were injected into the rectum of the pig and high rectal enemas were given. In some of the experiments cholera cultures with rice were given in connection with sodium carbonate, with the view to neutralizing the hydrochloric acid of the stomach; the results were, however, negative.

Similar experiments were carried out with the *Bacillus dysenteriæ* of Flexner, and the results were practically identical with those of cholera, although in one instance, in which sodium carbonate was given, an agglutination was obtained.

The conclusions reached were, that the experiments directed to make hogs carriers of cholera vibrio and bacillus of dysentery met with negative results, as the attempt to recover the bacteria in question always resulted negatively after a period of 24 hours.

After considerable difficulty, Mr. A. Seale, of the Icthyological Section of the Bureau of Science, finally succeeded in importing some top minnows (*Gambusia affinis*) from Honolulu. These are now being used by the Bureau of Health in the swampy lowlands around Manila. In the experiments which were conducted in the laboratory, these minnows consumed enormous numbers of all forms of mosquito larvæ that were placed in the tanks with them.

Until recently, the rat campaign which has been conducted in the city of Manila has only resulted, at the rarest intervals, in the finding of plague-infected rats, in spite of the fact that a careful autopsy was made of each rat, and cultures made from all those that were doubtful. The number of rats caught frequently amounted to more than 7,000 per month. Within the past week, however, there has been a decided increase in the number of plague-infected rats found, no less than four having been encountered in as many houses. Three of these were in the Tondo district. An investigation made of the premises at 319 Estero Cegado, from which the first of these rats came, showed them to be a bottling establishment in which wine, olives, pickles, etc., are placed in bottles and then packed for shipment to the various parts of the Philippines. The empty bottles and the straw containers used to pack them in order to prevent breakage, were imported from Osaka, Japan. Human, or rat, plague has been more or less constantly present at Osaka during the past five years, and it has been assumed that plague-infected rats or fleas may have been imported with the straw.

Another plague-infected rat was found at 204 Calle Concha. An investigation showed that this address was a tenement house only recently completed, and built in accordance with modern rat-proof construction. A careful inspection did not reveal any rat-breeding places at number 204, but at number 200, which is in the same house, it was found that one of the tenements was used as a bottling place for soft drinks which are sent to the provinces. These are packed in identically the same straw containers which are mentioned above and are obtained from Japan. An investigation of a bale of containers resulted in the discovery of twenty-eight rats, none of which showed any evidence of plague infection by autopsy. A curious incident in connection with the rat plague is the fact that so far no rats dead of plague have been found. All of the rat plague has been among animals that were either trapped or poisoned. It is also a noteworthy fact that the first rat caught at 204 Calle Concha should be plague-infected and that the next twenty-eight caught in the same premises should be free of the disease. This gives another instance in which it might have seemed, at first, that the rat-proof construction was at fault, whereas, the difficulty lay with the quality and kind of material which was stored in the rat-proof house. The rats in question were easily killed, and afforded a most striking example of the ease with which rats can be destroyed provided the building offers no harboring places for them.

The rat plague-infection seems to be heaviest in the Tondo district. Fifty extra men have been employed by the Bureau of Health to aid in the destruction of rats, and particularly the rat nests, especially where they are in close proximity to man.

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# Progress of Medical Science.

## Boston Medical and Surgical Journal.

*May* 8, 1913.

1. The Diagnosis of the Tuberculous Character of Joint Disease. E. G. Brackett.
2. Infantile Beriberi in the Philippines. D. Gregg.
3. Cholecystitis and Cholelithiasis Associated with Pregnancy. R. M. Green.
4. Suffuse Subdural Lipomatosis of the Spinal Cord in an Infant. S. B. Wolbach and J. A. P. Millett.
5. The Abuse of the X-Rays in the Treatment of Skin Affections. J. T. Bowen.
6. A Statistical Study of Remissions in General Paralysis. H. L. Paine.
7. Non-Union of the Clavicle in a Child. W. P. Coues.
8. A Case of Blood Cyst of the Chest Wall. W. P. Coues.

1. **Diagnosis of the Tuberculous Nature of Joint Disease.**—E. G. Brackett outlines the following as characteristic signs of the tuberculous nature of an arthritis: The affection is almost always monarticular, and if it involves a second joint, the process in the latter follows tardily on the first, is much less severe, and of a less destructive course. The development of a tuberculous arthritis is slow, extending over a period of months or years. Remissions are usual, but during them the disability never entirely disappears, and there are one or more of the following residual symptoms: deformity, limp, slight disability, and swelling. Pain is not a prominent symptom. During the attacks pain is most noticeable as sensitiveness, and disappears with the acuteness of the attack. Fluid in the tuberculous joints is not usual, unless it be pus, and this naturally occurs as a late symptom, and when destruction has already begun and when the diagnosis is no longer in doubt. The swelling in superficial joints has much the feel of fluid, but is due to the thick, vascular, velvety synovial membrane which gives an elastic feel closely resembling that of fluid, and varies with the vascularity. A rise of temperature is not to be expected in the slowly developing and quiet joints.

2. **Infantile Beriberi in the Philippines.**—D. Gregg

concludes from his investigations that infantile beriberi in the Philippines is a nutritional disease which occurs among native breast-fed infants. It causes about 25 per cent. of the total native mortality in the city of Manila. It is due to the absence of some, as yet unknown nutritional substance in the breast milk of the nursing mother. It has been successfully treated by the giving of an extract of rice polishings, which is believed to supply the nutritional substance absent in the mother's milk. In the Philippines, where babies are almost always of necessity breast-fed, the reduction of the infantile mortality is dependent, even more than in other countries, upon the care and proper nourishmnet of the nursing mother.

3. **Gestational Cholecystitis and Cholelithiasis.**—R. M. Green refers to a definite causal association of cholecystitis and cholelithiasis with pregnancy. Symptoms due to either of these conditions may occur during pregnancy, during the puerperium following labor at term, or after miscarriage. The existence of gall-bladder disease is not in itself a cause of miscarriage, but miscarriage may induce the development of active symptoms from a process previously latent. Cholecystitis or cholelithiasis occurring during convalescence from miscarriage should receive the same surgical treatment and bear the same prognosis as in cases not associated with pregnancy.

4. **Subdural Lipomatosis of the Spinal Cord.**—S. B. Wolbach and J. H. P. Millett state that subdural lipomata are not uncommonly seen in cases of spina bifida and spina bifida occulta. Von Recklinghausen has shown the significance of these tumors, and has called attention to the fact that they are almost invariably mixed tumors, rather than true lipomata: usually myolipomata or fibrolipomata. These mixed tumors either spring from the subcutaneous tissue and stretch toward the cystic myelomeningocele, or are true intradural growths, springing from the spinal membranes and projecting free into the cyst. Fatty tumors may also appear when there is no marked cystic enlargement of the spinal canal, but only a flattened serous canal, the remains of a shrunken cyst that had formerly existed over the sacral region. It is noteworthy that in such cases clubfoot, a symptom so often associated with spina bifida, has occasionally been observed. Cases of intradural lipomata not connected with spina bifida are, on the other hand, extremely rare.

5. **Abuse of X-Rays in Dermatology.**—J. T. Bowen notes that a great many cases of unnecessary disfigurement, more obvious than the original affection, are caused by an improper use of the *x*-rays. The cases suitable for this treatment can be selected only by those who have considerable knowledge of skin affections. This method of treatment requires especial study and training and should not be regarded as an easy and safe procedure by those unskilled in its use.

6. **Remissions in Paresis.**—H. L. Paine finds from a study of unselected and consecutive cases of general paralysis admitted to a hospital during a period of thirty-four years that only one case with a history of a paralytic seizure showed a remission, and only six cases with a history of any form of cerebral insult showed a remission. Inversely, then, it may be said that if a case of general paralysis in its early stage has a paralytic seizure, the chances are very small that that case will have a remission.

7. **Non-Union of the Clavicle in a Child.**—W. P. Coues reports the case of a girl eleven years of age who five weeks after the receipt of an injury resulting in fracture of the right clavicle, still showed no real bony union at the site of fracture but only soft callus. There was a persistent slough over the olecranon resulting from the pressure of a modified Sayre dressing. *X*-ray examination of the child's leg bones showed a well-marked periostitis of the tibiæ. This indicated a syphilitic cause for the failure of bony union. Mixed treatment resulted in rapid improvement, and in six weeks the clavicle was practically solid.

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## New York Medical Journal.

*May 10, 1913.*

1. Insane and Mentally Defective Aliens Arriving at the Port of New York. G. W. Stoner.
2. Preliminary Report on the Diagnosis of Postpyloric (Duodenal) Ulcer by Means of Serial Radiography. L. G. Cole.
3. High Tension, High Frequency Currents. J. H. Branth.
4. What the Practitioner Should Know of the Wassermann Reaction. G. A. Wyeth.
5. Psychogenic Psychosis. N. J. Dynan.
6. Eye Strain Symptoms in General Practice. I. Hartshorne
7. Indications for Operation on the Inferior and Middle Turbinates and Septum. L. Grushlaw.
8. Hospital Prophylaxis. L. D. Frescoln.
9. Carcinoma of a Hyperplastic Hypophysis. J. Funke.
10. Tuberculosis of the Liver with Jaundice. L. S. Milne.
11. The Duodenal Tube. L. A. Doroff.
12. Biostatistics of the Jewish Race. L. Levyn.

1. **Insane Aliens.**—G. W. Stoner states that a more careful inquiry into matters pertaining to the medical office or the Immigration Service proper at Ellis Island would probably convince any fair-minded person that remarkably good work is being done there, in behalf of the immigrant as well as for the good of the State, but all agree that the space now occupied as medical examination rooms should be largely increased, that the number of medical officers should be at least doubled, and that a sufficient force of interpreters should be employed to meet all requirements; also that in the question of deportation no limit as to length of residence in this country should apply to any defective or otherwise excludable unnaturalized immigrant.

3. **High Tension, High Frequency Currents.**—By J. H. Branth. (See MEDICAL RECORD, March 22, 1913, page 547.)

4. **The Wassermann Reaction.**—G. A. Wyeth calls attention to the fact that the Wassermann reaction is not a test for the presence or absence of the exciting cause of syphilis, but is a test for the *antibodies* of this cause. This is shown by the fact that the Wassermann reaction is seldom positive in a fresh case of syphilis until toward the end of the first month after infection, that is, until the antibodies have had time to form. Verification of the clinical diagnosis in the first few weeks, therefore, is better made by examining scrapings from the depths of the suspected lesion under dark field illumination for the *Treponema pallidum*. In secondary, untreated, tertiary, and florid hereditary syphilis, and in paresis the percentage of positive reactions is very high, while in latent hereditary syphilis and in tabes dorsalis the author has been unable to obtain a positive reaction from the blood in more than fifty per cent. of the cases. In treated tertiary cases the reaction varies greatly, depending upon the amount of treatment previously administered, the date of the last treatment, etc. In syphilis of the cerebrospinal axis, and particularly in tabes dorsalis, the cerebrospinal fluid should be examined, for a positive Wassermann reaction may be present in this fluid even though absent from the blood. By way of preliminary precautions, one should bear in mind that a positive Wassermann reaction may occur in recent malaria, yaws, and leprosy; that alcohol taken in considerable quantities may mask an otherwise positive Wassermann reaction by rendering it negative; and that antisyphilitic therapy, when given in sufficient doses, generally renders the reaction negative, so that it is well to suspend all treatment for from three to six weeks before having the reaction made.

6. **Eyestrain in General Practice.**—By I. Hartshorne. (See MEDICAL RECORD, April 22, 1913, page 685.)

8. **Hospital Prophylaxis.**—L. D. Frescoln makes a plea for the maintenance of ideals in hospital work, which should represent the most advanced medical thought pertaining to all bodily states. Every precaution should be taken to prevent hospital epidemics; accidents should be carefully guarded against. Every individual connected

with the hospital should know how to prevent and extinguish an ordinary fire. There should be a careful choice of the anesthetic used, and economy may be effected in the less lavish use of the latter. All safeguards should be taken against the possibility of mistakes in the giving of medicines. Systematic regulations requiring proper ventilation, proper bathing, boiled water, pure foods, and graduated exercises all go to keep the institution as a whole in a state of less vulnerability than would otherwise exist. Points of seeming insignificance are to be borne in mind, such as the early outfitting with screens and killing of flies to prevent spreading of noxious diseases; removal of garbage and material upon which germs breed; the control of visitors to prevent bringing in contagions; and the control over the house staff to get prompt, serious, and efficient service.

10. **Tuberculosis of the Liver with Jaundice.**—L. S. Milne states that tuberculosis of the liver occurring in the course of general acute miliary tuberculosis, or secondary to tuberculous disease of the lungs or intestines, is by no means uncommon. It may indeed be very extensive, the liver being crowded with tubercles, yet only rarely is it of sufficient degree to be associated with jaundice. Still less common are those cases in which the liver is the only, or the most affected organ. The condition of jaundice produced by tuberculosis of the liver does, however, occasionally occur. The clinical picture seems to be fairly definite, although it has received only very scant attention in the literature of tuberculosis. The author records two cases, in which there was severe jaundice and in which the liver was the seat of extensive tuberculosis. The physical signs which were manifested were chiefly referable to the liver, yet the true condition responsible for the jaundice was not recognized during life in either case.

11. **Use of the Duodenal Tubes.**—L. A. Doroff enumerates and describes the following diagnostic and therapeutic uses of the duodenal tube: the differentiation between duodenal and pyloric stenosis; the diagnosis of duodenal ulcer; the diagnosis of duodenitis; transduodenal lavage; duodenal alimentation; the introduction and local application of remedies; the introduction of oxygen into the intestine for antiseptic purposes; the relief of persistent flatulency by the removal of gas from the duodenum.

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## Journal of the American Medical Association.

*May* 10, 1913.

1. Simple Devices for Effective Artificial Respiration in Emergencies. S. J. Meltzer.
2. The Carbohydrate Treatment in Diabetes. H. Strauss.
3. Atypical Pharyngeal Diphtheria. S. C. Lind.
4. Tuberculosis of the Large Arteries. With the Report of a Case of Tuberculous Aneurysm of the Right Common Iliac Artery. S. R. Haythorn.
5. Treatment of Felons with Reference to the Pathological Anatomy and Location of Incisions. G. M. Dorrance.
6. The Later Histories of Four Surgical Cases. W. W. Keen.
7. A Case of Annular Papular Syphilis in a Negress. H. Fox.
8. Spasmodic Torticollis. Notes on the Etiology in Two Cases. W. F. Schalter.
9. Pellagra: Some Facts in Its Epidemiology. R. M. Grimm.

1. **Devices for Artificial Respiration.**—S. J. Meltzer recalls the fact that in a preliminary note about a year ago he described a simple method of artificial respiration by means of which air was driven rhythmically by a bellows through a tube introduced into the pharynx. While this proved effective in dogs, rabbits, cats, and monkeys it failed in human beings, since in them the pressure on the superhyoid region did not sufficiently restrict the escape of air through the mouth and nose. In the present article the author describes two methods of causing the rhythmic introduction of air into the lungs in man and even in the rigid or frozen cadaver. He calls these methods the pharyngeal and mask devices. In the case of the first method the apparatus consists of a metal pharyngeal tube, a respiratory valve, a foot bellows or oxygen tank, and a safety valve; and, as accessories, a tongue forceps, a stomach tube, heavy weights and a belt. The heavy weight is placed on the abdomen to prevent the entrance of air into the stomach to any great extent and the belt is used to reinforce the pressure. When for any reason the weight cannot be used, a stomach tube of large diameter should be passed through the esophagus into the stomach for the escape of air. The pharyngeal end of the tube is shaped so as to fit into the pharynx, but a hole is provided for the stomach tube if needed, which can be closed by a movable plate. With the mask method every other part is the same as in the pharyngeal tube, except that instead of introducing a tube into the pharynx a well fitting mask is tied to the face. It is more especially suited for emergency cases than the pharyngeal method. The devices can be readily combined with the Schafer method of manual artificial respiration and are simple and inexpensive. While the use of the pharyngeal method requires some training, the mask method is so simple that laymen can be intrusted with its use.

2. **Carbohydrate Treatment in Diabetes.**—H. Strauss states that the oatmeal treatment does not act by virtue of any special property of oatmeal different from the properties of other flours. Under the same conditions of a diet without meat and with only a small amount of albumin, wheat flour does equally well. In the reduction of the quantity of albumin the author does not go as far as Blum, and for long periods of treatment he recommends not less than from fifty to sixty grams. A certain quantity of carbohydrate agrees with the diabetic the more slowly it is absorbed. In grave cases the author recommends inulin, especially for those with acidosis. It is clear that a carbohydrate treatment can be used only periodically and then only in grave cases, the lighter cases being treated on the old and tried principles. The later researches have shown that among grave cases there are those which are sensitive to albumin and, in these at least, the old method of giving unmeasured quantities of albumin is wrong. It is of special importance to know that in grave cases meat endangers the tolerance. It has also been proved that a certain scarcity of calories is useful; twenty-five calories per kilogram is sufficient for many diabetics. The carbohydrates of plants are slowly absorbed, thus favoring tolerance, and it may be that the intestinal flora is also favorably affected. It must be noted, however, that not every form of vegetable diet is suitable; it must be poor in carbohydrates and rich in fats, and those carbohydrates must be preferred for which the patient has the greatest tolerance.

4. **Tuberculosis of Large Arteries.**—S. R. Haythorn states that four types of tuberculous lesions of the aorta and its main branches have been described: (1) miliary tuberculosis of the intima; (2) polypi of tuberculous tissue attached to the intima; (3) tuberculosis of the wall, involving the several layers; and (4) aneurysms, the walls of which are composed of tuberculous tissue. The first is by far the most common, usually alone but sometimes combined with the other types. Under the third type are included all the tuberculous lesions affecting the several layers of the wall. Of the fourth and the last group the author has been able to find only four cases on record and these are noticed more fully for the purpose of comparison with the case he reports himself.

5. **Treatment of Felons.**—G. M. Dorrance describes his method of treatment as follows: The incision starts at the level of the base of the nail on one side and extends in the line of the skin furrows over the tip of the finger, up the opposite side to a point on the level with the beginning of the incision, in that way making a flap of the tip of the finger. A piece of rubber tissue or gauze impregnated with petrolatum is placed in the uppermost angle of the wound. The wound is dressed in normal salt solution and the dressings, which are kept moist, are renewed each

day. The rubber tissue will come away about the third day and no subsequent packing will be needed. A general anesthetic is advised, preferably nitrous oxide.

6. **Later Histories of Four Surgical Cases.**—W. W. Keen describes the later histories of four surgical cases. One was his first case of modern cerebral surgery in which he removed, in December, 1887, a large tumor from the brain. The patient is still living at the age of 50 years and bids fair to live for some years more. His sight is poor, but he can find his way about and he has an epileptic attack about once a year. Two cases are of cancer of the rectum, in one of which 6 inches was excised and in the other 9½ inches. The first patient lived fourteen years and died without known recurrence. He was able to enter into business and social life as before. The second patient is still living with an inguinal anus which causes little inconvenience, and he gives the details of the method of dressing which is attended to by the patient himself. A "dummy" truss suggested by this patient has been of great service in other cases. The last patient was a naval officer who had a traumatic rupture from the middle meningeal artery. After trephining, nine tablespoons of blood were removed. The patient made a perfect recovery and was in excellent condition six years after the accident when he was killed by an explosion on the vessel on which he was serving.

9. **Pellagra.**—R. M. Grimm concludes from his observations that more cases of this disease develop among the whites than among the negroes. More cases occur among the females of both races than among the males. More cases develop between the ages of 20 and 40 years than at other ages. Among the married and widowed pellagrins the females predominate; the single pellagrins are equally divided between the sexes. More of the author's cases had their onset during the months of May and June than in other months, and more in 1911 than in any previous year. More cases developed under conditions of poverty than of comfort, and more under conditions of comfort than of affluence. More cases developed in the vicinity of other cases than otherwise. None of the facts seems to indicate that pellagra is hereditary. The food used by the people in whom pellagra is prevalent deserves consideration as a possible etiological factor. The most promising field for the investigation of the etiology of pellagra is the food being used by the people in whom pellagra is developing.

## The Lancet.

*May* 3, 1913.

1. Birth Palsy: Subluxation of the Shoulder-Joint in Infants and Young Children. H. A. T. Fairbank.
2. A Case of Ankylostomiasis in Birmingham. R. Saundby.
3. Radium Emanation Therapy. W. Engelmann.
4. The Use of Tuberculin in Diagnosis and Treatment. J. F. Halls Dally.
5. The Treatment of Confirmed Cases of High Blood Pressure: the Undesirability of Actively Applying Therapeutic Means to Reduce It. A. Mantle.
6. Protozoal-Like Structures in the Blood in a Case of Black-Water Fever. A. C. Coles.
7. Man's Mental Evolution, Past and Future. H. Campbell.

1. **Birth Palsy with Subluxation of the Shoulder-Joint.**—H. A. T. Fairbank notes that subluxation of the shoulder-joint has received very little attention as a result of birth paralysis. In the treatment of the latter condition the most important measure is to obtain relaxation of the paralyzed muscles. If the joints of the paralyzed limb are placed in the correct position and if massage is ordered, nature will do the rest unless the nerve lesion is beyond recall. The author uses a special splint which is designed to keep the arm abducted to a right angle at the shoulder, with the forearm at a right angle with the arm, and the forearm supinated. The splint is taken off at least twice daily for massage of the whole arm and shoulder and passive movements of the joints. If after three months' careful treatment there is no sign of recovery the muscles should be treated electrically under an anesthetic, and if they do not respond to faradism operation upon the plexus is advisable. If subluxation of the shoulder-joint is present the reduction should be effected according to the method recommended by Royal Whitman.

3. **Radium Emanation Therapy.**—W. Engelmann states that radium emanation has an intensely stimulating effect on all the factors of assimilation. The emanation may be administered by means of baths, inhalation, drinking, enemata, or compresses. The diseases in which this form of therapy is useful are the following: Gout, articular rheumatism, sciatica and other forms of neuritis and neuralgia, bronchial asthma, arteriosclerosis, chronic pelvic exudates in the pelvis in women, etc.

5. **Treatment of Confirmed Cases of High Blood Pressure.**—A. Mantle quotes Oliver as follows: "The fact should be emphasized that supernormal arterial pressure is not itself a primary condition to be attacked or controlled as such. It is invariably a result of some pathological cause or causes, and it is, moreover, often a necessary evil the result of conditions we cannot remove, and then it must be looked upon as a compensatory effort, as one of the natural defences of the body." The author proposes the question: How is one to determine the true position of a case of supernormal pressure? There are two dangers: with one eye one sees visions of a possible catastrophe through the rupture of a weak vessel by doing too little, and with the other the danger of doing too much in lowering the pressure and weakening the cardiac force. The author's reply to the above question is as follows: One should take a careful history of the case and observe the condition of the cardiovascular, the renal, and the alimentary systems, and try to find out the cause of the high pressure, such as errors in diet, alcohol, syphilis, lead, and excessive worry, remembering that supernormal pressure is not a disease *per se*, but a symptom only. If the left ventricle is hypertrophied, it suggests that the pressure has been persistently high for some months or years. Experience teaches us that with a restriction of red meats and alcoholic drinks from the dietary of those who take them freely the pressure, if not a permanently high one, usually diminishes, and this argues that purin bodies and alcohol probably act as vasoconstrictors. Waste is constantly going on in the body, and it is important to get rid of the products of waste whatever they may be. The proof of the splanchnic vessels being some of the earliest to become affected in arteriosclerosis suggests that one should relieve the congestion of the visceral vessels, which can be done by judicious purgation. One-gram doses of calomel and saline purgatives are most useful two or three times a week. One of the greatest outlets for waste products is the skin, and when inactive a free action of this organ must be encouraged by artificial means, such as by massage-douche and Nauheim baths, when these can be obtained, and intestinal lavation is also very desirable in cases with constipation. It is a common observation that with a dilated periphery causing an active skin there is a lower range of blood pressure, which leads one to suggest to those who can afford it to follow the sun. If in spite of all régime and treatment the pressure continues high after the case has been watched carefully for some months, one concludes that this is a case in which the pressure is permanently supernormal. In any event the general régime should be continued, and as long as no urgent symptoms arise the patient may do his work in life if he avoids excitement and sudden strain. Lastly, one must not use any active means to reduce the pressure, remembering that it is probably an advantage and necessary that the pressure should be high for the maintenance of an adequate supply of blood to vital organs. As for drugs of the vasodilator type, the nitrite group, I use them

very little except in emergencies, for the author believes it is sounder treatment to get rid of the bodies in the system which contract the periphery by the means he has mentioned, rather than by dilating the blood-vessels with the offending poisons still intact. He gives iodides very carefully, if at all, but if there is any syphilitic history they may be pushed.

## British Medical Journal.

*May 3, 1913.*

1. The Present Evidence for and Against the Use of Tuberculin as a Specific Cure. H. B. Shaw.
2. Plea for Uniform Method of Treatment with Tuberculin. H. H. Thomson.
3. Prognosis in Pulmonary Tuberculosis: the Results Obtained by Arneth's Method. J. B. H. Holroyd.
4. The Epiglottic Suture: Its Value in Indirect Laryngoscopy. C. Horsford.
5. Cheilotomy: A Function-Restoring Operation in Crippling Traumatic Arthritis of the Hip-Joint. W. Sampson Handley and C. Preston Ball.
6. A Case of Enteroliths. J. Anderson.
7. Removal of Intrathecal Tumor from Lumbar Region of Spinal Cord. J. M. Clarke and C. A. Morton.
8. Classification of Tumors of the Pituitary Body. Gerhardt von Bonin.

1. **Tuberculin as a Specific Cure.**—H. Batty Shaw believes it is certain that if any remedy were applied to cases of pulmonary tuberculosis, some of the individuals would get better after its use. The same may be said of tuberculin. There have been many series of cases reported in which it is said there is evidence that tuberculin is a specific cure. Bandelier has published results of tuberculin treatment; he found that 100 per cent. of the cases in Turban's first stage lost their tubercle bacilli; 87 per cent. of the cases in Turban's second stage, and 44.2 per cent. of the cases in Turban's third stage also lost their tubercle bacilli. The total cases treated numbered 202. One has a right to ask, What would such cases have done without tuberculin? It is right to object that the disappearance of tubercle bacilli from the sputum is too often but a temporary phenomenon. Like all vaccine treatment, tuberculin is certainly capable of effecting a change in the aspects of the disease. Put it has never been experimentally proved that such changes are curative; the alleged curative changes can be explained on anaphylactic grounds.

3. **Prognosis in Pulmonary Tuberculosis and Arneth's Method.**—J. B. H. Holroyd notes that the prognosis in pulmonary tuberculosis is of vital importance both to the patient individually and to the health of a community. To make a correct prognosis is in many cases very difficult, and in some cases is almost impossible if physical diagnostic signs are the only guides available. Arneth's method of blood counting offers, however, some solution of the difficulties encountered in this connection. When Arneth devised this method he took the neutrophilic leucocyte, which may have I, II, III, IV, or V nuclei, as the cell, and on this he made his count. He then assumed that the cells with I or II nuclei were less resistant than the cells with III, IV, or V nuclei and that when those less resistant cells were present in large numbers the severity of the case varied directly as the number of these cells. The author adopted this method and applied it to thirty cases extending over a period of three months. The observations made on these cases suggested that Arneth was right, and that the prognosis varied inversely as the increase in neutrophiles having I or II nuclei.

4. **The Epiglottic Suture.**—C. Horsford regards the preliminary use of the epiglottic suture for facilitating intralaryngeal operations as not limited to cases of obscured field of operation caused by a markedly overhanging epiglottis. This procedure should be used in all cases in which the epiglottis in any way hinders a delicate intralaryngeal manipulation, whether it be cutting or cauterizing, especially where a perfect vocal result is desired. This method may also be used simply for diagnosis, when other methods of lifting the epiglottis have failed. It may in a few cases be used without the aid of a laryngeal mirror, when it is found, on depressing the tongue, that the upper border of the epiglottis can be seen.

5. **"Cheilotomy."**—W. Sampson Handley and C. Preston Ball present a preliminary communication on an operative method which may prove to be of wide application in the treatment of chronic hypertrophic arthritis, especially if it be uniarticular and of traumatic origin. It is a record of the two first cases in which the method has been applied. Both were of traumatic origin, and in both the hip was the joint affected. In both, while flexion remained relatively free, the movements of abduction and rotation were lost, so that riding was impossible and walking was slow and difficult. In the first case continuous severe sciatic pain, dating from the accident, made the patient's life a misery to him. Stereoscopic radiograms showed clearly that the principal obstacle to the movements of the joint in both cases was an osteoarthritic lip or cornice around the head of the femur. It occurred to one of the authors that it might be possible to chisel away this lip sufficiently to relieve pain if not to restore a useful range of movement to the joint. An operation for this purpose was devised and successfully carried out, with functional results in both cases which up to the present have surpassed the authors' expectations. The operation consists in opening the hip-joint and removing the cornice on the head of the femur, so far as it is accessible, by suitable bone-cutting instruments devised to work in a cramped space. On account of its technical difficulty the operation is somewhat prolonged, but in both instances shock has been absent and convalescence uneventful. It will probably be found that this operation is applicable in other joints than the hip. A procedure so definite, and possibly of such wide application, appears to need a distinctive name. The authors suggest the name *cheilotomy* (χεῖλος, lip) as convenient.

## Berliner klinische Wochenschrift.

*April 21, 1913.*

**High Altitudes and the Pulse Frequency.**—Stern deals with mountain climbing as well as rarefied air. The height above sea level in the experiments cited was from 5,000 to 8,000 feet. It was ascertained that descending requires nearly as much effort as climbing mountains if the subject is on his feet. He is engaged constantly in actively lowering the same weight which he has been lifting. The steeper the incline the greater the effort in descent. Naturally for the purpose of comparison the same rate of speed must be maintained in both directions. The only advantage in descent is that friction is somewhat diminished. To give a concrete example the pulse of one of the party, male, was 92 at the height of 1,750 meters. Four hours later, at 2,600 meters, it was 126. After a brief rest at the summit the pulse increased to 132. Descent now began and at 2,150 meters the pulse had risen to 136, while at 1,545 meters it was 143. The party then retraced their steps with the result that at 1,650 meters the pulse fell to 124 and at 1,750 meters it was down to 114. Several factors naturally contributed to form the pulse curve, which was the same for all of the members of the party. The rarefaction of the air above a certain level began to cause an independent acceleration of respiration which modified the pulse curve of mere exertion, and this influence of altitude naturally persisted for some hours.

**Temporary Sterilization of Women.**—Blumberg reports six cases of this form of intervention, which he regards as much to be preferred to therapeutic abortion in women with tuberculosis, valvular lesions, psychoses, etc. It is not always desirable, however, to sterilize permanently; but hitherto we have had at our disposal not a single certain resource for the restitutio ad integrum. The author's method with this end in view consists in suturing one of the broad ligaments to the posterior surface

of the uterus in such manner that the ovary is separated from the fimbriated extremity of the tube by a continuous suture. The ovary lies loose in a pouch of peritoneum and whenever desired the "sterilization suture" may be removed. The author exhibited the first patient treated by him in this manner. She was at the time tuberculous, had borne several children and after her disease developed had undergone a therapeutic abortion. The sterilization was done by the vaginal route, and as one ovary was cystic it was extirpated. This was the only one in the series of six in which resection of the appendage was necessary, for in all the others both ovaries were sutured to the uterus. In all the patients menstruation went on as before, and thus far this appears to be the author's sole reason for the belief that the women can conceive after liberation of the ovary. Thus far he has not attempted the restitutio ad integrum.

**Scopolamine in Morphine Withdrawal.**—Mueller refers to Fromme's method of weaning from morphin under the influence of scopolamine. The same author had, however, made similar claims for dromine, codeine, brucine, and even for other substances the nature of which did not become public. One of these, termed by him "antimorphine," was alleged to be morphine itself disguised, and the public was warned against it by the Berlin police. The author evidently means to do a similar service to the medical profession, for he shows the danger of using such a powerful narcotic on enfeebled morphine victims. Some of these are besides incurable even in the presence of drugs which aid the majority, notably those with painful affections and habitués who have no desire to be free.

## Münchener medizinische Wochenschrift.

*April 22, 1913.*

**Exposure of Inoperable Cancer of the Stomach to X-Rays.**—Finsterer sums up the experience in this field at Hochenegg's Clinic as follows: Resection of the carcinoma is to be carried out always when practicable. If local anesthesia is used the presence of severe complications should not deter the surgeon from intervention. After resection of cancer which is far advanced one should resort either to the usual deep radiation, or, better, expose the operative field to the direct action of the rays with the aim of destroying outlying cancer cells in the lymph nodes. This procedure should diminish the frequency of recurrences *in situ* and of liver metastases. In inoperable cancer the trial laparotomy which makes possible the diagnosis should be utilized for the exposure of the cancer area to the direct action of the rays, and synchronously a gastroenterostomy should be performed well toward the fundus—and if this is impracticable a simple jejemostomy. The mobilization of the stomach with its fixation immediately beneath the abdominal wall has been practiced in individual cases for a number of years by Czerny, Lexer, and others, but the author would elevate the intervention to the dignity of a routine procedure, in which he would incorporate a gastroenterostomy as essential part. Into the radiation field should be brought all continuous structures rich in lymphatics, notably the gastro colic ligament.

**General Asthenia of Connective Tissue and Wound Healing.**—Vogel cites a great number and variety of surgical cases intended to demonstrate that defective wound healing and defective scar formation depend upon a special connective tissue dyscrasia. Strict proof, however, cannot be forthcoming, until a number of surgeons investigate the subject from the author's viewpoint. The author has for years sought to determine the reasons for poor healing. Blood studies threw no light upon the subject, although the negative results may have been due to imperfect technique. The same holds good for the results of histological studies. It is possible that thorough studies might reveal some deficiency in elastic fibers. To the naked eye these subjects often show pallor, and cold cyanotic extremities.

**Galvanic Neuromuscular Excitability in Gravidæ.**—Seitz finds that in the latter months of gestation some 80 per cent. of gravidæ show a slight increase of galvanic excitability which reaches a maximum during delivery and declines in the puerperium. This phenomenon the author brings into relationship with a latent tetany, presumably a parathyretoxicosis, which is expressed at times by peculiar asthmatic attacks, often combined with malaise and tremor. Either asthma or tetany may occur alone in an otherwise normal gravida, as may also the mere galvanic excitability. Combinations and transition forms of various types are also seen.

## Deutsche medizinische Wochenschrift.

*April 17, 1913.*

**Tissue Necrosis and Arterial Arrosion from Infiltration Anesthesia with Old Solutions.**—Von Gaza reports two cases in his own practice (which appears to combine with surgery an occasional dental extraction). He keeps on hand a large quantity of novocaine solution, instead of preparing it extemporaneously, although he always boils it before injection. He had used the solution for long periods without any ill effects. In the first case of extraction of an upper molar he injected 3 cm. in the gum, anesthesia was perfect and extraction accomplished readily. It was seen that the cheek swelled more than usual and two weeks elapsed before it subsided. This was attributable not to the solution, but to the ulcerated state of the tooth, as swelling often occurs after such extraction, although not to this extent. The second case was one of multiple extraction in the upper jaw. Seven ccm. in all were injected, involving the entire gum of one side and the course of the anterior palatine nerves. After the extraction the side of the face swelled enormously, closing the eye. There was, however, neither discomfort nor temperature. A necrotic area formed in the hard palate and an arterial hemorrhage resulted. Several ligatures were applied and, although nearly three weeks had elapsed since the anesthetization, the parts were still insensitive. The author does not accuse the drug, but bacterial contamination of a sort not affected by heating the solution. In an experience of a hundred similar extractions he had seen nothing like it. He implies that the quantity injected may also have cooperated as a factor.

**Colitis Mucosa and Intermittent Fever.**—Couto of Rio Janeiro states that mucous colitis seldom exists alone, but is merely a local expression of a general catarrhal tendency involving all mucosæ which he terms polymyxoditis. There is a superior and inferior type. The condition rests upon a constitutional anomaly. In the case of colitis we see elevations of temperature which have a notable intermittent character at times, appearing as quotidian, tertian, quartan, or even with remissions of a week. As a rule rigors and sweats do not occur, and the rise does not exceed 38° C. The condition persists until the colitis is cured. A number of cases are given. One patient, a young married woman, suffered from meteorism, obstinate constipation, passage of much mucus, catarrhal endometritis—also the superior type was present—rhmopharyngitis, tendency to conjunctivitis, etc. The urine contained the ordinary evidences of intestinal putrefaction. The symptoms of colitis had been present for ten months. The fever, as is usually the case, had appeared in two major crises in which the intermittent type was pronounced. Also there were minor crises in the intervals, but these for the most part escaped the attention of the patient and were brought out only by the use of the thermometer.

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

*Annual Statement of Policy Values.*—The interests of the policy holders are fully protected by the laws which require every regular life insurance company to file an annual statement of its assets and liabilities, including the net legal value or reserve of all outstanding policies, as determined by the minimum valuations. This procedure enables the insurance department of each State to determine whether or not these companies are maintaining a reserve not less in amount than the net values of all policies in force, in accordance with the law. Such companies are, on this account, called "Legal Reserve Companies." They are also termed "Old Line Companies" to distinguish them from fraternal and assessment organizations whose premium rates are not fixed but are subject to increase as necessity may demand and which are not required by law to maintain an adequate reserve or to submit to any standard system of valuation to determine their solvency or the sufficiency of their rates.

A policy valuation in the annual statement consists in determining the present value of the claims which under the existing policies the company will have to meet and deducting from this the present value of the payments which under existing policies the company is going to receive; the difference between the two makes up the present value of the company's liability and must constantly be on hand as a reserve to meet the future claims as they become due.

The total present value of the claims which under the existing policies the company will have to meet may be determined by referring to the mortality and interest tables. The mortality table will tell how many will die in each year thereafter and how many will be living at the end of each year. From these data the amount of claims to be expected in each year until all existing policies have matured, either by death of the policy holders or by the expiration of the term for which the contract was written may be calculated. The present worth of these sums can then be computed at the assumed rate of interest, and the total amount will represent the present value of all the future claims.

The present value of the payments which under the existing policies the company is going to receive may be determined in a similar way, as the mortality table will tell how many policy holders will be living at the beginning of each subsequent year to pay the premiums called for by the policies in force. From these data the net premium income of each year until the last existing policy will have terminated may be calculated, and the present worth of all the future net premiums to be collected may then be ascertained by consulting the interest table.

For the purpose of illustration, it may be supposed that a company, after transacting business for a number of years, finds the present value of future claims amounts to $38,000,000 and that the present value of future net premiums comes to $34,000,000. There is then a deficit of $4,000,000, termed the legal reserve liability, and the company would be declared insolvent by the State authorities if no resources appeared in the annual statement to offset the deficit. If, on the other hand, the company has saved up the balance of its net premium and interest income from year to year so that the legal reserve has been maintained, after paying all death claims coming in during those years, there will be an accumulation of funds amounting to at least $4,000,000 to make good the deficit or legal reserve liability, and the company will then be declared to be technically solvent. In other words, the company has a fund on hand which represents the difference between the present worth of net premiums to be collected and the present worth of claims to be met under all outstanding policies.

The case cited as an illustration is simple but the actual carrying out of the valuation is an intricate and arduous matter owing to the great variety among the classes of policies, the ages at entry and the periods they have been in force.

The legal reserve must necessarily reach enormous proportions in the largest companies, each of which has between $100,000,000 to $200,000,000 of insurance in force and, in spite of the fact that this reserve is strictly demanded by the law, many legislators have allowed their minds to become uneasy over these large sums of money. They might have spared themselves this perturbation of spirit, when genuine and not affected, by acquiring some slight knowledge as to the full purpose of the funds in question. The reserve funds do not represent profits earned; on the contrary they are liabilities to policy holders under current contracts and consist of excess payments in the past, which are balanced by the defective payments to be made in the future as described in a previous article.

Life insurance companies already bear too heavy a burden of taxation. One single large company paid $1,333,534 in direct taxes in 1912, of which $233,187 represented the United States corporation tax, and most of the balance went to the various States. It is proper for life insurance companies to contribute their share toward the support of the government under the protection of whose laws they do business, but this is fully carried out by the usual taxation of the properties in which the insurance funds are invested. Direct taxes taken from the contributions made by policyholders, especially to mutual life insurance companies, can not be justified on economic principles, as they penalize thrift, foresight and prudence. Furthermore, a large part of the taxes levied directly on savings of any kind must necessarily be diverted to the benefit of the dissipated, indigent and spendthrift portion of the community.

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**General Effects of Habitual Tobacco Smoking.**—Dr. F. Parkes Weber, in discussing the general effects of tobacco smoking on the human mechanism, says that, like relatively moderate indulgence in alcohol, it does harm in many cases. Weaklings cannot indulge in alcohol, tobacco, and many other things, which strong persons can for a time indulge in with apparent impunity. The weaklings are often protected by their very weakness, whereas the duration of life is often shortened in the strong by their very strength and their consequent *joie de vivre* and their tendency to indulge in excesses of all kinds. Thus indulgence in tobacco has a somewhat leveling tendency with regard to the duration of life. It probably tends to shorten the span of life of the strong, whereas persons of weak constitution are less affected because they are not often smokers. From this deduction, Life Insurance Companies cannot be considered losers owing to the smoking proclivities of the generality of men.

# Book Reviews.

Aufgaben der Glaukombehandlung unter der Kontrolle des Schiötzschen Tonometers. Von Prof. V. Hippel in Halle a. S. Price 1.20 M. Halle a. S.; Carl Marhold Verlagsbuchhandlung, 1912.

This monograph is one of 46 pages and consists of a careful analysis of cases of glaucoma of all forms that have come under the care of Prof. von Hippel. The cases are classified and considered under their separate headings. The condition of the cases when first observed, form of treatment and ultimate results are all given. Prof. von Hippel writes in the highest terms of the Schiötz tonometer as an instrument of precision and of value in the study of variations in intraocular tension. His very large experience, well-known ability as an observer, clinician and operator make the utterances of Prof. von Hippel on any subject in ophthalmology of exceptional value. A perusal of this very excellent monograph cannot but be profitable to all who are interested in the subject of glaucoma.

Textbook of Ophthalmology in the Form of Clinical Lectures. By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. Matthias Lanckton Foster, Member of the American Ophthalmological Society; Member of the American Academy of Ophthalmology and Oto-Laryngology. With one hundred and eighty-six illustrations in the text and thirteen colored plates. Volumes II. and III. Price $2.50 per volume. New York: Rebman Company, 1913.

The second volume of Foster's translation of Roemer's Textbook is one of 294 pages fully illustrated by figures in the text. There are two well executed colored plates. This volume is devoted to a discussion of diseases of the eyelids, injuries of the eye, diseases of the vitreous body, of the sclera, of the lacrymal organs and of the orbit; also glaucoma and "muscular or concomitant strabismus." The plan of the volume follows that of the first volume; namely, a series of lectures. There is no bibliography. Professor Roemer is a careful student, a close observer, and a man of convictions peculiar to himself. These are reflected in his work. The volume is particularly of value to the practicing ophthalmologist, but may be used to advantage by the student, especially in postgraduate study. It is one of the very valuable modern publications on ophthalmology.

The third and concluding volume of Roemer's work is devoted to a discussion of The Pupil, Paresis of Ocular Muscles; The Neurology of the Eye; Diseases of the Chorioid, Optic Nerve, and Retina and "Functional Testing of the Eye." There is an appendix in which the various forms of asthenopia are considered and an index covering the three volumes. The general excellence of the work is maintained in this volume. The text, which is in a semi-popular vein, is easily read and comprehended. The three volumes with a total of 896 pages form a textbook that is practical and that deserves to become popular with those seeking knowledge of ophthalmology.

Anesthetics and Their Administration. A Text-Book for Medical and Dental Practitioners and Students. By Sir Frederic W. Hewitt, M.V.O., M.A., M.D. Cantab., Anesthetist to His Majesty the King, Late Anesthetist to His Majesty King Edward VII, Physician-Anesthetist to St. Georgt's Hospital, Consulting Anesthetist and Emeritus Lecturer on Anesthetics at the London Hospital, Late Anesthetist at the London Hospital, Charing Cross Hospital, and the Royal Dental Hospital of London. Fourth Edition, Prepared with the Assistance of Henry Robinson, M.A., M.D., B.C.Cantab. Anesthetist to the Samaritan Hospital and to the Cancer Hospital. Seventy-one illustrations. Price $5.00 net. London: Macmillan & Co., Limited, 1912.

The publication of the present edition differs from its predecessors in several respects and has been rendered necessary by the extraordinary changes that have recently taken place in the practice of anesthesia—changes so revolutionary in their character that large sections of the book have had to be rewritten. Two wholly new chapters, one on local and regional anesthesia, and the other on the medicolegal aspects of surgical anesthesia in general, have been added. The latter chapter is written by Digby Cotes-Preedy, M.A., LL.M., Barrister-at-Law. He reviews briefly the main legal considerations that arise in relation to the administration of anesthetics, such as the present state of the law, the legal liability of the anesthetist, the public investigation of deaths under anesthetics, the steps that have been and are still being taken to remedy a state of affairs in this department of practice which, in the words of the recently appointed Home Office Committee, is a serious menace to the public. The medicolegal aspects of surgical anesthesia are considered under the following headings: (1) Present state of the law; (2) the legal liability of the anesthetist; single-handed operations under anesthetics; anesthetics in hospitals; (3) the public investigation of deaths under anesthetics; (4) the need for reforms and the steps that are being taken to secure them. The new chapter on local and regional anesthesia contains the following subjects: A. The properties of the principal drugs used for procuring local or regional anesthesia; B. The physiological actions of the drugs commonly used for producing local or regional anesthesia; C. Local anesthesia; D. The combination of local with spinal or general anesthetics; E. Spinal anesthesia: drugs used for inducing spinal anesthesia; the technique of lumbar anesthetization; the phenomena of spinal anesthesia; after effects; the mortality rate of spinal anesthesia. A description of many cases illustrative of the text are scattered throughout the book. The work contains practically everything of value on the subject and should be in the hands of all who administer anesthetics in private or hospital practice.

Medical Laboratory Methods and Tests. By Herbert French, M.A., M.D. (Oxon.), F.R.C.P. (Lond.), Assistant Physician, Guy's Hospital, etc. Third edition. Price $1.50. Chicago: Chicago Medical Book Company, 1912.

It is not surprising that a third edition of this little handbook has so soon become necessary. It confines itself to chemical and microscopical methods that are of established value in clinical medicine and presents them in such clear and condensed form as to render them most easily available. It is very complete and the values and fallacies of each method are carefully pointed out. The more complicated methods are entirely omitted. It is attractively bound and can be recommended without reservation as furnishing the average man all that it is necessary for him to know in order that he may perform the usual laboratory procedures. One error should be pointed out. On page 43 in the description of the test for indican in the urine, the statement is made that "Iodides, if present, will color the chloroform blue."

The Animal Kingdom Considered Anatomically, Physically and Philosophically. By Emanuel Swedenborg. Part on the Organs of Generation, and the Formation of the Fetus in the Womb, after which follow Chapters on the Breasts and the Periosteum. Translated from the Latin by Alfred Acton. With 10 anatomical plates. Price $3.00. Philadelphia: Boericke & Tafel, 1912.

This book should furnish an interesting glimpse into the mind of the famous Swede. It consists of well arranged quotations from anatomists describing the structure of the various parts of the generative system in man, followed by Swedenborgian "inductions" discussing the data of the anatomists and stating the hidden significance and adaptation of the parts to the purposes they serve. These teleological discussions are interspersed with numerous philosophical remarks on human life in general, and especially as it is evidenced in the function of procreation. The discussions of the eighteenth century thinker are frequently so strikingly original and true as to explain to a great extent the sway he once held over the minds of many men. The book should be a necessity to the faithful Swedenborgian, for the translation is a very readable one; it should likewise prove valuable to the medical reader interested in the development of human thought and knowledge.

Traité de l'examen des Crachats. Étude histochemique, cytologique, bactériologique et chimique, par Fernand Bezancon, professeur agrégé à la Faculté de Paris, méddecin de la Charité et S. I. De Jong, ancien chef de clinique médicale à la Faculte de Paris, ancien interne lauréat des hôpitaux. Price 10 fr. Paris: Masson et Cie., 1912.

In this work of 412 pages the authors argue for the utility and necessity of a careful chemical and microscopical examination of the sputa, since thereby is obtained much definite information regarding lesions of the respiratory tract. First is described the technique of examination together with a general study of the gross appearance and chemical composition of sputum; then follows a special study of the sputa in the different affections of the respiratory tract; and the work is concluded with a special and exhaustive study of the sputum of tuberculosis. The methods here described furnish a valuable addition to our diagnostic aids in respiratory diseases. The book is illustrated with eight well executed inset plates, of which seven are in colors.

# Society Reports.

## CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

*Held in Washington, May 6, 7, and 8, 1913.*

(Special Report to the MEDICAL RECORD.)

(*Continued from page 914.*)

*Wednesday, May 7, 1913.*

THE PRESIDENT, DR. WILLIAM C. GORGAS, IN THE CHAIR.

**The Life of Tissues Outside the Organism from the Embryological Standpoint.**—Dr. ROSS G. HARRISON of Yale University, New Haven, presented this paper and gave a lantern slide exhibition. He said that this subject had only come into prominence during the past few years. It was hoped that light would be thrown on the specific function of each tissue. The discoveries in regard to the survival of parts after the death of the organism from which they had been taken had excited wide interest. He did not know why this had occasioned so much more interest than the discovery that cells could be isolated, live, and grow outside of the organism from which they were taken. Comparatively very little was known about the activity of the cell and it was to make up this lack that the writer's studies had been carried out. The first to study the activity of cells were the experimental physiologists; then the method of isolation of parts was practised by embryologists. They cut the cell of the developing embryo and studied the isolated cell. This was the underlying idea of Bohn's work and these same methods he had used in the study of the development of the nervous system. The writer had separated the nerve cells from the rest of the organism. The method he had used in his observations was that of the "hanging drop culture." It was a combination of the ideas of other investigators rather than any particularly new device. In the study of nerve neuroblasts he found that the nerve fiber was not the outgrowth of the cell but was formed from the protoplasmic bridge which existed everywhere in the organism between the cells and could not be isolated. He thought he would try to see what the nerve cell did when there was no protoplasm. The parts of the central nervous system of the embryo were dissected out and then transplanted into a drop of lymph on the cover slide. Transplanted to lymph this tissue underwent changes in the course of a few days and spread out and flattened because of the liquefaction of the lymph and many cells wandered out from the tissue. He then watched what took place in the nerve cells. He also took portions of various other tissues of the embryo. He found that cells from the epidermis differentiated cilia; the pavement cells differentiated very queerly. After twelve hours it could be noted that the nerve fibers had grown out a long distance. These fibers came from isolated cells. He watched the character of the movements for six hours at intervals of eight minutes and found that the movements were very rapid, about one micron per minute. In order to show that they were real nerve fibers he had used the specific stain which showed neurofibrillæ. It was a specific nerve tissue without doubt. The protoplasmic activity had formed nerves. If they cut off these fibers there was a regeneration of the peripheral parts. Burrows had found a method by which one could use the blood of a chick as a medium and other discoveries were made so that the method could be used with any of the tissues of any of the vertebrates. Critics claimed that these activities were not normal because of the change conditions surrounding the cell, but they were not right, since there was regular growth and cell division. Not only was there differentiation but actual cell multiplication and increase in volume of the tissues, but the longevity was not yet worked out. They knew, however, that these tissues could be kept alive for a long time. In order to produce a perfect reproduction of the tissue it should be demonstrated that the tissue could be kept alive as long *in vitro* as it would have lived in the organism from which it was taken. If the tissue had been taken from an animal that lived on an average four years, then they should be able to keep the tissue alive for that length of time. These methods were of distinct use in studying the phenomenon of the living organism. There were many possibilities for study in this field by changing the environment under which the experiments were conducted. This method, while producing cell division and multiplication, had failed to show any form development; the growth remained simply a mass of cells. In discussing the effect of the medium on growth and differentiation the writer said that the tissues differentiated in salt solution, but they had need of solid support or there was no movement of the cells and no growth. If nerve fibers were on a solid support when they left the cells this might be a visible chemical process. This brought him back to the nerve problem, and it seemed evident that the protoplasmic bridges between the fibers formed the support. The results that they had obtained showed that this method was applicable to the study of embryonic cell movement and differentiation.

**The Life of Tissues Outside the Organism from the Physiological Standpoint.**—Dr. MONTROSE T. BURROWS of New York presented this paper. He said that there was no line between the morphological and the physiological aspects of this subject, and he hoped that he would be pardoned if he repeated what had already been given. The object in growing tissues outside of the body was that they might be observed in the living condition, and this could not be done by Loeb's methods. In 1910 he had begun the study of cultures with the idea of developing a method which would be applicable for practical experimental purposes. Lymph had hitherto been used as a culture medium and this could only be obtained in small quantities and its consistency was not always constant. He therefore turned to blood plasma as a promising medium and prepared fibrin from the blood of chickens. His observations on the growth of chick embryos were similar to those of Dr. Harrison and confirmed the results that Dr. Harrison had pointed out. He thought it would be a good idea to test the applicability of these methods to adult tissues. His observations included experiments on the tissues of dogs, cats, rats, guinea-pigs, and man. Tissues from all of these sources grew luxuriantly except those from man. The human plasma went into solution at once. There were some small growths in the case of human tissue, but only a few. The undue liquefaction of the medium led to the early death of the tissue. Practically all other tissues caused liquefaction in varying degrees, but it took place slowly. He had experimented with the chick embryos in many liquids. They grew rapidly in isotonic sodium chloride solution of various strengths and the growth was prolonged and increased by the addition of chloride of potassium. The growth was the same as that in a wound. The connective cells grew as isolated cells in the surrounding medium. The growth in each variety of cell was characteristic of its kind. The nerve cells appeared as axis cylinder cells, the blood cells as amebic cells. The growth depended upon the medium and was often greater in weak solutions than in strong ones. Adult striated muscle succumbed, but embryonic muscle wandered, divided, and differentiated. The growths would keep in an inactive state as long as six months. To effect this preservation the tissue was placed in a drop of plasma and the whole tightly sealed. If there was sufficient medium the tissue would retain its life for a long time. This field offered a prospect of reproducing every form of cellular activity seen in the body. Wound healing had been imitated by culture through the movement of epithelial cells. If two portions of tissue were placed near one another in the medium each would send out cells toward the other and the tendency would be for the cells to fill the intervening space. Dr. Harrison had called attention to the need of solid body support to the growing cells. Contact with the cells unless violent did not stimulate movement. A single cell in a culture medium tended to move away and liquefy from a large mass rather than from a small one. All movement was due to a chemical process. Given the diameter of a wound, by the application of the principles of cell proliferation the form of healing could be predicted. It had been suggested that by an application of their theory wounds might be made to heal in a few hours. Practically, it did not happen in so short a time. The fibrin lying between the edges of the wound was too thick and contracted in proportion to the amount of fibrin present. Cell development began only when the cells ceased to wander and located in a clot. It was better to have a colony of cells in the culture medium as this produced sufficient liquefaction to provide nutrition. There were amebic movements at the poles of the cells accompanying cleavage at the equator; these movements were due to external influences, but division was due to internal forces. The writer had also experimented with heart muscle cell. The question as to what caused the heart to beat had long been discussed and two theories had been advanced, the myogenic or automatic, and the neurogenic. The heart cells were freed from all nerve cells and it was found that they continued to beat rhythmically. This seemed to him to be conclusive evidence of the truth of the myogenic theory.

**The Life of Tissues Outside the Organism from the Pathological Standpoint.**—Dr. Robert A. Lambert of New York read this paper, which was illustrated by lantern slides. He said that those who were directing their energies to problems relating to the nature and cause of disease were interested in the new methods of growing cells apart from the organism mainly on account of its possible application to the study of the various morbid processes affecting the human body. In his opinion the new method offered several very definite advantages in that it allowed one to observe directly under the microscope changes taking place in living functioning isolated cells, thus making it possible to pursue with ease many questions in the field of pathological histology, the solution of which has seemed to wait on the discovery of a technique of this kind. In the second place, it permitted one to eliminate many factors which in experiments on the animal body were a source of much confusion, as for instance, nervous control. In the third place, the isolation of some single factor for the purpose of special study was made possible. In the fourth place, one was able to introduce more easily into an experiment known and measurable factors such as changes in the physical and chemical composition of the medium, introduction of specific toxins and poisons, variations in temperature, etc. It was obvious that not all problems having to do with the activities of cells was open to attack by these methods since every tissue could not be made to grow *in vitro*, or at least not up to this time. The number of tissues that could be successfully cultivated was not inconsiderable, including connective tissue cells, bone, cartilage, endothelium, skin and corneal epithelium, intestinal epithelium, malignant tumors and possibly also thyroid and kidney epithelium. Certain cells, such as ganglia cells, seemed to survive though they did not proliferate. The problems which presented the most fruitful field of application might be classified under three headings: First, morphological questions; secondly, questions in immunity, including cancer immunity, cellular and bacterial immunity, and thirdly, problems relating to the cultivation and study of the viruses of certain infectious diseases, especially those in which the specific intracellular bodies had been described. He showed pictures contrasting the discrete wandering of the sarcoma cell with the sheet-like or grouped type of growth seen in the next picture, which was one of mouse carcinoma. He emphasized this type of growth, not only because it represented a general difference in the growth of epithelial and connective tissue, but also because it showed that the growth of cells *in vitro* and *in vivo* was not essentially different. The next picture showing individual sarcoma cells illustrated the phenomenon of ameboid movement. It was suggested in this connection that in the spread of the tumor through the body the activity of the individual cell must play an important part. In a sarcoma culture they had seen a cell travel a distance of five millimeters in 48 hours, a rate that would easily enable a cell in the center of the breast to reach the axila in six or eight weeks. That fat in the cells was a result of degeneration of the cell cytoplasm, or that cells died through a fatty degeneration was disproved by the fact that cells containing fat moved about freely and underwent perfectly normal miototic division, that the fat might completely disappear when the cells were transferred to fresh culture medium, and that by diluting the plasma with Ringer's solution the amount of fat accumulated was directly proportional to the amount in the plasma medium. They had concluded that the presence of fat in the cells was referable to some unexplained disturbance in metabolism. The whole question of normal and pathological fat accumulation seemed to have been opened by this technique. Another problem which had interested them was the development of foreign body giant cells. By adding lycopodium spores to cultures of chicken spleen they had been able to produce *in vitro* giant cells of the familiar body type. They had been able to determine that they were formed by a fusion of cells and to decide in a general way as to the nature of the cells that went to form them. They demonstrated that connective tissue cells did not take part. A comparison of the growth of normal cells and cancer cells *in vitro* showed that the normal connective tissue cells divided in an orderly regular manner; only normal mitoses were observed and the time required for division was quite constant; whereas in sarcoma cells atypical division figures of all kinds were seen and the time required for division varied within very wide limits. This method made it possible to observe the phenomena of cell division in the living mammalian cell. Normal tissue cells seemed to be much more hardy than sarcoma cells, showing often a markedly accelerated growth after the first or second transfer, while sarcoma cells showed a diminished activity. They also found that connective tissue cells were definitely more resistant to high temperatures than sarcoma cells. The writer then related his experiments with cancer immunity and cellular or cytotoxic immunity. He concluded from these experiments that cytotoxins were easily demonstrable in tissue cultures and that cancer immunity was not a type of cytotoxic immunity. In the experiments upon the question of cytotoxin specificity two series of guinea-pigs were immunized respectively with rat sarcoma and rat embryo skin. Plasma from each series of animals was used for cultures containing both kinds of tissue. These experiments showed that sarcoma might immunize completely against skin and *vice versa*. There was no evidence of even a relative specificity. Red blood cells would immunize against other tissues. There was another field of pathological investigation in which this new method might be applied, that was in the study of viruses and specific lesions of infectious diseases in which the living agent had not yet been identified, as rabies, vaccinia, variola, measles. Efforts had been made by the writer of the paper in association with Dr. Steinhardt and Dr. Poor at studying rabies and vaccinia. They had tried to see if Negri bodies would show any development or multiplication *in vitro* when fragments of brain from rabid animals were incubated in blood plasma. No development or multiplication of Negri bodies in rabid brain cells took place *in vitro*, so far as they could determine. They found, however, that in the control preparations in which normal brain alone was incubated, the same structures also appeared. In the latter case the bodies certainly represented some degenerative changes in the brain cells. They, therefore, regarded their results as favoring the idea that the Negri body was not a parasite but a specific cell degeneration.

Dr. Leo Loeb of St. Louis said that these papers had demonstrated clearly the features of the different tissues when taken out of their natural surroundings and put into a new environment. They had done this in very much the same way as had previously been done with bacteria. The methods that he had used were based on the same principles as those just related, but he had used larger pieces of tissue and had put them into a tube. This had the advantage over the cover method that enabled them to study the gases and yeast and to eliminate the leucocytes. He had found that it was possible for transplanted tissue to grow without an outgrowth of cells so long as it was in contact with a solid or semi-solid substance. If two pieces of tissue were placed near each other the cells grew from each piece toward the other. Different tissues acted differently in the plasma, for instance, the tissues of the guinea-pig absorbed the plasma and they would be found to be growing when one had supposed them dead. Epithelium did not grow as well as connective tissue. His experiments with long series of transplantations had led him to believe in the potential immortality of ordinary cells.

Dr. Warren H. Lewis of Baltimore said they had been growing tissues in known media, such as sodium chloride, calcium chloride, and sodium bicarbonate. They found that in varying percentages of sodium chloride tissues migrated and mitosis took place in such simple solutions as 0.5 to 1.5 per cent. solutions of sodium chloride without difficulty. A high percentage solution caused delay of the cell activities. The saline solution offered an advantage over the plasma in that it did not cling to the cover glass and one could study the living nerve on glass. It could be seen that the processes anastomosed freely with other fibers so that a true network was formed and stains showed that the neurofibrillæ passed from one nerve fiber to another. Mitosis was very frequent with various solutions. He had studied the subject of fat in the cells and the relation of the fat in the cells to that in the media, and had found that the first cultures never contained fat, but he had been able to produce cultures in which the accumulation of fat was so enormous that the cell structure was practically obliterated. Rejuvenation by transplantation could be reduplicated in artificial media to which cane sugar or dextrose had been added and the occasional addition of a fresh drop of the medium doubled the time of life and growth. The growth was striking after the addition of alcohol or ether, but not if there was more than two or three per cent.

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**Congenital Atresia of the Bile Duct.**—Ferruccio Vanzetti made a careful anatomical and histological study of a case of this condition which he discovered in the dissecting room. The case was that of a baby four months old which had been born markedly jaundiced, and had remained so until death. The study of this case showed that congenital atresia of the biliary passages is followed by cirrhotic changes in the liver.—*Archivio per le Scienze Mediche.*

## MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(Special Report to the MEDICAL RECORD.)

SECTION OF PEDIATRICS.

*Wednesday, April 30.*

(*Concluded from page 919.*)

**Nerves and the Nursing Mother.**—Dr. CONWAY A. FROST of Utica read this paper. He said that the influence of the nervous system on the milk of nursing mothers had more far-reaching effects than was at first realized. Were the same time and energy expended in finding out the cause of the mother's derangement that was spent upon the adaptation of cow's milk, something of importance might be forthcoming. The average physician if called to an infant with digestive trouble, and if he could not immediately straighten it out, instead of trying to rectify the trouble with the mother's milk turned to his favorite textbook and read upon milk formulæ, and the long struggle began. When something went wrong with the mother's milk, the average physician never looked further than to inquire whether there had been a dietetic error. He believed that they were on the wrong track. The farmer's boy was very careful in driving the cow home, not to irritate her for fear of spoiling the milk, but little care was taken of the nursing mother in this respect. He believed that a life devoid of nervous shocks was of far more importance for the well-being of the nursing mother than a diet devoid of minor indiscretions. Just how these nerve shocks interfere with the proper secretion of the proper food he did not know. Metabolism they knew was often inhibited, the whole digestive process upset, and the sweat glands inhibited or stimulated by emotion, and yet they utterly ignored the emotional effect on the sensitive milk glands of the breast. It had been his experience that the proteids had been increased during such nerve upsets, not that this was the only change, but it was the most palpable one; it had been his custom to increase the number of bottle feedings temporarily (if the child had been fed on mixed feedings), and also to try to get a higher fat and lower proteid in the mother's milk. The difficulty at times might originate in an increase in fats. If these changes occurred, why not others? They should strive to get some light on this subject, and that was his object in writing this paper.

Dr. FLORENCE STAUNTON of Utica said that some facts were difficult to account for; some nervous mothers were good nurses, while some phlegmatic women could not nurse their children. The care of the pregnant woman should be begun early and the woman prepared to nurse her babe. Pregnancy and nursing were subjects upon which women did not think enough. The pregnant woman should have a more thorough examination than was always customary. It was not sufficient to examine the urine; nervous troubles and eyestrain should receive attention. If a fixed fee could be charged for care from the beginning of pregnancy until after delivery, the physician would get the cases early. Another point that should be emphasized was that more patients should be exercised in starting the milk supply. Frequently inability to nurse a child was the result of nervous fear on the part of the mother lest she would be unable to perform that function. A great deal could be done in such cases by restoring the confidence of the mother. Sometimes it required five or six weeks' work to establish the milk supply. Mothers should not nurse their babies longer than the tenth or twelfth month, as long nursing unfitted them for a succeeding pregnancy or lactation.

Dr. CORNELIA W. THOMAS of Rochester said the problem of nerves in the nursing mother was not different from that of nerves in any other mother. The baby was influenced by the nerves of the mother before the child was born as well as after. The cause might be anemia, any of the various pelvic affections, or a nephroptosis. For all of these conditions the physician could do something, but she did not know what could be done for the careworn and overworked woman who had a family dependent upon her.

Dr. T. WOOD CLARKE of Utica said he was glad they had gone back to the woman, for however much they might disagree on the subject of artificial feeding they all agreed on the breast for the baby for one year. The number of mothers who could not nurse their children was insignificant if one attacked the problem in the right way. The mother should be made to believe that she could nurse her baby and she would be able to do so. Dr. Clarke cited cases which he believed confirmed this statement.

Dr. IRA S. WILE of New York called attention to the mistake that was often made of thinking a mother could not nurse her child because she had no milk on the second or third day. Instances had come to his notice where the flow of milk had been established three months after delivery. The best stimulus was the suction of the baby. When the mother went to the milk station under the impression that she could not nurse her babe, those in charge of the station should see that an effort was made toward maternal nursing before resorting to artificial feeding.

Dr. ELIZA M. MOSHER of Brooklyn called attention to the frequency of inverted nipples. When this defect was present the mother suffered a great deal of pain at first and it took considerable time to get over the fear of further pain. It was remarkable how common this condition was. For many years Dr. Mosher said she had made it a practice in the routine examination of girls and young women to note without calling their attention to the fact whether or not the nipples were inverted, and when she met with this defect she advised the mother of the girl to see that corrective measures were taken, as much trouble could thus be spared the future mother. Dr. Mosher thought that the pressure of the corset bone was responsible for inverted or defective nipples and that the matter should be brought to the notice of the corset manufacturers. In the course of routine examinations pediatricians frequently had opportunity to observe the condition of the nipples and should advise early treatment. Enlarged breast glands might result from infection absorbed from accumulations lodged in the nipple depression.

Dr. A. CONWAY FROST of Utica said that the object of his paper had been to emphasize the desirability of keeping away from the cow and to inquire into the effect of nervous disturbances in the mother, not to discuss the treatment of nervous diseases in women.

**The Value of Discipline in the Care of the Sick Child.**—Dr. T. WOOD CLARKE of Utica read this paper. After pointing out that upon the control of naughtiness depended the success or failure of one's efforts toward a diagnosis and cure in the sick child, and calling attention to the fact that too frequently when there was a prospect of a long illness the endeavor was made to make the little one as happy as possible by endeavoring to gratify every wish which was a very wrong course, he described a method he had used in suppressing howling which consisted in placing the palm of the hand over the child's mouth and nose every time he began to scream. The writer concluded that the lack of discipline might be responsible for actual illness and that whatever method of disciplining was adopted, and to whatever extent circumstances made it possible in the individual families to carry out any measures, one should always remember three facts: A healthy child needed discipline, an ill child needed it more, and a nervous, spoiled one needed it most of all. By being strict with a child one increased his chances of recovery from an acute illness, made the household more habitable, the child far happier, and, most important of all, one destroyed the cocoons which if allowed to develop would, in later years, hatch out into the devastating blights of neurasthenia, hysteria, and even insanity.

Dr. GEORGE DOW SCOTT said that the psychology of the physician was the same as that of the parent and he did not believe in suppressing a child's cry. He thought one should always deal frankly and honestly with the child. When he met a refractory child and had to hold him down he made a joke of the affair and soon the child came to regard it in the same light.

Mr. HERBERT WEET, principal of the Rochester schools, said there were some points brought out in the paper that were quite as vital to the teacher as to the physician. The paper had essentially been a plea for self-control in the growing child, and the point had been made that this was for the welfare of the child. If that was true of the physical, it was even more true of the mental and the moral. Education was essentially the training of the child in self-control and similar qualities. The fact that these elements in education seemed to hold a subordinate place to mere book knowledge was due to the fact that the community demanded that the children be able to pass examinations. The child acted and developed through instincts of play, curiosity, imitation, and repetition. There could be no growth or development except as there was opportunity for the expression of these instincts. The great problem of education had been that of discriminating intelligently between the instinctive tendencies which should be developed and those which should be suppressed. This was the problem upon which the Montessiore and Froebel methods were based. Elementary education should bring out and develop self-control, honesty, frankness, and simplicity, and real instruction was one of the means to this end.

Dr. T. WOOD CLARKE said that he thoroughly agreed with

all that Dr. Scott had said; he was not brutal. The cases cited in which he had suppressed the crying were exceptional cases. He certainly agreed with him as to the necessity of implicit honesty in dealing with children. His method of suppressing the cry did not hurt the child in any way.

*Thursday, May 1.*

**Care of the Newborn.**—Dr. C. G. Leo-Wolf of Niagara Falls, N. Y., read this paper. He said that he would not attempt to bring out anything new, but he wished to emphasize the following points: 1. The feeding of the newborn should be in the hands of the pediatrist from the first. The infant should not be fed at all on the first day, only once or twice on the second, and five times a day at intervals of four hours from the fifth day on. 2. The antiseptic care of the infant required that in hospitals and among the wealthy two nurses should be employed, one for the mother and one for the infant; if there was only one nurse, special care should be exercised to prevent infecting the infant with bacteria from the lochia. 3. Wiping out of the mouth of the infant was no longer practised. 4. Books on the care of the infant intended for mothers and nurses should not contain any formulæ. 5. Registrars of vital statistics should be prevented from furnishing the manufacturers of patent and proprietary foods with the addresses of young mothers.

Dr. John Ragone of Buffalo said that he was in hearty sympathy with the reader of the paper in believing that the newborn baby should be under the care of the pediatrician in the hospitals, and also in private practice where possible. The obstetrician was not interested in the baby, as a rule, and the general practitioner was not careful enough of details. The result was that eventually the pediatrician was called in, but he should be called in before the mischief was done that was often so difficult to repair. He had been following the four-hour method advocated by Dr. Leo-Wolf and had found it satisfactory. The necessity for cooperation between the obstetrician, the pediatrician, and the general practitioner should be emphasized. Abscesses of the breast should be regarded in the same light as stitch abscesses or infected wounds were now regarded in surgery. They should never occur. Surgical cleanliness should be insisted on in the care of the baby. Another reason for placing the baby in the hands of the pediatric nurse was that few nurses outside the large hospitals in the cities had proper training in the care of newborn infants.

Dr. De Witt H. Sherman of Buffalo said that in order to avoid the gripes mentioned by Dr. Leo-Wolf he advised the early administration of a weak solution of bicarbonate of soda. Bicarbonate of soda was one of the best mucus solvents and hence cleansed the mouth and stomach and allowed easier gastric secretion; as an alkaline diuretic it relieved renal colic due to the early passage of uric acid crystals and their salts, and it prevented the abuse of the child by locating the colic in the proper place rather than considering it as an intestinal one and resting satisfied with castor oil treatment. The baby should be put to the breast every six or eight hours during the first twenty-four hours and a little more frequently after that time until the milk came. Then the interval should be regulated in direct proportion to the amount taken and the comfort of the child. The scales were absolutely essential as a guide in determining this interval. A regular four-hour interval should not be attempted in every case. He advised an accessory feeding once a day both that the mother might have some liberty and that the child's digestive ability might be tested and preparation made in case of accident to the maternal milk supply. Dr. Sherman laid great stress on the aseptic handling of the newborn babe. A sterile cloth should be laid inside the blanket in which he was wrapped. In removing the vermix caseosa the oil or vaselin should be sterile. The water in which the baby was bathed should be as sterile as that coming from the heater and cooled. If the baby's mouth was cleansed, the nurse's hands should be previously sterilized and sterile gauze used for the washing. The rectal temperature should be taken as frequently for the babe as for the mother, as temperature was an important indicator of the child's condition.

Dr. Thomas S. Southworth of New York asked Dr. Leo-Wolf what disposition he made of the old idea that nursing was of assistance in the process of involution of the uterus. He said that he could not quite accept the idea of the long interval before the first feeding. One might take a middle ground by putting the child at the breast four times during the first twenty-four hours. Colostrum was a natural laxative and there must be a reason for this. To his mind the four-hour interval had not been proven a necessity for all infants. On the Continent the mothers appearing at the clinics had a much larger quantity of milk than those in this country usually had, and their children probably got all the milk they needed. Here it was a different matter where the question of a sufficient amount of milk hung in the balance. Dr. Clarke had told of a woman on the Continent who nursed eight infants. This remarkable milk supply was the result of stimulation. Where stimulation was needed the four-hour interval was a mistake. Where the milk supply was deficient much could be done to improve it and a popular opinion ought to be created that a baby should not be weaned without a consultation with the pediatrician.

Dr. T. Wood Clarke of Utica asked Dr. Leo-Wolf if it was his practice to have the babe nurse from one or both breasts at a feeding. If the breasts were nursed alternately there would not be enough stimulation for the mother inclined to have a limited supply of milk. If the child did not nurse during the first two days, it would have to have castor oil and he was strongly opposed to this. When the milk seemed to be insufficient the infant should be put to the breast every two hours and instead of giving one or two accessory feedings a little supplementary feeding might be added after the child had obtained all that it could from the breast. Dr. Clarke asked what progress the Society for the Prevention of Infant Mortality was making with its book for mothers.

Dr. Sherman replied that he understood that they were working on the book and that it would be a model one. The title of the book was "Saving the Baby."

Dr. Carl G. Leo-Wolf of Niagara Falls, in closing the discussion, said that he had not mentioned castor oil because he did not use it. He thought the suggestion of giving bicarbonate of soda very valuable. He was not a faddist on the four-hour interval but he had found that it worked well with most normal babies. He would not use the plan with a premature baby. So far as his experience went he had never seen a post-partum hemorrhage result from not putting the child to the breast. On the other hand, where there were afterpains he had found that they were increased when the child was placed at the breast.

**Enuresis and Chronic Digestive Disturbances.**—Dr. Frank Vander Bogert of Schenectady said that it was no doubt true that involuntary passage of urine was due either to increased irritability of the bladder or to a diminished tone of the sphincter, influenced by increased excitability of the lumbar center or interference with normal brain control. It was to the underlying cause of this excitability that he wished to direct their attention. Reflex irritation was of importance in the production of enuresis since not infrequently cures followed the removal of these sources of irritation. The same local conditions, however, occurred with even more frequency in children who were not bed-wetters and the frequent failures following treatment directed toward these lesions made one exceedingly skeptical as to their very great etiological importance. According to the opinion of Leonard Williams, adenoids and enuresis were associated only because they were due to an underlying cause which he considered to be thyroid insufficiency. The writer said that in his personal experience thyroid had failed more frequently than it had succeeded and a search of the literature had failed to reveal any startling results from its use. If hypertrophied tonsils were considered as a part of a general catarrh of the intestinal tract, the relief afforded by their removal might fairly be considered to be due to the effect upon the gastrointestinal catarrh and the subsequent improvement in the general health. The instances in which changes in the urine were responsible for the production of enuresis were so rare that this factor might be excluded in considering the etiology of the condition. So many functional and nervous disorders of childhood had been found to be dependent upon chronic digestive disturbances that the question had arisen in the author's mind as to whether urinary incontinence might not be traced to the same source as an underlying cause. With this object in view he had studied the histories and symptomatology of fifty children, who were the subjects of incontinence. The dietetic histories invariably gave ample reason for suspecting the alimentary tract. Practically without exception gross errors in feeding were noted, and often dated from early infancy. Prolonged nursing certainly predisposed to poor development and consequently to digestive disturbances in later childhood; and the more frequent dietetic errors seemed to be in the direction of sweets and starches. A few were possibly excessive milk drinkers. Possibly it would be more fair to include only those cases in which a large amount of indican was present in the urine and justified the diagnosis of a toxemia of this nature. Meat excesses were not so frequent. Irregular feeding and feeding between meals apparently played a most important part. Practically all the patients showed symptoms common to gastroenteric

disturbances. In discussing the association of enuresis and rheumatism in children, Still said that he had observed that rheumatism occurred sufficiently frequently in children with enuresis to make him watchful for it. He also said that the rheumatic child was apt to be a nervous child. It seemed just to assume that both the rheumatism and the nervousness were manifestations of an intestinal toxemia. Other arguments in favor of the intestinal tract as the seat of the underlying cause of enuresis were the frequent occurrence of enuresis after acute catarrhal diseases and the relapses noted during acute digestive derangements. Writers of textbooks had given comparatively little attention to the part played by the digestive tract in causing enuresis and of the possibilities of treatment directed toward the improvement of the digestive process. The dietetic treatment advised had apparently been with the object of changing the composition of the urine rather than of increasing general muscular and nerve tone, and of preventing toxemia. The improvement of enuresis during warm weather argued in favor of the catarrhal condition as a causative factor. Reflex irritation arising from the fecal masses of chronic constipation or parasites might be factors in the production of incontinence as they were also factors in the causation of intestinal catarrh. If they accepted this theory as to the causation of enuresis, treatment must be directed to the gastrointestinal condition. The dietetic treatment consisted in a definite number of meals given at regular intervals sufficiently long to insure complete digestion and the establishment of an appetite, absolute abstinence from food during the intervals, a mixed diet containing vegetables to stimulate peristalsis, and to secure regularity of the bowels. The diet should be based on the history of the particular excess and upon a study of bowel movements in order to determine what particular food stuffs were at fault. Mastication should be thorough and good hygiene should be maintained. Medical treatment was practically limited to the use of laxatives temporarily and to intestinal antiseptics.

Dr. De Witt H. Sherman of Buffalo said that the principles elucidated by Dr. Vander Bogert in his paper had struck him as striking at the root of nocturnal enuresis. A child with a comparatively stable nervous system might have adenoids, or an adherent prepuce, or intestinal parasites, and yet have good control of the sphincters, but in a child with unstable nervous system these irritations produced trouble. Hence the treatment should be directed to building up the general nervous and physical tone and the removal of the various reflex influences. In spite of these measures some children still continued their bad habits. With many of these he at first timidly resorted to psychotherapy and with startling results. The physician was the one who could make the greatest impression on the child, though if the parents had sufficient force of character they might make the so-called night suggestion. This treatment seemed particularly adapted to the nervous high-strung child, especially if he was a good patient. Dr. Sherman cited a number of cases which were very convincing as to the effectiveness of psychotherapy in his hands. He agreed that adenoids belonged to the group of catarrhs of the gastrointestinal tract and could not see upon what principles one could expect the administration of thyroid extract to be followed by any startling results.

Dr. R. D. Moffett of New York called attention to the fact that some of the foreign physicians believed that enuresis in many instances was due to mental defectiveness. Many of these children were neuropathic and responded easily to suggestion. In those that had chronic intestinal indigestion one had to use means other than suggestion. Abroad they applied the faradic current over the sacrum and bladder and a number of cases were found to respond to this treatment.

Dr. Charles Herrman of New York said that a large percentage of these cases represented purely functional neuroses. There had been about twenty different methods used in the treatment of these cases and they had given very variable results. If there was any great bodly change suggestion would not work. In regard to the association of adenoids and enuresis, Dr. Herrman said he wished to remind them that about 25 per cent. of all children had enlarged adenoids and consequently this association was not surprising and did not necessarily mean anything. He had tried thyroid extract but had not secured any very brilliant results with it. He had had a large number of cretins under his care and many of them had enuresis, and he could not see that thyroid had any effect upon the incontinence. If chronic intestinal intoxication had anything to do with enuresis it was important to know it as something that would help to build up the general condition and assist in overcoming the enuresis. Perhaps one reason why the enuresis improved during the summer was because most of these children being of nervous temperament were influenced to a considerable degree by the long school hours and that being out of doors and relieved of pressure of school work made the difference.

Dr. Frank Vander Bogert of Schenectady said that Dr. Vander Veer of Albany had found in a large series of cases of adenoids that 10 per cent. had enuresis.

**A Plea for the More Frequent Use of Lumbar Puncture.**—Dr. Edward J. Wynkoop of Syracuse presented this communication. He said that the points which he wished to emphasize particularly were the following: 1. Lumbar puncture was of great value from a diagnostic and therapeutic standpoint in other than true meningitis cases. 2. It had not yet received the endorsement it should have and it was not as often used as it should be by the general practitioner. 3. It was the only prompt and sure way to secure a positive diagnosis in cases showing suspicious meningeal symptoms whether alone or accompanying some other disease. 4. Therapeutically by relieving the brain pressure, it was much more prompt and effective than drugs. 5. Many cases showing suspicious meningeal symptoms cleared up almost at once after a lumbar puncture. 6. In the treatment of convulsions from any cause, it was a remedy of great value. 7. Its technique was simple and it should be promptly and easily done by the general practitioner.

Dr. Walter Lester Carr of New York sent the following discussion which was read by the secretary, in which he stated that lumbar puncture was now so firmly established that it was used in hospital work more often than paracentesis of the chest and abdomen. The conditions for which the puncture was performed were: 1. When there were evidences of pressure symptoms occasioned by changes in the brain or spinal cord. 2. When it was deemed advisable to study the fluid in the spinal cord so as to detect pathological changes. 3. When any substance was to be injected for therapeutic purposes. Lumbar puncture should be done more often in children suffering from the effects of cerebral concussion and other brain injuries. The uses of lumbar puncture should be extended to private practice for with ordinary surgical cleanliness there was no danger to the patient. Local or general anesthesia was not required in infancy but in childhood a local anesthetic might be applied, or ethyl chloride inhaled. A study of the physical, chemical, cytological, and bacteriological characters of the spinal fluid might be of supreme value and the symptoms now designated as meningism might be classified.

Dr. Joseph Roby of Rochester said that with regard to lumbar puncture he wished to ask if any of them had ever seen a case of anaphylaxis. He related an instance in which he had administered tetanus antitoxin to a man and immediately upon giving the injection the man succumbed. In another case of a child with cerebrospinal meningitis, who had previously been healthy, he did a lumbar puncture and finding the fluid cloudy injected serum. The child gave a few gasps and died. The death might have been due to a change in the pressure of the spinal fluid, or it might have been due to anaphylaxis; he did not know which. Dr. Roby said he had still another case which he wished to report. He was called to see a child that had been in convulsions from 2 o'clock in the morning until 8. The child was 8 years of age and the convulsions were more like hysteria. The temperature was 101° F. and the pulse 110. There was no Kernig's sign; the reflexes were not exaggerated, and the neck was not stiff. He thought at first that he would not do a lumbar puncture, but a few hours later he was called again and found the child with a temperature of 103°. He tapped the child and the fluid came clear. It contained no organisms though he did not look for tubercle bacilli. The urine was normal. After the puncture the temperature dropped. There had been an increase in the white cell count. Dr. Roby asked whether hysteria could produce spinal pressure and an increase in the white cell count.

Dr. T. Wood Clarke of Utica said that he had had a baby die just as Dr. Roby had described, only the death occurred just before he introduced the serum.

Dr. Edward J. Wynkoop of Syracuse said that the fluid should be drawn off rather slowly and that two or three tappings were sometimes preferable to only one. In his experience he had never had any such accidents as had been reported. When there was an infection, such as pneumococcus, accompanied by meningeal symptoms, if one did a lumbar puncture, the danger of meningeal complications would be obviated.

**Studies from the Infants' Summer Hospital.**—Dr. Joseph Roby of Rochester said that he had no paper to read but wished to exhibit a few devices that he had originated. The first of these was a method of capping nurs-

ing bottles that was intended for large institutions and milk stations. It had some advantages over the cotton stopper and was more economical than the metal stopper. The intravenous method of making injections was being used more and more and simple apparatus was a necessity. He had constructed a comparatively cheap outfit which was intended for localities where one did not have the conveniences of a laboratory. It had been designed mainly for the injection of salvarsan but was equally suitable for other intravenous injections. It could be used over any kind of a fire that happened to be convenient. The outfit was portable and could be taken anywhere and be ready for instant use. In the *Journal of the American Medical Association* for April 19 there was an article on the advantages of having a universal chart for clinical purposes. He had looked over the charts of many hospitals in the endeavor to find one suited to his purposes and had been surprised at the variety of charts in use. If all could use the same chart it would be a saving of considerable expense in addition to the other advantages. He had devised a chart which he presented and which was similar to that used at Bellevue Hospital but had some additions. It was so arranged that one could note the progress of the case from day to day at a glance. He expressed the hope that the president would appoint a committee to see what could be done toward getting a universal chart.

**Report of Cases.**—Dr. Joseph Roby of Rochester reported three cases. Two of these showed the effect of pneumothorax on children. The charts exhibited in connection with these cases showed the drop in temperature after the institution of the nitrogen compression treatment. The third case was one of leucemia in an adult and showed the possibilities of the *x*-ray and benzol in the treatment of this condition.

**A Case of Anorexia Nervosa in an Infant.**—Dr. Norris G. Orchard of Rochester reported this case. A child about one year of age, apparently in normal health, was given a new nipple and refused to take food afterward. Every possible method was employed to persuade the child to eat and all kinds of food were offered, but the child persistently refused to eat until he had lost about 3 pounds. At length gavage was instituted and carried out for several days after which the child again began to take his food in the usual way.

Dr. De Witt H. Sherman of Buffalo related an instance in which a child refused food and finally died, but he said he had not dignified the trouble by the name "anorexia nervosa."

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held April 3, 1913.*

The President, Dr. William M. Polk, in the Chair.

This meeting was arranged by the Section on Neurology and Psychiatry and the order of the evening was a consideration of psychological problems in medicine.

**The Psychological Clinic.**—Prof. Lightner Witmer, Ph.D., University of Pennsylvania, Philadelphia, spoke of the work of the psychologists. In bringing this branch of science before them he said he necessarily spoke with modesty and hesitation. Those present might not know that Dr. Henry W. Cattell had the distinguished honor of being the first man appointed as professor of psychology in any institution in this country; he was designated by this title in 1899. The first laboratory of psychology in this country was started by Dr. Hall of the Johns Hopkins University in 1882 and not long after men began to turn their attention to practical applications of this branch of science. Professor Witmer said he took pleasure in recognizing before the Academy of Medicine the obligations they owed to a physician of Philadelphia who first drew their attention to the relation between adenoids and defective mental development. In December, 1896, there was held at the normal school in Philadelphia a meeting of scientific men to consider the problem of the backward children in the schools, as well as the incorrigible children, with a view of establishing special classes for them if necessary. Dr. Harrison Hallett spoke of the important relation of these adenoid growths and mental deficiency. In 1896 a student of psychology in his department had under observation a boy of fourteen who was a bad speller. She was unable to teach this boy to spell. When he was examined it was learned that he could not read. After working with this boy at the Psychological Laboratory it was discovered that he was suffering from a weakness of the ocular muscles and this gave him double vision. The boy could direct his eyes upon a letter and see it distinctly, but he could not get over five or six letters in order to get the word. This boy was one of normal intelligence, but he was not able to read better than a child in the second school year. As soon as an oculist had corrected his vision his mental condition was distinctly corrected although he had some alexia. The task of teaching a boy of fourteen or fifteen what was ordinarily acquired by a child of six or seven was a long one. The boy subsequently acquired the ability to read novels and other books with a fair rapidity. He never overcame, however, the arrest of development of the brain which was due to neglect on the part of the teachers and the medical inspectors who failed to discover the relation between this physical and mental defect. Professor Witmer reported a few cases, those that specially interested him at the Psychological Clinic at the University of Pennsylvania. On the staff there they had five assistants; also a paid social worker whose duty it was to supervise the child; she had two assistant social workers. She had other duties, such as keeping records, doing stenographic work, handling the correspondence, etc. As a result of this work, and the work they were doing in the public schools of Philadelphia, he believed they could draw a sharp line of distinction between two kinds of cases and it was this problem which more interested him. There was the child who was called the feeble-minded child, the mentally deficient child, the one who belonged in institutions. Then there was the child with a mental defect, but not properly speaking one that could be called mentally defective. It was not right to call a child mentally defective when he had but a mental defect, any more than it was right to call a child physically defective because he had but one physical defect. A child with shyness, extreme obstinacy, etc., could not be called mentally defective, although this was a mental defect. Of primary interest to them were the children with mental defects, and not especially the mentally defectives. In 1911-1912 it was found that 53 per cent. of the children in the schools belonged to the class grouped as backward, and 37 per cent. were children who were classed as mentally defective. Professor Witmer believed that the most interesting problem the psychologist and physician had to deal with pertained to the children with mental defects. He believed too that this was not a problem for the public schools to deal with: these children belonged to institutions—they should be placed behind the walls of some institution. The child who was backward or retarded in school work by reason of some physical or mental defect was worthy of the most careful care and attention they could give in their public schools, and it was for them that special classes were established. The children with mental defects were far more numerous than children belonging to the mentally defective class. There was no child in fact but had one or more mental defect. These children who were retarded in their school work were so retarded because of certain conditions, by virtue of environment, or neglect, or by virtue of inadequate school training; when they reached adult age, or the age when they were compelled to go to work, their natural endowments were less developed than they might have been if they had had adequate training, the care that should be given every individual who suffered from retardation. A child might be sent home because he suffered from retardation; he might be excluded from the class because he was backward. He must be placed in a separate class. He believed that the work they were doing in the study of children was leading them to the employment of right methods, not only for those who stood at the bottom of the class, but for those who stood at the top as well. They believed that the child with the largest endowment of brains should receive the same careful attention as the one with less endowment. From a study of those causes producing retardation in children, the cases in which this retardation was very manifest, they could make the next step forward and study the exceptionally bright child. In the Philadelphia schools they had side by side the mentally defective child and the bright child. In order to give his listeners an idea of the child with a defect he ran over the history of a few cases.

Prof. K. Heilbronner of the University of Utrecht spoke in German of the work that was being done among these children in Germany.

**The Diagnosis of Mental Defects.**—H. H. Goddard, Ph.D., of Vineland, N. J., said that feeble-mindedness and mental deficiency could be defined as a condition of weak mentality existing from birth or early age whereby the individual was unable to compete with his fellows in the struggle for existence, and this definition was based upon practical every day tests. They were speaking of people so lacking in intelligence that they could not take their

places in working for an existence and were entirely different or unlike those Professor Witmer had described. They were not people who suffered from adenoids, or who were deaf, or who had eye defects and other things *per se.* They might have troubles the same as other human beings might have. These were the people who had physical organs as good as any of them, but they lacked mental capacity and just what caused this lack of mental capacity no one at present knew. They had families with different strains of intelligence or levels of intelligence. They had the famous families who might be traced back from generation to generation, members with a high plane of intelligence. This intelligence had been transmitted from father and mother to son and daughter. Then there were members of a family with average intelligence; they had been always of just about such an intelligence. Then they might recognize precisely in the same way a group of people with a strain of intelligence that was just too low to enable them to functionate as normal individuals in society, to enable them to compete with the rest in the struggle for existence and to live a normal decent life. It was this group of people they needed to understand and recognize and pick out. Why? If they were not picked out, if they were not recognized, they and all the rest of the people would insist upon placing on these people responsibilities which they could not bear and under which they would break down and they would do injury to their entire society and community. In other words, they would become dangerous and evil people. Every one who belonged to these strains, or the strain just below the level which marked them, was a potential criminal. Why should they recognize and diagnose these cases? Because if diagnosed early they could take care of them and save them from this life of criminality, pauperism or debauchery. How could they diagnose them? Here the difficulty was very great because in the first place they obviously were of normal appearance and in the second place it was difficult for the physician to recognize these cases because perhaps they were so accustomed to seeing people improve from various physical conditions that appeared to make them appear dull and stupid that they became optimistic and could not help feeling that because these people looked like the rest of them their condition would pass over and the members of the family would say "the doctor will take care of it." But as to the actual diagnosis of these cases, the complete and sure diagnosis could only be made by specialists or by those who had studied this problem. He said he had seen people who had this experience go into a school and look over and examine this and that child, and these people had been questioned, "who told you my dullest pupils?" That they were the dullest was proven to be true. The highest efficiency in this respect was realized by the ladies; they seemed to be able to more carefully scrutinize these people than did the men. He said he had two or three ladies at Vineland who were far ahead of him in this particular. This was one of the essentials in making a diagnosis. Dr. Goddard said he came for the purpose of telling them things, or making suggestions to them, which might be helpful. They as physicians had been given a great opportunity in this line of work. The fact that a child or an individual looked well should not be taken as indicating that he or she was all right. If an apparently normal child could not keep up with his fellows when he attended school, but fell backward, there was something wrong, and this should be inquired into. Take for instance a child with malnutrition; say he was a child nine years of age but with a mentality of a child of four or five; this showed that he was suffering from malnutrition and kept back in his work because of it. Perhaps he took tea and coffee for breakfast, dinner, and supper, and they might think this was the cause. But no. No part of the body was more resistant to starvation than the nervous system, and it was not safe to say that if they fed up the boy he would become normal and satisfactory. The point was this. When a child was brought to their attention who was two or three years behind in his work they should not let other things switch them from the conclusion that the child was feebleminded; they had no more right to withhold this diagnosis than if they were dealing with a suspected case of smallpox. It was a serious matter to make a wrong diagnosis in cases of feeble mindedness. Dr. Goddard then showed pictures to substantiate what he had said, and also charts showing the relationship of heredity, not only of the individuals, but of the family and of the ancestors as well.

**Genetic Psychology.**—Prof. Will S. Monroe, Ph.D., State Normal School, Montclair, N. J., told of what was being done with both the normal and the abnormal children. In the public schools many children passed through without being recognized as mentally defective and those in charge of such children should be trained to recognize them. A large number of children necessarily were handled, and some sort of instruction should be given the teachers to enable them to pick the abnormal from the normal. It was their purpose to point out the characteristics of the abnormal as well as the normal child. The child's mind acted differently from the grown mind, a fact that should be remembered in the study of genetic psychology. For instance, a child of six years, in his efforts at gaining information, reacted differently from a boy of ten years, and a mind of a child of ten years reacted differently from one of fourteen years. Again, a boy of ten years differed in this same respect from a girl of the same age. The development processes in the child must be recognized, both the normal and the abnormal. A second problem was how to bring the teachers face to face with abnormalities, to teach them how to deal with as well as how to diagnose the mental defectives. A great deal of trouble had been given them in the study of the borderline cases.

Charles F. Little, Medical Superintendent Letchworth Village, said that Professor Witmer seemed to be working in a field that was quite different from the one he was working in; he spoke of the special class of cases met with in public schools. In institutions at least they did not see these cases that were particularly improved because of the removal of adenoids, or the correction of some of the defects he mentioned. There certainly was an interesting field for work in the public schools where the cases could be handled without going into institutions. With regard to special classes for defectives, if the time came when public sentiment would force the parents to place their defective children in institutions, and if the time came when the State could and would raise money to establish enough institutions for the care of all the defectives, then it would be time to talk of handling these children and establishing ungraded classes. With regard to Dr. Goddard's remarks about the diagnosis of mental defects he believed the Binet test was of great assistance, and the more he used it the more successful he became. But it seemed to him that a series of tests might be arranged, tests that were quite different from the Binet tests, that would give them the same results. In the border line cases the Binet tests were the ones most used. It was not possible to make a positive diagnosis in the difficult cases except by having a first-class history and by having the case under observation for some time. The Binet tests, when applied to a child for a series of months, or one or two years, would enable one most certainly to determine whether or not the children were feeble minded.

Dr. Max G. Schlapp said he was glad to hear what Professor Witmer said about taking these children from the public schools. He did not agree with him, however, in his statement that feeble-minded individuals had organs that were physically as well as in others for in the feebleminded there were certain conditions present. First, there might be some definite lesion of the brain; there might be some destruction of the nervous system by inflammation. Here they could account for the condition. Secondly, there was another type of cases in which the brain anatomatically was not developed on account of something interfering with the formative activity of the cells in the individual as he was developing. Thirdly, there was a group of cases in which the functional activity of the nerve cells was interfered with. These conditions were caused by definite underlying lesions, and it was up to them as medical men and chemists to find out what particular conditions were producing these formative disturbances that delayed development of the central nervous system.

Dr. L. Pierce Clark agreed with Dr. Goddard that the Binet scale was our most valuable aid in determining the intellectual standard of any given case of suspected feebleminedness. All the cases of which Dr. Goddard showed pictures were so pronounced in defective mentality by "sight alone' that case records and heredity charts hardly seemed necessary. He doubted the correctness and fairness of counting all cases of feeblemindedness potential criminals. That their mental defect spelled an after life of vagabondage, unemployment, and almshouse occupancy seemed nearer the truth, but these latter social delinquencies could not be called crimes as ordinarily understood to-day. He especially commended Dr. Goddard's excellent heredity studies but thought we were far from knowing what the determinants were that even drove the 35 per cent. of heredity-free feebleminded into this condition. It seemed possible that understanding these psychic determinants might partly illumine the pathway of prevention.

# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

MEDICAL EXAMINERS OF NEW JERSEY.

*October*, 1912.

(*Concluded from page* 874.)

GYNECOLOGY.

1. Define and give findings on examination of uterine anteversion, retroflexion, retroversion, prolapse, and procidentia, and of ovaritis, salpingitis, pyosalpinx, cystocele, rectocele, and subinvolution.
2. Give symptoms of gonorrhea in the female, and conditions which may result from it.
3. Give three causes of dysmenorrhea, and treatment of each.
4. Give causes, symptoms, and pathology of ovaritis, salpingitis, metritis, and pelvic peritonitis, and give differential diagnosis between ovaritis and salpingitis.
5. Describe the clitoris, and give its function. What are adhesions of the clitoris? What symptoms may they produce, and how are they relieved?

SURGERY.

1. Give the diagnosis and method of reduction of a dislocation of the inferior maxilla.
2. Describe a transverse fracture of the patella. Give treatment.
3. Give etiology and sequelæ of suppurative middle-ear disease.
4. Give etiology, diagnosis, and treatment of septic peritonitis.
5. Give diagnosis and treatment of fracture of base of skull.
6. Give differential diagnosis between fracture of neck of humerus and dislocation of the shoulder joint.
7. Give diagnosis and treatment of a floating cartilage.
8. Where does the quadriceps extensor femoris most frequently rupture? Give symptoms and treatment.
9. Define torticollis. Give treatment.
10. What is shock and how should it be treated?

HYGIENE.

1. What is hygiene, and how does it differ from sanitation?
2. What are the most important factors in preserving health, and how are they best observed and applied?
3. Name the contagious or infectious diseases and give in detail the best methods for preventing their spread in a community.
4. Detail the most approved method of dealing with (*a*) the patient, (*b*) the premises after any or all of such diseases.
5. Name some of the conditions that predispose to or cause disease.

JURISPRUDENCE.

1. What is the object of a coroner's inquest?
2. In cases of sudden death how would you arrive at the cause thereof?
3. Where dead bodies are taken from the water how would you determine whether the person had been drowned or not?
4. In infants, how determine whether the child had been born alive?
5. How would you conduct a post-mortem examination?

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## ANSWERS.

GYNECOLOGY.

1. *Anteversion* is an anterior displacement of the uterus as a whole, the uterus is not bent upon itself; the fundus is found forward, and the cervix looks backward. The normal position is a slight anteversion.

*Retroflexion* is a posterior displacement of the uterus, in which the uterus is bent upon itself. The cervix is low in the pelvis, and the fundus in the cul-de-sac of Douglas.

*Retroversion* is a posterior displacement of the uterus, in which the uterus is not bent upon itself. The cervix is displaced toward the pubes, and the body of the uterus is in the hollow of the sacrum.

*Prolapse* is a downward displacement of the uterus as a whole; the cervix is felt just inside the vagina. A similar condition, but with the uterus protruding through the vagina, is called *Procidentia.*

*Ovaritis* is an inflammation of the ovary. The ovary is increased in size, is tender on pressure, and pressure cause a sickening sensation.

*Salpingitis* is inflammation of the fallopian tube. Both tubes are apt to be affected; the tube is oblong and generally adherent and the ovary may be palpated or distinct from the tumor; it is not usually very large, and there may be leucocytosis. Pain is present, and is made worse by pressure, examinations, etc.

*Pyosalpinx* is a pus tube, or abscess in the fallopian tube. The condition is the same as salpingitis with the addition of the presence of pus; hence chill, fever, and leucocytosis are added.

*Cystocele* is a hernia of part of the bladder into the vagina covered by the mucous membrane of the anterior vaginal wall.

*Rectocele* is a hernia of the rectum into the vagina, covered by the mucous membrane of the posterior vaginal wall.

*Subinvolution* is failure or delay on the part of the uterus to return to its normal condition after labor. The uterus is enlarged, soft, boggy, generally retroverted or prolapsed, and there may be irregular hemorrhages.

2. GONORRHEA. *Symptoms*: Pain and burning in the vulva; pain and burning on micturition; dyspareunia; yellowish or greenish discharge, in which the gonococcus can be found; the vagina is hot, red, swollen, and tender. *Possible results*: Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condylomata of vulva, abscess of Bartholin's glands.

3. *Three causes of dysmenorrhea.* (1) Pelvic congestion; this requires hot douches, glycerin tampons, and regular attention to the bowels. (2) The formation and discharge of a membrane; this requires dilatation and curettage, which may have to be repeated. (3) Malpositions of the uterus; these require reposition, the use of a pessary, breaking up of adhesions, and sometimes an operation (such as hysteropexy).

4. *Acute ovaritis* is usually secondary to salpingitis, as in gonorrhea and puerperal sepsis, but may occur as a complication of the eruptive fevers. The symptoms are pain and tenderness in the ovarian region, nausea, vomiting, rise of temperature, and rapid pulse.

*Salpingitis* is usually due to infection following labor or abortion, gonorrhea, and spread of inflammation from neighboring organs.

*Symptoms:* Pain or discomfort, made worse by pressure, examination, or defecation; or colicky pains over the tube; dysmenorrhea; increased menstrual flow; tubes are found to be dilated and swollen.

*Endometritis:* The acute form is due to the introduction of septic bacteria, and is manifested by pain, constipation, irritability of bladder, rapid pulse, rise of temperature, and a profuse discharge.

*Pelvic peritonitis* is caused by infection, and is characterized by: Intense and diffuse abdominal pain, tenderness, and distention; vomiting, constipation, elevation of the temperature (103°-104° F), small, hard, rapid and wiry pulse (120-140), and increased respiration (30-40) of a painful character are also present. The dorsal decubitus with the legs and thighs drawn up is assumed. The duration is from six to nine days and the prognosis is unfavorable.

*Pathology of ovaritis:* "The follicles are chiefly affected, but the stroma is also involved. The ovary is enlarged; the Graafian follicles swell, their contents becoming cloudy; the cells of the membrana granulosa and discus becoming degenerated, the ovum breaking down and the zona pellucida getting swollen and folded. On the surface the germ epithelium may break down. There is congestion of the vessels. Exudation takes place in the stroma; small ecchymoses may form. Pus may develop in one or more centers, and may go on to form a true abscess of the ovary. In advanced cases the ovaries may become smaller, irregular, and cirrhotic. The follicles are destroyed or filled with turbid, thick, or bloody fluid."

Of *salpingitis.* "The most important changes occur in the mucosa, but all parts of the wall are usually affected at the same time. When the peritoneum covering the tube is affected it may be a localized inflammation or part of a wider affection. It leads to bending, stricture, displacement, or to adhesion of the tube to surrounding parts. Very often the inflammation spreads to the ovary. It may close the outer end by matting the fimbriæ together. When the muscular portion of the wall is affected, it becomes thicker and hard, owing to the small-celled infiltration in it; when pus is present, small loculi may be formed throughout it. When the mucosa is affected various changes are produced. Infiltration and effusion take place

into the delicate fimbriæ and into the thin layer of submucous tissue. There is congestion of the vessels. Small hemorrhages are sometimes found. There is increased mucous secretion into the lumen, and it may contain leucocytes, shed epithelial cells intact or breaking down, and, sometimes, red blood corpuscles. The epithelial lining is lost in some parts, degenerated in others, and adhesions may occur between neighboring plicæ. Sometimes the fringes may enlarge and vegetations may form in connection with them. These appear like polypi, on transverse section. The inflammation may go on to pus formation. As a result of adhesions of the mucosa, occlusion of the tube may be brought about in one or more places. If fluid continues to be poured into the lumen, the tube gets distended and the condition of hydro- or pyosalpinx is produced. In the cases in which a slow chronic interstitial change is the main one the tube may become very hard and somewhat thickened. In advanced stages an atrophy is sometimes produced as absorption occurs. The lumen may be obliterated partly or wholly by adhesion of the walls, and unobliterated portions may give rise to small cysts."

Of *metritis*. "In acute inflammation the uterus becomes enlarged, softened, and, it may be, of doughy consistence. The walls are deeply congested in all parts, and blood extravasations may be seen in parts. Inflammatory products are exuded among the muscular bundles, and in the mucosa. If pus formation has taken place, small foci are noticed throughout the wall. The muscle is softened and often pulpy. The peritoneal surface is also inflamed. Acute metritis may lead to a chronic inflammatory condition, in which thickening and hardening of the connective tissue elements prevail; or, a chronic purulent condition may be left, abscesses being present in the uterine wall, and, sometimes, in the adjacent parametrium, tubes, and ovaries. Rarely, abscess of the wall may perforate into vagina, bladder, intestines, or abdominal walls. Sometimes rapid resolution and recovery may occur. At times death occurs from the virulence of the infection causing the inflammation." (Webster's *Diseases of Women.*)

For *differential diagnosis of ovaritis and salpingitis,* see QUESTION 1. The two conditions frequently exist together.

5. The *clitoris* is a small projection just below the mons Veneris. It is the analogue of the penis in the male, but is much smaller and is not perforated by the urethra. It is composed of two corpora cavernosa, with a glans at the anterior extremity containing erectile tissue and special genital corpuscles. The glans is covered by a prepuce. Its function is concerned with coitus and sexual pleasure.

*Adhesions of the clitoris* are constrictions which bind the prepuce of the clitoris to the glans and prevent the retraction of the prepuce. The *symptoms* are various reflex disturbances, neuroses, masturbation, or morbid sexual desires. Examination will demonstrate the adhesions and show that the prepuce cannot be readily retracted. *Treatment* consists in separation of the adhesions, under local (or general) anesthesia; the prepuce is pulled back, the glans exposed, and the adhesions broken up. Carbolated vaselin is applied, and the glans is exposed frequently to prevent readhesion.

SURGERY.

1. In *dislocation of the lower jaw,* the mouth is open and cannot be closed, the jaw protrudes, saliva dribbles from the mouth, speech and swallowing are difficult, and there is a depression in front of the ear. *Treatment:* The surgeon wraps his thumb (for protection), then presses downward and backward on the lower molar teeth: as soon as the condyle is loosened the jaw is closed by pushing up the chin. A Barton bandage is applied and worn for about fourteen days.

2. In *transverse fracture of the patella,* there will be found pain, swelling, and inability to lift the limb from the bed; the fragments are widely separated and can be moved; flexion of the leg increases the gap between the fragments. The joint should be opened to clear out the blood clot and remove the tags; the fragments may be united by wire. A posterior splint with the bringing of the fragments together by adhesive plaster has been used.

3. SUPPURATIVE MIDDLE EAR DISEASE. *Etiology:* Spread of pharyngeal catarrh, adenoids, scarlet fever, tonsillitis, diphtheria. *Complications:* Inflammation of the mastoid cells, caries, necrosis, phebitis, meningitis, abscess of brain, arthritis of temporomaxillary joint, facial paralysis, thrombosis of lateral sinus.

4. "*Septic peritonitis* may arise during the puerperium, through lymphatic infection; it may be due to infection from without by an operation or an accident; to perforation of an ulcer; to gangrene of a portion of the intestine; to rupture of an abscess into the peritoneal cavity; or to migration of microorganisms through a damaged wall of the bowel. Perforation is made manifest by a chill, shock, or rapid collapse. Gas may pass into the peritoneal cavity, and if it does so the area of liver-dullness may be lessened or abolished. Symptoms and signs of hemorrhage may arise. Diffuse septic peritonitis is announced by a very rapid pulse, which is at first wiry and later gaseous; temperature which may be at times febrile, but which is apt to be subnormal or which soon becomes so; diffused abdominal pain, general tenderness, dry tongue, delirium, persistent vomiting, constipation, and collapse. Rigidity may exist and also intestinal obstruction; often, but not invariably, there is distention. In puerperal peritonitis or septic peritonitis from operation there is often no severe pain; in perforate peritonitis there is acute pain. Patients usually die within five or six days." *Treatment:* "First the initial lesion should be got rid of as quickly as possible and with the slightest possible amount of handling. For instance, we should remove a gangrenous appendix; we should close a perforation in the bowel, etc. Flushing of the peritoneal cavity with gallons of salt solution is inadvisable. It cannot thoroughly cleanse the peritoneum; it may diffuse the infection to regions that it had not previously reached, and it may tear up adhesions. Inflammatory exudate should not be removed from the intraperitoneal structures. It is nature's method of sealing the lymph-spaces; and if we remove it we open thousands of channels, previously sealed, to the dissemination of the infection. A drainage tube should be introduced through the operation wound, and a suprapubic incision should also be made, and a drainage tube be carried through this into the pelvis. When the operation is completed, the patient should be placed in the semi-erect position, which is commonly called Fowler's position. This is done in order that the intraperitoneal fluids may gravitate away from the diaphragm, where absorption is extremely rapid, and into the pelvis, where absorption is much slower. When the patient is placed in the bed quantities of warm salt solution are passed slowly into the rectum." (Da Costa's *Surgery.*)

5. FRACTURE OF BASE OF THE SKULL. The *Signs* are those of (1) injury to the brain, (2) escape of cranial contents, (3) injury of cranial nerves. (1) *Injury to the brain* may be of the nature of concussion, compression, or laceration. (2) *Escape of cranial contents,* which may be blood, cerebrospinal fluid, or rarely brain itself. 1. *Hemorrhage* manifests itself in various situations, according to the position of the fracture. In the *anterior fossa* the bleeding may be from the nose or into the orbit, or may pass back into the pharynx, be swallowed, and subsequently vomited. The eye may be pushed forward and pulsate if the cavernous sinus be ruptured. In the *middle fossa* blood usually runs from the ears; but slight bleeding from the ear may be caused by minor injuries, such as rupture of the membrana tympani, tearing of the lining of the auditory canal, and fracture of the tympanic bone. In the *posterior fossa* a hematoma may form behind the mastoid process. 2. The escape of *cerebrospinal fluid* is a certain sign that a fracture communicates with the subdural space. It may appear in the same situations as hemorrhage, but is usually found escaping from the ear owing to fracture of the petrous bone. The fluid is limpid, specific gravity 1005, with no albumin, but containing pyrocatechin, which gives the same reaction as sugar with Fehling's solution. The amount which escapes may be small or very large, but as a rule it soon ceases. (3) *Injuries to the cranial nerves* vary according to the site of fracture. That most commonly involved is the facial, in the aqueductus Fallopii, and the paralysis may come on immediately from rupture, or after two or three weeks from the pressure of callus.

*Treatment:* The chief aim of treatment is to prevent sepsis. The ear must be mopped out with an antiseptic, and then kept covered with an antiseptic dressing, as if it were a wound. The patient must then be kept quiet, the bowels opened with a purge, and an icebag applied to the head. The diet should be low, and a return to active life not permitted for six weeks. If septic meningitis occurs the patient is bound to die. (From *Aids to Surgery.*)

6. In *fracture of the surgical neck of the humerus,* the head of the humerus will be found in the glenoid cavity, but it will not rotate with the shaft; the arm will appear shorter; and crepitus and abnormal mobility will be elicited unless there is impaction.

In *dislocation of the shoulder joint*, the glenoid cavity will be empty, and the head of the bone will be found in an abnormal position; the arm will appear longer; there will be no crepitus, and no abnormal mobility.

7. *Floating cartilages* are diagnosed by synovitis, recurrent pain, and fixation of the joint; sometimes the cartilage can be felt; the locking of the joint persists so long as the foreign body is between the bones; the *x*-ray may aid in the diagnosis. *Treatment:* The foreign body should be removed under the most careful asepsis. The locking of the joint may be relieved by forced flexion and sudden extension.

8. The quadriceps extensor generally ruptures just above the patella. The symptoms are severe pain, inability to stand, walk or extend the leg; a gap may be felt above the patella. *Treatment:* Incision, and suture of the divided ends of the muscle, under aseptic precautions. Rest is necessary, and when union has occurred massage and passive motion are indicated.

9. *Torticollis* is a contraction of the sternomastoid or other cervical muscles producing deviation of the neck; the head is drawn down towards the shoulder, and the face turned upward toward the sound side. *Treatment:* Remove the cause, treat any neurosis, give antispasmodics; stretch or cut the spinal accessory nerve or posterior cervical nerves; massage; tenotomy of the sternomastoid.

10. *Shock* is the name given to a sudden and general depression of the vital powers due to some strong stimulation (such as injury or emotion) acting on the vital centers in the medulla, and producing vasomotor paralysis.

*Treatment of shock:* Place the patient in the recumbent position, with the head low, apply warmth to the body, administer a stimulant, and give a hot saline infusion; morphine, hypodermically, may be necessary for the relief of pain. Adrenalin solution is administered into the arterial system.

HYGIENE.

1. *Hygiene* is the science and art of all that concerns the preservation, promotion, and improvement of health, and the prevention of disease. *Sanitation* is that branch of hygiene which is concerned with the suppression or removal of the predisposing causes of disease; it is the practical side of a part of the subject of hygiene.

2. Health is best preserved by: Proper habits of cleanliness; regulation of diet; avoidance of all excesses; protection by suitable clothing and habitations; adequate exercise, work, and rest. Further, the proper authorities should be supported in their efforts to promote health; communicable diseases should be reported; quarantine observed; and instruction on health lines disseminated and read.

3. An *infectious* disease is one that is caused by a known microorganism; as typhoid, tuberculosis.

A *contagious* disease was formerly understood as one that was communicated by direct personal contact, as by touch, or exhalations from breath or skin; as measles, smallpox.

*Communicable diseases* are: Smallpox, gonorrhea, cerebrospinal meningitis, tuberculosis, leprosy, tetanus, diphtheria, Asiatic cholera, typhoid, bubonic plague, dysentery, malaria, syphilis, mumps, yellow fever, measles, scarlet fever, chickenpox, rubella, rheumatism, trachoma.

To *prevent their spread:* They should be reported to the health authorities; adequate isolation and quarantine (when necessary) should be enforced; proper prophylactic measures (as vaccination) should be ordered; children, from houses where there is such disease, should not be allowed to mingle with other children; proper disposal should be made of sputum and excreta; details for each disease can be learned from special manuals on the subject.

4. "When the patient has recovered from an infectious disease, he should be given a general bath with soap and water. In addition to this, he may be bathed with chlorinated soda solution, and in the exanthemata it may be advisable to anoint his body again unless all desquamation has ceased. After a general bath has been given the patient may be allowed to mingle with the well. In most localities the convalescent from certain diseases, especially smallpox, is washed with 1:2000 bichloride of mercury solution, clothed with clean clothing, and then transferred to a disinfected room.

"The clothing and bedding which are to be disinfected by means of steam should be carefully wrapped in cloths saturated with 1 per cent. carbolic solution, placed in a wagon, and taken to the disinfecting station. After the bed has been stripped, all refuse matter, paper, and articles of little value are wrapped in cloths saturated with carbolic acid and burned in a stove or furnace. The floor, doors, windows, furniture, and the walls for a distance of 1½ meters from the floor should be washed with 5 per cent. carbolic acid solution. The walls and ceiling of the room should subsequently be sprayed with 1:1000 bichloride of mercury solution. If the walls are papered, it is advisable to remove carefully the paper before beginning the disinfection. The room is then closed as tightly as possible and disinfected by means of formaldehyde." (Bergey's *Hygiene.*)

5. *Predisposing causes of disease:* Age, sex, heredity, temperament, idiosyncrasy, diathesis, race, hygienic conditions, occupation, climate, habits (particularly with regard to food, alcohol, excesses, exposure), and present condition of health and vitality.

JURISPRUDENCE.

1. The object of a coroner's inquest is to discover the cause of death in every case where such cause is unknown, or where the circumstances attending such death are suspicious.

2. Unless I had been attending the patient prior to his death, and knew him to be suffering from a diseased condition which was likely to end in sudden death, I should advise a postmortem examination. In any case, the coroner might order such an examination.

3. In *death by drowning:* The surface is pallid, the face appears tranquil, the eyes and mouth being partly open. The skin often has the appearance known as gooseskin, and, if the body has lain upward of twelve hours in the water, that of the hands and the feet is sodden by imbibition. The most important external sign is the presence on the mouth and nostrils of a fine froth (possibly blood stained) composed of air, mucus, and the medium in which drowning took place; if the body remains three or four days in water the froth disappears. Exceptionally, fragments of weeds or other small objects may be found tightly grasped in the hands. On opening the thorax, the lungs, gray in color, with reddish staining, are seen to be very voluminous, a condition known as ballooning, partly due to infiltration of the lung tissue with some of the medium in which drowning took place, and partly to true edema. The lung substance is inelastic and pits on pressure. On section, fluid and froth resembling that found on the lips exude from the divided air passages. Minute subpleural hemorrhages are not infrequently present, and the pleural cavities may contain fluid. The stomach often contains water or other liquid which was involuntarily swallowed during attempts at respiration. Occasionally some of this fluid is forced by vital action into the intestines. With one exception, the remaining appearances are those met with after death from asphyxia. The exception is constituted by the blood, which is not only dark colored and fluid, as is usual after death from asphyxia, but is also diluted by the imbibition of water from the stomach and lungs. (From Quain's *Dictionary of Medicine.*)

4. If respiration has taken place, its lungs will float on being put into water; if respiration has not taken place, the lungs will sink. Further, the lungs before respiration are situated at the back of the thorax and do not fill the cavity; whereas, after respiration they fill the whole cavity.

5. Reference must be made to a large textbook on Pathology or Medical Jurisprudence: the answer is too long for insertion here.

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**Typhoid Pleurisy.**—Luciano Meoni reports four cases of this condition and reviews the literature of the subject. Pleurisy is not a rare complication of typhoid fever. The serous form may be developed early or late in this disease. The hemorrhagic variety is occasionlly found. The purulent form is not uncommon; the pus may contain the bacillus of Eberth in a pure state or in association with other microorganisms. The dry and the serous forms of typhoid pleurisy run a brief course and result in recovery, while the purulent form is protracted and generally terminates with a fatal outcome. The author describes a simple non-surgical method of treatment which he employed successfully in one of his purulent cases. After aspiration of the pus he washed out the pleural cavity with a one to one thousand aqueous solution of salicylic acid. This procedure was repeated later on two occasions, as the purulent exudate formed again. The patient made a complete recovery.—*Rivista Critica di Clinica Medica.*

**The Title of "Doctor."**—The Royal College of Physicians of London now permits its licentiates to style themselves "doctor" on doorplates, visiting cards, etc. This is only a courtesy or professional title as distinguished from "doctor of medicine," which is an academic one.—*The Lancet.*

## Books Received.

*The* Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading; but this is with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

The Spark of Life. By Margaret W. Morley. Cloth; 62 pages; price 25c. net. Fleming H. Revell Company, New York, Chicago, Toronto, London, and Edinburgh.

Die Schönheitsflege. By Dr. Orlowski. Illustrated; paper; 132 pages; price 3 M. Curt Kabitzsch, Würzburg.

Clinical Laboratory Methods. By Roger Sylvester Morris, A.B., M.D. Cloth; illustrated; 343 pages. D. Appleton & Company, New York.

Appendicitis. By John B. Deaver, M.D., Sc.D., LL.D. Fourth Edition. Illustrated; price $4.00 net; cloth; 379 pages. P. Blakiston's Son & Company, Philadelphia.

Lang's German-English Dictionary. By Milton K. Meyers, M. D. Second Edition. Cloth; price $5.00 net; 564 pages. P. Blakiston's Son & Company.

Proceedings of the Royal Society of Medicine. Volume 6, No. 5, with supplement; paper; illustrated; price 7/1 net. Longmans, Green & Company.

Archivio di Ostetricia e Ginecologia Diretto dal Prof. Giovanni Miranda. Series 2, Vol. III; 1911-1912; paper; illustrated; 1049 pages; Napoli, Tipografia Cav. Aurelio Tocco.

Flatulence and Shock. By F. G. Crookshank, M.D., M.R.C.P. Cloth; 47 pages; price $1.00 net. Paul B. Hoeber.

Die Wirkungen von Arzneimittlen und Giften auf das Auge. By Dr. L. Lewin and Dr. H. Guillery. Paper; illustrated; Vol. I; 736 pages. Vol. II; 947 pages. August Hirschwald. Price 38 M.

Private Duty Nursing. By Katharine De Witt, R.N. Cloth; price $1.50 net; pages 244. J. B. Lippincott Company, Philadelphia and London.

The Triumph of American Medicine in the Construction of the Panama Canal. By J. Ewing Mears, M.D., LL.D. Third Edition. Illustrated; cloth; 46 pages. William J. Dornan, Philadelphia.

Physiologie des Menschen und der Säugethiere. By Dr. Rene due Bois-Reymond. Paper; illustrated; price 14 M.; 647 pages. August Hirschwald, Berlin.

Sviluppo delle Cavità Accessorie delle Fosse Nasali. Prof. Luigi Vittorio Nicolai. 28 plates. Archivio Italiano de Otologie, Rinologia e Lamigologia, 1913.

Nervous and Mental Diseases. By Charles S. Potts, M.D. Cloth; illustrated. Third Edition. 610 pages; Lea and Febiger, Philadelphia and New York.

Disease in Milk—the Remedy, Pasteurization. By Lina Gutherz Straus. Paper; illustrated; 221 pages; New York.

Die Sanitätsausrustung des Hefres im Kriege. By Dr. W. Nieües. Illustrated; paper; price 24 M.; 527 pages. August Hirschwald, Berlin.

Manuel de Gymnastique Medicale et Orthopedique Suédoise. Par le Docteur A. Wide. Traduit par le Docteur G. Falk. Paper; illustrated; 310 pages. Maison d'Edition A. De Boeck, Bruxelles.

Gynecological Operations. By Henri Hartmann. Cloth; illustrated; price $7.00 net; 536 pages. P. Blakiston's Son & Company.

Studies from the Rockefeller Institute for Medical Research. Reprints Vol. XVI. Paper; illustrated. The Rockefeller Institute for Medical Research, New York.

Systematic Case-Taking. By Henry Lawrence McKisack. Cloth; price $1.50 net; 166 pages; illustrated. Paul B. Hoeber, New York.

Bovine Tuberculosis and Its Control. By Veranus Alva Moore, B.S., M.D., V.M.D. Cloth; illustrated; price $2.00 net; 134 pages. Carpenter & Company, Ithaca, New York.

Der Klinische Blutdruck. By Olaf Schell. Illustrated; paper; 174 pages. In kommission bei Jacob Dybwad, Kristiania.

Lehrbuch der Militarhygiene. Vol. V. Price 10 M.; paper; 600 pages; August Hirschwald, Berlin.

Die Angiomatose der Retina. By A. Vossius. Part 1; paper; 32 pages; price 1 M. Carl Marhold, Halle a S.

Ueber Herpes Iridis und Adere Seltenere Herpetische Augenerkrankungen. Part 2. By Dr. W. Gilbert. Paper; 25 pages; price 1 M. Carl Marhold, Halle a S.

Ueber Traumatische Linsenluxation. By Dr. Hermann Davids. Part 3. Paper; price 1 M.; 32 pages. Carl Marhold, Halle a S.

## Miscellany.

Plague Banners.—R. Crawfurd states that the custom of carrying sacred pictures in penitential processions, in times of pestilence, is one of some antiquity. If one may trust the tradition of the Church, which Jacobus de Voragine, Archbishop of Genoa, embodied in his Legenda Aurea at the end of the thirteenth century, it is at least as old as the time of Gregory the Great. Writing of that fierce outbreak of bubonic plague in Rome in 590 A.D., in which the pandemic of fifty years' duration discharged all its expiring virulence, the Archbishop says: "And because the mortality ceased not, he ordained a procession, in which he did do bear an image of our Lady, which, as is said, S. Luke the Evangelist made, which was a good painter, he had carved and painted it after the likeness of the glorious Virgin Mary. And anon the mortality ceased, and the air became pure and clear, and about the image was heard a voice of angels that sung the anthem, "Regina Coeli." At the same time S. Gregory saw an angel upon a castle, which made clean a sword all bloody, and put it into the sheath, and thereby S. Gregory understood that the pestilence of this mortality was passed, and after that it was called the Castle Angel (Castel S. Angelo)." The plague banners, or *gonfaloni* of Perugia, serve to show a lineage far older than the epoch of the Perugian School of Painting, and one that extends also beyond the boundaries of Umbria. It is only in a limited sense that they can be regarded as exclusive products of the Umbrian School, and particularly of its Perugian branch. Indeed, the two most famous had actually a Tuscan *provenance*. It so happened that the most fertile period of Perugian painting, in the latter half of the fifteenth century, coincided with the devastation of Perugia by a succession of epidemics of plague; and at each fresh outburst the painters of Perugia were called upon to produce these tributes of popular devotion. Before these suppliant banners marched the priesthood in their robes, behind them followed a penitent people, striking their breasts and wailing aloud "Misericordia." The remedy was well adapted to their sufferings, for these processions of penitents traversing the city and following banners that displayed the figure of the Redeemer, or the Madonna, or some plague saint, produced in their souls such a degree of spiritual exaltation as made despondency impossible. Men gazed on them as they gazed on the Brazen Serpent that Moses set up in the wilderness to stay the pestilence. The greatest of all the plague banners was destined to be also the last; Raphael's Sistine Madonna, in which the Madonna and Child are attended by S. Sixtus and S. Barbara, was painted during an epidemic of plague for the Black Friars of S. Sisto at Piacenza. No record exists that it was ever actually used for the purpose for which it was painted. Bonfigli, in the spirit of Phidias, had painted Mary the Queen of Heaven. Raphael, in the spirit of Praxiteles, had painted Mary the Mother of God. The people wanted a queen, and Raphael gave them a peasant woman. They could not see, as Raphael saw, in womanhood the embodiment of gentleness spiritualizing the brute in man. They could not see in motherhood the vision of willing suffering transfigured to joy. It was this reunion of Art with Nature that dethroned the plague banner.—*Proceedings of the Royal Society of Medicine*, February, 1913.

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## Original Articles.

### THE CLINICAL EVIDENCE OF LYMPHURIA.*

By HEINRICH STERN, M.D.,

NEW YORK.

THERE are many cases of albuminuria, preeminently those designated as postural, cyclic, adolescent, and compensatory, in which a renal lesion may positively be excluded.† The query now arises: is the albumin in these conditions really derived from the serum and does it filter through the kidneys? In some future communications I shall try to give a detailed answer to this entire question; on this occasion I shall content myself with answering its first half.

There is abundant proof that in a certain proportion of instances of these forms of albuminuria the proteid body has reached some part of the urinary tract through the numerous lymph channels communicating with it, and that it is lymph-albumin and not serum-albumin to which the albuminuric phenomenon must be ascribed, or, in other words, that notwithstanding their identical chemical structure, the proteid substance in lymphuria has never formed a constituent of the blood plasma.

My attention was first drawn to the possibility of the occurrence of lymph in the urine some years ago when examining a number of specimens of chylous urine derived from one person. After exercise, this urine generally showed a slight milky turbescence and contained decidedly more albuminous than fatty material. The specimens obtained after from eight to ten hours' rest in bed were invariably clear and exhibited either no fat or proteid at all, or but in minute traces only. This concurrence of fat and proteid excretion, the synchronous appearance and disappearance of these substances in and from the urine, compelled me to assume that they resulted from the self-same cause, *i.e.* the admixture of chyle or lymph with the urine.

Although we are wont to differentiate between chyle and lymph, no discrepancy of this sort exists in the fasting animal. It is only after ingestion of food that the chyle differs from the lymph on account of its abundance of minutely divided fat particles. On the other hand, the lymph may occasionally become so rich in fat as to resemble chyle. Clinically, therefore, chyle and lymph are identical, but I shall designate the presence in the urine of either when rich in albuminous material as lymphuria, especially when accompanied by a comparatively large amount of young leucocytes. The quantity of albumin contained in lymph varies between three and four per cent., that is, it occurs in about the same proportion as in the blood plasma. The lymph of the liver is especially rich in albumin. Lymph-albumin is chemically not distinguishable from serum albumin. Other proteids, however, like globulin and fibrinogen, exist in the lymph in markedly smaller proportions than in the blood. Inasmuch as no serum-albuminuria ensues without a concomitant globulinuria (though the ratio of the globulin to the serum albumin is not a definite one) and the globulin excretion in lymphuria is a widely divergent and always negligible factor, the former may be recognized by the identification of the globulin and the determination of its percentage-rate.

The number of erythrocytes contained in lymph is insignificant, and there are practically no red cells to be found in a weak dilution of lymph, as in lymphuria. The leucocytes, on the other hand, always occur in the lymph in larger numbers than in the blood. The leucocyte content, however, fluctuates greatly. At times, especially some hours after the intake of food, it may attain four or five times the figure of the blood leucocytes. It is evident that the excretion of lymph-albumin cannot ensue without the simultaneous excretion of the leucocytic lymph elements. Lymphuria, therefore, is always characterized by the presence of lymphocytes, that is, clinically speaking, of well-constituted leucocytes, or of "pus corpuscles," as they are often wrongly styled. Genuine pus corpuscles are old or deteriorated leucocytes, and are never met with in the urine unless accompanied by a sufficient number of form elements indicating destructive changes in some part of the genito-urinary system. In the condition looked upon by me as simple lymphuria, evidences of an inflammatory process in the urogenital tract are entirely lacking. It is feasible, though, that certain lymphuric states may arise as a result or complication of organic disease in the urinary apparatus. The recognition of such an eventuality from the microscopical standpoint alone would, of course, be very difficult. When such complications are suspected the globulin determination must be resorted to. Generally speaking, the number of lymphocytes in a urine corresponds to its content of lymph-albumin; in other words, the greater the ratio of the cellular elements of the lymph the more intense is the albuminuria.

While non-infectious chyluria, or even lipuria in the narrower sense, is a rare condition, simple lymphuria appears to be a comparatively frequent phenomenon. None of the theories thus far advanced to explain the cause and mechanism of the juvenile albuminurias are really satisfactory. They all assume without giving any proof whatever that the albumin must of necessity have been derived from the blood, but they are all in accord that the kidneys are not in the least affected, that the

*Read before the Medical Association of the Greater City of New York, March 17, 1913.

†Stern, Heinrich: Article on Albuminuria in "Reference Handbook of the Medical Sciences," 1913.

phenomenon is of an intermittent character, and that it permits of a favorable prognosis. Recent investigations concerning the renal lymph channels have demonstrated their large number and intimate connection with the uriniferous tubules. Besides, the lymph vessels in the mucosa of the ureters and bladder communicate with the outer epithelial layers of these organs, and may readily transmit their contents to the urine. Thus, the anatomical relations, the least to say, do not avert the direct excretion of lymph into the already formed urine.

The reason now why not every individual exhibits a lymphuria is that the functional activity of his intestinal lymphatic system is not interfered with, the cause of the lymphuria resolving itself into one of pathological physiology. Overfilled intestinal lymphatics exhibiting high tension within are without doubt the direct forerunners of the lymphuria. It may be a localized or general intestinal atony and its consequences, or certain postural conditions, a compression, torsion or kink of one of the larger lymph vessels, that stands at the foundation of the lymph stasis. The lymph which cannot flow through the larger vessels slowly forces its bulk through narrow and tortuous collateral channels, and thus a portion of it will eventually be excreted into some part of the urinary tract. A patent communicating channel admitting clinically demonstrable amounts of lymph once established, the lymphuria may become a more or less regular phenomenon even when its original causative factors have ceased to exist.

The excretion of lymph into and with the urine forms only a certain, as yet undeterminable proportion of the juvenile albuminurias. However, it occurs much more frequently than the uninitiated may surmise.

The purpose of this preliminary sketch is to put lymphuria* on a clinically demonstrable basis, maintaining: First, that serum-albuminuria concurs with its inevitable globulinuria; second, that there is no or but a negligible globulinuria associated with lymphuria; third, that lymphuria occurs without any evidence of renal damage; fourth, that an intermittent juvenile albuminuria without demonstrable inflammatory products but exhibiting more or less numerous well-constituted lymphocytes, points to the presence of lymph in the urine. When in addition to the chemico-microscopical findings the patient is affected with intestinal disease or habitual constipation; when he shows evidences of a lymph stasis, enlarged tonsils, much adenoid tissue and palpable lymph nodules; and when he is anemic, easily exhausted, and averse to bodily exercise, a diagnosis of lymphuria is justified.

*It was Quincke ("Krankheiten d. Lymphgefässe" in Ziemssens Handbuch d. spez. Pathol. u. Therapie, First Ed., Vol. VI., p. 624, and *Münchener med. Wochenschr.*, June 18, 1912) who, in a rather tentative and academic manner first drew attention to the possibility of a urinary lymph excretion.

250 West Seventy-third Street.

**Action of Suprarenal Extract upon the Respiration.**—F. Pentimalli has found that the intravenous injection of suprarenal extract into rabbits causes a diminution in the frequency and depth of respiration, but direct application of this substance to the nervous centers has no influence upon the respiratory function. The explanation of this difference of action is the following: The effect upon breathing is due to anemia of the respiratory center resulting from vasoconstriction. Direct application of the suprarenal extract to the medulla oblongata does not, however, produce a degree of anemia equal to that resulting from the intravenous injection.—*Archivio per le Scienze Mediche.*

## COLON BACILLUS INFECTION OF THE KIDNEY.*

By WINFIELD AYRES, M.D.,

NEW YORK.

Recent research has demonstrated that very many pathological conditions of the abdominal viscera are directly due to infection by colon bacilli. Were we to consider these infections only, one might be led to believe that such inflammations were due to contiguity, but colon bacillus infections occur in other parts of the body and are unquestionably of hematogenous origin and we will have to conclude that the colon bacillus is like all other germs we have to deal with, and infection by this organism is through the blood in nearly all cases. Especially is this so in regard to the kidney which besides its true capsule has in addition its fatty capsule as a wall against infection by contiguity with the colon.

Predisposing causes for colon bacillus infection of the kidney are injury, congestion of the kidney, and preexisting inflammation. Under the first we find direct or indirect trauma. One of my cases occurred in a boxing instructor who was accustomed to allow his pupils to strike him repeatedly on the left side. Another had fallen a short distance, striking her left side on the back of a chair. Under congestion we may class those cases which follow confinement, operation on the pelvic organs, and renal calculus. Third, the colon bacillus is sometimes engrafted on some other infection of the kidney.

Miss H. was referred to me in January, 1910, by Dr. Ten Broeck of La Porte. She had consulted him in September, 1909, and he had found a colon bacillus infection of her left kidney. He treated her by pelvic lavage and vaccines until January, 1910, and then, though he did not consider her absolutely cured, advised her to go to work and come to me for treatment. On examination I could find no trace of colon bacilli, but did find acid-fast bacilli. Of course there is a question whether the original infection was tubercle or colon bacillus, but from the examination and subsequent course of the disease it seemed hardly probable that a tuberculous process so chronic in character could have existed so short a time and in my opinion the colon bacillus was engrafted on a tuberculous infection and covered it for the time being so that when she first consulted Dr. Ten Broeck no evidence of tuberculous infection could be found. In another case, a young man came to the Post-Graduate Dispensary suffering from gonococci infection of the right renal pelvis. (Gram-negative intracellular diplococci were found in a specimen of urine taken by ureteral catheter from his right kidney, but no culture was made.) He was at once sent to bed in the hospital and hot local applications were applied over the affected kidney and he was given urinary antiseptics. Five days later he developed pyohydronephrosis and when I opened the kidney the characteristic odor of the colon bacillus was encountered. Gram-negative bacilli, but no diplococci were found in the pus. And fourth, we encounter some cases in which no predisposing cause can be found.

Primary colon bacillus infection of the kidney is usually ushered in with a slight chill or chilly sensations and the fever is not as a rule high. There may or may not be pain in the region of the kidney. Usually the only symptom complained of is great

*Read before the Medical Association of the Greater City of New York, March 17, 1913.

irritability of the bladder. Slight chills occur at irregular intervals and the fever fluctuates between 99 and 102, indicating a low grade septic infection, but in the more severe forms the temperature may go as high as 106 and be accompanied by delirium. Very rarely does spontaneous recovery occur, but if the condition is not recognized it tends to persist indefinitely with partial or complete destruction of the kidney. In other cases we find a calculus partly blocking the ureter at the pelvis and we get enormous collections of pus. Mrs. T., seen four years ago, had a very large tumor on the left side which simulated an enlarged spleen. The ureteral catheter drew off pure pus and when the kidney was opened fully 16 ounces of pus was found in the pelvis. It is a peculiar phenomenon that only very rarely is there the characteristic odor to the voided urine, but when the kidney is opened this odor is often encountered.

Diagnosis must be made by culture, as our old ideas that the colon bacillus is easily recognized by the microscope have been proven wrong. Given a patient with subjective symptoms of cystitis, pus in the urine, and running a septic temperature, the kidney should be the first organ suspected. The patient's urine must be examined microscopically and if Gram-negative bacilli are found a culture should be made. Palpation of the kidney will often reveal an enlargement, and often the swelling is so slight as to be imperceptible to touch. A radiograph is sometimes of value, but usually a kidney which is so little enlarged as to be undetected by palpation will show nothing on the plate. It must be remembered that inflammation of the internal genitals, both male and female, when associated with cystitis, often causes symptoms simulating infection of the kidney. Neither may we overlook the fact that a patient suffering from inflammation of the bladder may have some cause outside the urinary tract which is causing the fever. And on the other hand we may have pyonephrosis at the same time that we have malaria, typhoid, etc. It is a well established fact that in any case of persistent pyuria the kidneys must be investigated. Catheterization of the ureters is the only method of making a positive diagnosis of renal pyuria unless the urine issuing from the affected side be very cloudy. Observation of the ureteral orifices leaves one often in doubt whether the urinary jet is cloudy or not; also a phosphaturia may give the impression of renal pyuria. Microscopic examination of the collection from each side is the only criterion, and should pus and Gram-negative bacilli be found, a culture is made to demonstrate positively the nature of the infection.

As soon as it is suspected that one or both kidneys are inflamed, the patient should be kept in bed and hot applications made over the affected side. Hexamethylenamin is our main reliance as a urinary antiseptic and it must be pushed until free formaldehyde is detected in the urine or until 100 or 120 grains are given in 24 hours. If under this dosage no formaldehyde can be detected in the urine, the drug is stopped because, though it is found in the urine, it has no germicidal action whatever. It has been found that in some patients formaldehyde can be detected when only 7.5 grains have been taken, while in others very much larger doses are required before any trace of the gas shows. This will explain why we sometimes see great irritability of the urinary organs from small doses and the next patient is able to take the highest dosage with no irritation. Fortunately when we are giving the large dosage, formaldehyde appears in the urine gradually and there is no sudden breaking down of the full amount given otherwise we would have intense poisoning by formaldehyde.

The Hehner test for formaldehyde does not distinguish it from hexamethylenamin, but Burnam has developed such a test, as follows: "Add to the suspected fluid three drops of a five-tenths per cent. aqueous solution of phenylhydrazine hydrochloride and then three drops of a five per cent. aqueous solution of sodium nitroprusside, then an excess of a saturated aqueous solution of sodium hydroxide. When formaldehyde is present in a solution of 1 to 20,000 or stronger, there follows an intense blue color which gradually changes to green and then after a few minutes to brown." Here we have a test which guides us in determining the amount of hexamethylenamin to give, and also tells us whether there is any use in continuing the drug. Burnam in his tests showed that in certain cases free formaldehyde could not be found in the urine until very large doses were given and in other cases it was not found at any time during its administration. And he also proved when it was not broken up, hexamethylenamin could be given in enormous doses without the slightest irritation or benefit. He also found that it was broken up in an alkaline almost as well as in an acid urine.

The method of giving hexamethylenamin is to begin with 7.5 grains t.i.d., each day testing for formaldehyde, and, until it is found, increasing the dosage of medicine rapidly up to 100 or 120 grains a day. If formaldehyde is not detected in the urine when the maximum dose is reached the drug should be stopped and some other urinary antiseptic—sodium benzoate or salol—tried. A peculiar phenomenon has been noted in the administration of hexamethylenamin, namely, when it is given in full doses and the urinary examination has shown a fairly large percentage of formaldehyde, though there may have been no appreciable benefit from its administration, yet when the medicine is stopped all symptoms at once subside in a small number of cases.

Colon bacillus vaccines have been used successfully by a number of observers, but I have never seen a case in which I thought they were indicated. Rarely is colon bacillus infection of the kidney of an acute type and therefore early operation is not often demanded. Two weeks or more should be devoted to an attempt to overcome the inflammation by the methods described before any surgical interference is considered. Having failed in our palliative methods the ureters are to be catheterized to determine the condition of both kidneys. Careful examination should be made to find if there is residual urine in the pelvis of the diseased kidney. After sufficient urine has been collected for observation the pelvis of the affected kidney should be flushed gently with hot boric acid solution until the return flow is fairly clear. If there are no abscesses in the parenchyma of the kidney, this simple wash will usually reduce the size of the kidney to a marked degree and the fever and subjective symptoms will subside. Provided there is good drainage from the pelvis, such a case will entirely recover under pelvic lavage. On the other hand, if we find residual urine in the renal pelvis, though the kidney may reduce in size and all subjective symptoms disappear, the patient will never be free of pyuria until the kidney has been removed. In the writer's opinion it makes very little difference what antiseptic is

used, the benefit derived being the mechanical action of dilating and stimulating the ureter by the passage of the ureteral catheter, cleansing the renal pelvis of the products of inflammation, and the benefit of a hot douch bathing the pyramids of the kidney. As a matter of routine boric acid is used for the tentative wash and if it is determined to continue lavage, silver nitrate, in mild solution, is used at later sittings. Koll, of Chicago, claims specific anti-colon-bacillus action from a 2 per cent. solution of liquor plumbi acetatis.

Should the onset of infection be severe, or should the tentative lavage fail to benefit the patient, nephrotomy is indicated and when the kidney is exposed the surgeon will then have to decide whether nephrectomy or nephrostomy is to be done. In all those cases in which the renal pelvis does not drain properly nephrectomy is indicated unless a plastic operation can be done on the upper extremity of the ureter. If for any reason nephrectomy is contraindicated in the latter type of cases, pelvic lavage once or twice a week will sufficiently clean the renal pelvis as to keep the patient comfortable.

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## PROSTITUTION IN NEW YORK CITY;

### A STUDY IN SOCIAL HYGIENE.

By DOUGLAS C. McMURTRIE,

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The question of prostitution in New York City, its limitation, regulation, or suppression, has lately received considerable attention from both the medical circles and the laity. The metropolis of the country, the city had developed in response to, and perhaps in excess of, the demand, a great system of organized vice, the method of dealing with which became of the greatest importance to the health and welfare of the community. Several organizations had enlisted in an effort to cope with the situation but there was lacking a thorough and comprehensive survey of prostitution in the municipality. Other cities had faced the matter, and made such surveys, as for instance Chicago, Minneapolis, and Syracuse, but New York had not been studied from the scientific viewpoint.

During the first half of the year 1910 a Special Grand Jury investigated the so-called "white slave traffic" in the vicinity of New York, and one of the recommendations made on the termination of the work was that there should be appointed a public commission for the purpose of studying the social evil. The foreman of the jury, Mr. John D. Rockefeller, Jr., after conference with various authorities, decided that a private permanent bureau might accomplish the most good. For this reason he founded the Bureau of Social Hygiene. One of the first acts of this bureau was the establishment of a Laboratory of Social Hygiene in connection with the New York State Reformatory for Women at Bedford Hills, N. Y., under the direction of Miss Katharine Bement Davis. It is proposed here to study from the physical, mental, social, and moral sides each person committed to the reformatory, with the aim of establishing improved methods of treatment.

Before starting further work the bureau very wisely decided that the first move necessary was a careful study of conditions both at home and abroad so that full advantage might be had of past experience. In January, 1912, the bureau engaged Mr. George J. Kneeland, who had previously conducted the investigations of the Chicago Vice Commission. Mr. Kneeland and a corps of assistants were directed to make a thorough and comprehensive study of the conditions of prostitution in New York City, and the findings* of this survey have just been presented. Mr. Abraham Flexner has made a study of conditions and methods of dealing with prostitution in the leading cities of Europe, and Mr. Raymond B. Fosdick is studying police systems in Europe. Reports on these studies will be made later.

The subject matter† of the first study is of sufficient interest to justify the consideration of the findings in some detail. The picture of prostitution in New York City as presented is faithful and well drawn, and it will be noted that the newer forms of prostitution are adequately described. In this connection it may be well to recall that the organized house of prostitution or brothel is no longer the exclusive manifestation of public vice. With the exigencies of varying methods of police control, the crusades of reformers, and the rise of public opinion, a large proportion of the business of prostitution has been diverted from this more or less flagrant channel into the more obscure but insidious private apartment. In this metamorphosis the telephone has played an important part. The *café chantant* and the vicious restaurant with its cabaret show have also come to play leading rôles in the system. Prostitution also exists at the present time in many different sections of the city and in many instances has honeycombed whole residence districts.

Vice Resorts.—In the report in question places in which the actual business of prostitution is carried on are designated as vice resorts. The most prominent types are the so-called parlor house or brothel (the standard house of prostitution), the furnished room house, the disorderly hotel (the two latter have generally been described as assignation houses), and the massage parlor.

The parlor house or brothel is defined by the report as a building used exclusively for prostitution. "It derives its name from the fact that its inmates gather in the parlor to receive their guests. There is, however, an exception to the definition, inasmuch as some parlor houses in New York City are situated on the upper floors of buildings the ground floors of which are used for legitimate business enterprises." The investigation lasted from January 24, 1912, to November 15, 1912, and 142 parlor houses were visited in Manhattan, to which borough the study was limited. Although not absolutely complete, this number is thought to approximate the total. Of these 20 were commonly known as fifty-cent houses, 80 as one-dollar houses, 6 as two-dollar houses, and 34 as five-and ten-dollar houses. The prices charged in the remaining two houses were unknown.

The sanitary conditions in the cheaper houses were found extremely bad. "For instance, the fifty-cent houses on the lower East Side are described as being practically unfit for human habitation. The rooms are dirty, the loose and creaking floors are covered with matting which is gradually rotting away, the ceilings are low, the windows small, the

*"Commercialized Prostitution in New York City." By George J. Kneeland, with a supplementary chapter by Katharine Bement Davis and an introduction by John D. Rockefeller, Jr. Publications of the Bureau of Social Hygiene, New York, The Century Co., 1913.

†It is to be hoped that future volumes will be improved in mechanical production, the style of the present one leaving much to be desired.

air heavy and filled with foul odors. The sanitary conditions in the majority of the one-dollar houses on the west side streets between Sixth and Seventh Avenues are hardly less objectionable. No attempt is made to keep the houses clean. The floors are rotten and filthy; they sag as one walks across them. The small bedrooms are damp and unventilated; the atmosphere is heavy with odors of tobacco and perfumes, mingled with the fumes of medicine and cheap disinfectants." Needless to say such conditions do not augur well for sexual hygiene.

Recently publicity regarding the dangers of venereal disease has had its influence on the keepers of the houses who were found alive to the importance of convincing guests regarding the freedom of the inmates from infection. In practically all the houses the investigators were told that the girls had in their possession medical certificates signed by physicians stating that the subject had been examined and was free from venereal disease. In many instances the "physician" was said to come once a week. At such times he makes a hurried and superficial examination for which he receives a fee of one dollar, half of which he returns to the keeper of the house. It is needless to comment on the value of such certificates as might be given, from the standpoint of either ethical integrity or diagnostic certainty. Interesting light will be thrown on this latter phase in a later section of this article dealing with venereal diseases.

Another type of vice resort is classified in the present report under the heading "tenement houses." This is a technical definition for what are ordinarily known as "apartments." During the investigation 1,172 different vice resorts were found in 575 different apartment houses and tenements in Manhattan. The methods and conduct of these apartments are not far different from those in the parlor houses. One exceptionally undesirable feature—and this must be remembered by those directing their efforts against the organized houses of prostitution—is the close proximity of these apartments to respectable families of the poorer class with young children in the impressionable stage of life. The report gives several incidents showing that such young children learned to understand and recognize what was going on under their eyes.

In these apartments the pretense of medical inspection as already described is also maintained.

One type of apartment is known as the "call house." Here the girls are not on the premises but are summoned over the telephone as customers arrive and express their preference as to age, appearance, style, and other characteristics. These establishments cater to an exclusive and quiet trade.

The resorts which have been so far described are fixed places where essentially the same women are concerned from time to time. There is, however, a great deal of itinerant prostitution and to accommodate this there are assignation houses or disorderly hotels and furnished room houses.

In the investigation there were found 103 hotels which were classed as being assignation places, disorderly, or suspicious. Evidence was discovered which proved that prostitutes were openly soliciting men on the street and elsewhere to go to 65 of these hotels for immoral purposes. A woman investigator discovered 25 additional hotels where prostitutes declared they could freely take customers or have them openly visit their apartments or rooms. Other hotels could be used carefully under certain conditions, and it is of course known that almost any hotel may be used without the knowledge of the management for prostitution purposes. The disorderly hotels vary greatly as regards their sanitary condition, but it may be regarded as sure that hygiene as regards changing linen and similar features is always sacrificed in the interests of economy.

Another type of assignation place is the furnished room house. In the investigation in question 112 such vice resorts were discovered.

Still another type of vice resort is the so-called massage parlor. It is estimated that there are over 300 of these in Manhattan, a large proportion of which are believed to be vice resorts. But 75, however, were actually investigated.

**Places Which Cater to Vice.**—Not only actual vice resorts are involved in the prostitution question, especially at the present time; there are also places where prostitution is promoted in various ways. The report describes such places as follows: "Places which cater to vice are divided into two groups. The first group catering directly to vice, includes saloons and their accessories, such as concert halls and cabaret shows; the second group, operating indirectly, comprises public dance halls, burlesque theaters, amusement parks, and boat excursions. The proprietors of these places usually have full knowledge of the demoralizing influence of their establishments, and deliberately encourage such conditions for the purpose of increasing their profits." There is meant, of course, the disreputable establishment in each class, there being certain exceptions.

Disorderly saloons, concert halls, and cabaret shows may all be considered together, because they are all connected with saloons, differing only in the character and grade of the entertainment. The rear rooms of 765 different saloons were investigated. Unescorted women, who from their actions and conversation were believed to be prostitutes, were seen in 308 of these and the investigators were solicited by prostitutes in 107. In some places white men and colored women, and in others colored men and white women were found to mingle intimately.

There are some miscellaneous places in New York which "cater directly to vice in that they are frequented, for the most part, by immoral and dissolute persons who not only solicit on the premises for immoral purposes, but create conditions which stimulate the business of prostitution. The proprietors have a guilty knowledge of the fact that prostitutes and their kind use the premises as an adjunct to immoral trade. Such places include restaurants, pool rooms, delicatessen stores, candy shops, hair dressing and manicure parlors, barber shops, cigar stores, palmist and clairvoyant parlors, livery stables, and opium dens. The places in question are usually situated in the vicinity of vice resorts." Reports were made in connection with conditions in 91 such places.

Street-walking and soliciting is an important factor in the New York situation. It is particularly frequent in certain well-known localities. Most of this soliciting, however, is done on Broadway as is shown by the following table:

| | All Streets in Manhattan | Broadway |
|---|---|---|
| Street-walkers counted | 6,759 | 3,175 |
| Street-walkers who solicited investigators | 793 | 235 |
| Number of reports | 1,596 | 492 |

By this it will be seen that of the total number of street-walkers counted, over 47 per cent. were on Broadway, and of the total number of street-walkers who solicited investigators, nearly 30 per cent. were on Broadway. It may be remarked that the street-walkers are generally lowest in the hygienic scale and virulently infectious as they can operate in a diseased state on the street even when they cannot remain in the houses.

The public dance halls have long been known to be prolific breeding-grounds of prostitution and no extended description of them will be necessary. Of 75 different dance halls only 5 were characterized as decent; 11 were more or less objectionable; 59 were wholly so. At all but three liquor was sold. At practically all a large proportion of the attendance was largely disreputable.

The excursion boats and parks offer certain opportunities for immorality.

In the following three tables will be found an indication of the extent of the business of prostitution in the City of New York and the range of the investigation. They will be understood to refer to the period of study, *i.e.* January 24 to November 15, 1912.

SUMMARY OF PLACES IN MANHATTAN WHERE PROSTITUTION WAS FOUND TO EXIST

| Types of Places | Number of Buildings | Different Vice Resorts in Them | Number of Investigations Made |
|---|---|---|---|
| Parlor houses | 142 | 142 | 441 |
| Massage parlors | 70 | 75 | 78 |
| Apartments | 578 | 1,172 | 1,245 |
| Furnished rooms | 112 | 112 | 148 |
| Hotels | 105 | 105 | 560 |
| Totals | 1,007 | 1,606 | 2,472 |

SUMMARY OF PLACES IN MANHATTAN CATERING TO PROSTITUTION

| Types of Places | Different Addresses of Buildings | Different Investigations Made | Number of Prostitutes Counted |
|---|---|---|---|
| Saloons, cafes and concert halls | 308 | 1,304 | 2,689 |
| Miscellaneous places allied with prostitution | 71 | 145 | 385 |
| Semi-public places used by prostitutes | 20 | 35 | 150 |
| Totals | 399 | 1,484 | 3,224 |

SUMMARY OF INMATES COUNTED AND ESTIMATED AT PLACES IN MANHATTAN WHERE PROSTITUTION WAS REPORTED

| Types of Places | Number of Inmates Counted | Inmates Estimated But Not All Seen | Total |
|---|---|---|---|
| Parlor houses | 1,686 | 2,609 | 2,609 |
| Massage parlors | 153 | | 153 |
| Apartments | 2,294 | 2,976 | 2,976 |
| Furnished rooms | 227 | .... | 227 |
| Hotels | 583 | .... | 583 |
| Totals | 4,943 | 5,585 | 6,548 |

In considering these figures as indicative of the volume of prostitution in New York City it must be remembered that women on the street have been referred to earlier in this article. While it is possible there may have been some duplication, this is more than offset by large numbers which must have remained undiscovered. It must also be borne in mind that the occasional and casual prostitution which is so frequent in New York City was not touched by the scope of the inquiry.

Widely varying estimates have been made regarding the total number of professional prostitutes in New York City. A recent estimate which was given wide publicity in the daily press placed the figure at 30,000. In the investigation under consideration there were counted in vice resorts and on the streets 14,926 professional prostitutes in the borough of Manhattan. According to the report "it is safe to say that a total of 15,000 in round numbers does not overstate the number of professional prostitues in Manhattan." This is a conservative figure: the total in the whole city is probably much larger.

Having thus gained some idea of the extent and general character of organized prostitution in New York, we may examine several phases of more particular medical interest.

**Aspects of Medical Interest.**—As in Chicago, sexually perverted practices and unnatural exhibitions have been found to play a considerable rôle in the arena of prostitution in New York. As is known a considerable proportion of the prostitutes are addicted to perverse practices among themselves and in the large cities there is a class of customers who demand satisfaction in abnormal ways. Prostitutes have found it profitable to comply with these demands. There are also a large number of men to whom exhibitions of a pornographic character strongly appeal and these also have the effect of stimulating business.

The use of drugs by prostitutes is very common. According to the report "alcohol is needed to keep the inmates to their task, but even more essential from the business standpoint are drugs. The girl must be kept gay and attractive, her eyes must look out on the world of business bright and unfaltering." In the effort to maintain this attitude many become slaves to drug habits.

**Venereal Disease.**—In the report under consideration the attention given to venereal disease is not extensive, but there is adduced some evidence of interest, particularly that bearing on the blood tests of women who had been engaged in prostitution.

Under present circumstances any effort to estimate the volume of venereal disease in a city like New York must seem vain. Without having syphilis and gonorrhea reportable the number of cases under treatment by private physicians are unknown and there are countless numbers of patients who either conceal their condition entirely or resort to quacks or advertised "cures" for relief.

The following facts will, however, be of interest. During 1911 the number of cases of all kinds treated in 17 dispensaries in New York City was 522,722. Of these, 15,781 or 3.01 per cent. were venereally infected. There is very scant hospital accommodation for the victims of syphilis and gonorrhea, yet 5,380 cases, 6.33 per cent. of all the cases treated in 13 different hospitals, were venereally infected.

Of these 5,380 patients about two-thirds were male and one-third female. The infections occurred at various times between the first and the seventieth year, the period of greatest frequency being between 16 and 30 years of age. The sex distribution in the various age groups was:

| | Male | Female | Total |
|---|---|---|---|
| Between 16 and 20 | 796 | 396 | 1,192 |
| 21 and 25 | 1,182 | 454 | 1,636 |
| 26 and 30 | 692 | 268 | 960 |

The civil state was as follows:

| | | |
|---|---|---|
| Male | Single | 640 |
| | Married | 2,950 |
| | Widowers | 67 |
| Female | Single | 589 |
| | Married | 802 |
| | Widows | 9 |

Any ordinary figures for venereal disease must be defective for several well-known reasons. One point is that accurate diagnosis has only recently become feasible. The positive diagnoses increase largely in number with the application of the more delicate and reliable tests. An example will suffice to demonstrate: 308 adults were admitted to the medical wards of a New York hospital during the months of January, February, and March, 1913. The Wassermann test for syphilis was made in 166 cases among these patients and 38, or 23 per cent. of those examined, gave positive results. This is equivalent to 12.3 per cent. of the entire 308. As the report comments "had the test been applied to all adults admitted, undoubtedly the ratio of syphilitic infection would have been higher still. As a matter of fact, the test as usually performed does not disclose all cases of infection; so that the prevalence of disease is actually greater than the tests indicate."

**Clinical Diagnosis and Blood Tests.**—A study of the records of 647 cases at the State Reformatory for Women at Bedford Hills, N. Y., showed that 20.56 per cent. had clinical manifestations of venereal disease, as set forth by the following table:

| | |
|---|---|
| Syphilis | 61 |
| Gonorrhea | 54 |
| Syphilis and gonorrhea | 9 |
| Disease unstated | 8 |
| Chancre | 1 |
| Total | 133 |

A series of complement fixation tests on blood specimens of 466 inmates was made, however, by Dr. Archibald McNeil of the Research Laboratory of the New York City Board of Health and some different results were shown. The method followed was as follows: All smears were prepared and examined in duplicate and were stained by Gram's method, pure cultures of staphylococci and colon bacilli being used as controls. It is noted, however, that in one case the smear was positive and the complement fixation test for gonorrhea was negative, but as a rule antibodies against the gonococcus do not appear in the blood during the acute stage of the disease, so it may happen that there result positive smears and negative complement fixation tests in recent cases. At a later period, however, it is noted that the complement fixation test is almost invariably positive. The complement fixation tests were all performed in duplicate as a check on any possible errors in technique. The anti-sheep hemolytic system with inactive sera was used with the alcoholic extract of guinea-pig heart for an antigen in the syphilis tests, and an antigen prepared from ten varieties of gonococci was used in the tests for gonorrhea. All of the tests were made in sets of twelve, each set being fully controlled. The blood specimens were unaccompanied by histories and the laboratory results were not in any way influenced by clinical findings.

Of the 466 cases already referred to, with the Wassermann test the following results ensued:

| | Number | Per Cent. |
|---|---|---|
| Positive reactions | 176 | 37.7 |
| Negative reactions | 273 | 58.6 |
| Doubtful reactions | 17 | 3.6 |

With a modification of the Wassermann technique the tests were allowed to stand for four hours at ice-box temperature to fix complement instead of the usual one hour in the incubator at 37° C. By this method the following results were obtained:

| | Number | Per Cent. |
|---|---|---|
| Positive reactions | 224 | 48 |
| Negative reactions | 212 | 45.4 |
| Doubtful reactions | 30 | 6.4 |

The increase of positive reactions for syphilis by the use of this modified method instead of the regular one was 10.3 per cent.

The same sera under the complement fixation test (at 37° C. for one hour) for gonorrhea infection resulted as follows:

| | Number | Per Cent. |
|---|---|---|
| Positive reactions | 134 | 29 |
| Negative reactions | 234 | 50 |
| Doubtful reactions | 98 | 21 |

With the ice-box method of fixation the following results were obtained:

| | Number | Per Cent. |
|---|---|---|
| Positive reactions | 306 | 65.6 |
| Negative reactions | 101 | 21.7 |
| Doubtful reactions | 59 | 12.6 |

The increase in positive results by this method of fixation was therefore 36.9 per cent.

By the examination of vaginal smears from the same subjects it was possible to demonstrate the presence of the gonococcus in but five cases.

The results when summarized have a wide significance and great importance. Of the 466 girls tested, only 50, or 10.7 per cent., were found to be free from venereal infection. Practically 90 per cent. showed infection, there being positive results as follows:

| | Number | Per Cent. |
|---|---|---|
| For both syphilis and gonorrhea | 170 | 36.4 |
| For syphilis only | 27 | 5.79 |
| For gonorrhea only | 117 | 25.1 |

It will be seen how hopelessly inadequate is diagnosis based on so-called clinical manifestations. From the blood tests it would seem that gonorrhea was contracted in advance of syphilis more frequently than the reverse order obtained.

**View of New York Conditions.**—This first report of the Bureau of Social Hygiene is most encouraging from a scientific point of view. It is a dispassionate though an impressive account of the situation in the metropolis and the absence of overdrawn and superlative adjectives is most commendable. As we have had so much literature upon this subject of a widely different character I cannot refrain from citing an example to illustrate my meaning. To quote from the report: "On January 20, 1912, a well-known pimp met his woman in the rear room of a saloon on Seventh Avenue. An investigator saw this prostitute give him a ten dollar bill. The pimp upbraided the girl for not having more money and struck her a heavy blow in the face. She fell to the floor. The girl was advised to have the pimp arrested, but she refused to do so although her eyes were swollen and discolored." There is no further comment; merely an accurate record of fact.

No conclusions regarding the best means of dealing with prostitution were drawn, but this enhances rather than vitiates the value of the report. One contention, however, is implied by the title—

"Commercialed Prostitution in New York City"—namely, that the prostitution system at the present time can in no way be considered as the answer to a natural demand on the part of the people. It is shown to be exploited to the last degree, using every means to create, through allied agencies of prurient influence, demands which would not otherwise exist. There is presented extensive evidence on these points and, in my opinion, the contention referred to is sustained with complete certainty.

298 Metropolitan Tower.

## A CASE OF ADDISON'S DISEASE WITH SEVERE ABDOMINAL SYMPTOMS.

By LINDSAY S. MILNE, M.D.,

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The following case of Addison disease illustrated the usual clinical features of this disease, but also was of more particular interest in relation to the nervous manifestations which were present. Acute abdominal symptoms such as occurred in this case, although usually mentioned in works on this subject seem to be of no uncommon occurrence in the terminal stages of Addison's disease. They are, however, very confusing, and in many cases seem to have led to a variety of mistaken diagnoses.

The following case occurred in a well developed male, twenty years of age, a traction engineer. He was originally of fair complexion, and was light haired. He came under observation complaining of intense abdominal pain, thirteen days before the date of his death. About a year previously his face began to get considerably browner in color. A month or two after this his hands and arms began to get pigmented in the same way; the feet, legs, and pubic region followed this, then the skin of the body. This pigmentation had gradually become deeper, particularly in the face and pubic region. For the last two months he had gradually been losing strength. Till this time, however, he had been working. At no time had there been any fever, sweating at night or loss of weight. Three weeks before the date of his death he developed a severe headache, was nauseated, and vomited frequently, and there was severe pain over the whole abdomen, particularly in the lower right portion. There was no diarrhea, but during this time he was considerably constipated. Two days after the onset of these symptoms he began to lose muscular strength very rapidly, and on admission to the hospital five days later was very weak indeed.

Personal history: He had measles and chickenpox as a child, but no other sickness in his life till at present. He never had syphilis. He smoked a pipe a good deal. His work had been with a threshing traction engine, since he was twelve years old. Family history: Father died of consumption; one aunt died of consumption; mother and one younger brother alive and healthy. No similar case of pigmentation in the family.

On physical examination his face and neck were very dark brown in color, so also were his head and arms. The axillary regions were deeply pigmented, and the nipples nearly black. The skin of the thorax, abdomen, and back was brown in color, but much lighter than the other portions of the body. The feet and legs were deeply pigmented, and the pubic region and genitals were almost black in color. The sclerotics were not pigmented. The mucous membrane of the mouth was somewhat brownish in color. There was no jaundice. The thyroid was not enlarged. There were no eruptions or scars on the skin, and no enlarged lymphatic glands. The chest was long, and there was a slight scoliosis. There was no dyspnea or cough. The physical examination of the chest revealed no signs of tuberculosis or other disease condition. The heart apex beat was in the fifth interspace, 3 inches from the midsternal line. The pulsation was circumscribed in a small area, and was very feeble. There was no other pulsation over the precordia, nor any pulsation in the epigastrium. The heart sounds were distant, and were short and slapping in character. The pulmonary second sound was slightly accentuated. There was no cardiac murmur. The pulse was slow, averaging 60 to 70 per minute, but regular. Its volume was small, and the blood pressure averaging 110 mm. of mercury.

He was vomiting very frequently, bringing up only small quantities of mucus. He felt continuously nauseated and faint, and preferred to lie on his back with the knees drawn up. His abdominal pain became much worse when the legs were extended. He complained of pain over the entire abdomen, worst in the right iliac and lumbar regions. This pain seemed to be continuous in character, and did not shoot in any direction. The abdomen was retracted slightly, and the skin over this region was extremely hypersensitive. No abnormal localized area of resistance could be determined in any part of the abdomen. The abdomen was fairly rigid, but moved considerably on respiration. On palpation, severe pain was elicited from pressure on any part of the abdomen, but was much worse in the right iliac and lumbar regions. His liver and spleen were not specially tender nor were they palpable. His stomach was not dilated. The large intestines were not distended. The motor power of all the muscles was weak. The reflexes were diminished. His mentality was clear and his special senses apparently were normal. The feces showed no special change. His urine had a specific gravity 1018 and contained no albumin or sugar. There was, however, a considerable deposit of triple phosphates. His temperature on admission was 95, and for the next six days varied from 97 to 98.8. During this time the pain in his abdomen continued very severely, but was never shooting in character. The abdomen was very tender and the skin extremely hypersensitive over this region. He continued lying on his back with the legs drawn up, complaining of very severe pain if moved. He frequently vomited small quantities of mucus and any food given him. Extreme nausea seemed to be present almost continuously. His bowels at first moved once daily and enemas gave fairly good results. Six days before he died the temperature ran up to 103° at night, returning to normal in the morning. His leucocytes at this time numbered 8400 per cubic mm. and 85 per cent. were polymorphs. The next day his temperature rose to 103.8° and did not fall below 102° for the next two days. After this it came down to normal for 24 hours, when it again rose to 103° and subsequently to 97° on the following morning. During the last two days of life the temperature intermitted between 97° and 99.8°, at the time of death being 100°. The pulse varied from 54 to 120, becoming more rapid as the temperature rose. At no time was there any dyspnea. The pain in the abdomen persisted intensely till the time of death. It was in no way relieved by the taking of alkalies. Enemata generally evacuated a small amount of

fecal matter, but did not relieve the pain. Morphine in small quantities gave him considerable relief, and following its administration he generally had some sleep. During the last two weeks of his illness the blood pressure was extremely low, averaging about 85 mm. of mercury. During the last two days he had become extremely weak, but was comparatively clear in his mind to the end. There were no convulsions nor muscular twitchings nor rigidity nor any evidence of meningitis.

The autopsy was conducted six hours after death. The body was not emaciated. The pigmentation, particularly of his trunk, had faded considerably since death. The abdomen was slightly retracted. The peritoneum showed no special change. The intestines were not distended. There was no peritonitis and no free fluid in the abdomen. The appendix showed no gross abnormality. The spleen was acutely congested, slightly enlarged, soft, and on section, showed the Malpighian bodies very prominently. The liver was about normal in size, soft and slightly fatty. The gall bladder was not distended. It contained a viscid bile, but no stones. The kidneys were both slightly larger than normal. They were congested and showed a considerable degree of cloudy swelling. The urinary bladder showed no special change. The stomach was not dilated. Its mucous membrane was considerably congested, but in no region was there any ulceration. The intestines showed no special change. There were no peritoneal adhesions in any part of the abdomen, and in no place was there any ulceration of the mucous membrane of the intestine. The mesenteric glands were all slightly enlarged, so also were the lymphatic glands along the aorta. They were reddish on section and did not present any evidences of tuberculosis. The suprarenal capsules did not seem to be altered in shape and appeared about normal in size. They were, however, very firm. On section the entire suprarenal substance of both glands, as is found in the great majority of cases of Addison's disease, were replaced by a chronic fibroid and caseous tuberculous process. In no place could any adrenal tissue be found. It was remarkable how the contour of the glands had been preserved, and yet the tuberculous process had so completely replaced the gland substance. There was no other focus of tuberculosis in the abdomen which could be discovered. The lungs showed no special change. The heart was slightly reduced in size. The myocardium of the left ventricle was somewhat atrophied. There was no atheroma of the aorta. The thyroid was not enlarged. The thymus extended down over the front of the pericardium. It measured about two inches in length by one inch in breadth by one-half an inch in thickness. It seemed to be composed chiefly of lymphoid tissue and showed no evidences of tuberculosis.

This case presented the usual features of Addison's disease but was of special interest in several ways. The acute abdominal symptoms such as he presented are rather more common than are usually noted in cases of Addison's disease. Such symptoms seem specially to occur in the terminal stage of the disease. The recognition of such acute abdominal symptoms as this case presented, occurring in cases of Addison's disease, may prevent some unnecessary laparotomies. In this case also as is commonly found the thymus was considerably enlarged but whether this has any relation to the destruction of the suprarenals is uncertain. The suprarenals were both completely destroyed by tuberculosis without there being any other tuberculous focus in the body. The whole history of this case was comparatively acute. Till very close to the end the only complaint had been the change in color, nor had there been any great loss of strength or weight or any definite evidences of tuberculosis.

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## ANGIONEUROTIC EDEMA.

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The following is a report in detail of a case of this condition. This report may serve as a possible help in the determination of the etiology.

Angioneurotic edema, also known as Quincke's disease, is characterized by localized swellings of the skin and mucous membranes, appearing spontaneously, lasting from a few hours to three or four days. It is seldom fatal, but when it is, the lethal outcome is usually due to edema of the larynx. Studies of this condition by Milton, Graves, Quincke, Osler and others, show the following: (1) The cause is unknown, but nervous influences, autointoxication from the intestinal tract, intoxication from drugs, alcohol, heredity, and hysteria, have all been credited in various instances with bringing on the attacks. (2) The pathology is obscure, as the cause is not positively determined, and the condition is seldom fatal. It is more often referred to as a symptom-complex than as a disease. (3) A relationship to other diseases seems to have been established. This is especially true with reference to urticaria, and angioneurotic edema has been named "Giant Urticaria" by Milton. The following case is hereby reported: A professional man, aged 30 years, gave a negative family history. The patient was the only one in a family of eight children who had attacks of this disease. Personal history: Has had all the common diseases of childhood. Operated on for appendicitis some years ago. No rheumatism, diabetes or any other constitutional disease present. Is in excellent health, and always considered himself so. Has had psoriasis on elbows for five or six years. Habits regular. Does not drink alcohol in any form, does not use drugs, except salol occasionally as an intestinal disinfectant for attacks of urticaria. Is an excessive smoker of cigars. Bowels are regular, normal movement every morning. Appetite good, is not a big eater, but prefers fats and sweets, and diet is mostly made up of fatty and sweet foods. There is no trace of nervous element, and he is not hysterical.

Present history: For about two years he has had frequent attacks of edema of the face, but each attack was always preceded by urticaria. Urticarial attacks were very frequent, in fact, sometimes were constant. Every attack of urticaria, however, was not followed by edema. He could generally foretell an attack of edema, if he became constipated, or if he did not happen to move his bowels at the first call of nature, or when urticaria was more marked, as after eating an excessive amount of candy or fatty foods. Could cut attack of urticaria short and prevent the edema, if he took a mild cathartic and salol. The attacks of angioneurotic edema were not always of the same degree. The edema often manifested itself only in the larynx, or in the lips or in the eyelids. The

last attack was severe and typical enough to warrant detailed description.

He did not feel "right" in the bowels, although he had his accustomed bowel movement in the morning. He noticed some urticaria over the body during the day, and in the evening had another small soft bowel movement. Took about 30 grains of salol during the day. In the evening he noticed that one-half of the lower lip began to burn, and to swell quickly, and soon was swollen to an enormous size. He had a chilly feeling during the evening, and then a pronounced chill. He does not know if he had any temperature but felt as though he had. In an hour the lids of both eyes were swollen, and by the time he went to sleep, his lips and eyelids were enormously swollen. He took three grains of calomel, went to bed, but was up most of the night with severe colic and frequent watery movements. During the night he could feel a choking in the throat and he knew he was getting edema of the glottis. In the morning, the entire face was swollen, including the forehead. The penis was also swollen, so that micturition was painful. He had severe headache, and his face was unrecognizable. He took salts in the morning. For the whole day he had colic and diarrhea, which continued during the next night. The edema disappeared on the third day and was all gone on the fourth day. From the third day on he had marked urticaria over the whole body lasting for three days.

It would seem that this is a case of angioneurotic edema possibly caused by toxins arising from the gastrointestinal tract. This case also seems to confirm the alleged relationship between urticaria and angioneurotic edema.

233 West One Hundred and Twenty-second Street.

## A STUDY OF THE FLACCID SPINAL PARALYSIS WHICH ATTACKED LOUIS PASTEUR IN EARLY MATURITY AND ITS SIMILARITY TO AN ATTACK OF ACUTE EPIDEMIC POLIOMYELITIS.

### TOGETHER WITH A STUDY OF THE SILKWORM AS A POSSIBLE MEDIARY HOST OF THE SAME DISEASE.

By JACOLYN VAN VLIET MANNING, M.D.,

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In a sympathetic sketch of Pasteur's life by Shipley[1] of Christ's College, Cambridge, I noted a comment on a paralytic attack which disabled Pasteur in his forty-sixth year. (Shipley: "Pearls and Parasites.") This hemiplegia, occurring in early life, struck me as very peculiar, the more so as I considered the revolutionary character of the work done by Pasteur in the years succeeding. That I came on this information in recreative reading while engaged in a research on poliomyelitis I must regard as a happy illustration of one of Pasteur's own epigrams: "In the fields of observation chance favors only the mind that is prepared."

The startling suggestion conveyed compelled me to look into the matter. I obtained that extended biography of Pasteur, which was written by Réné Vallery-Radot[2], a connection by marriage, during Pasteur's lifetime, and with his sanction. Pasteur, with the proud humility of the great, who feel that their work should speak for them, did not at once grant permission for the construction of his biography while living, and his consent was finally obtained by the plea, "Your presence in the flesh will be the guarantee of my exactitude." We may therefore consider these volumes to be authentic. I have also taken a few notes from the fine biography by Frankland.[3]

Pasteur, at this period, had not yet reached the zenith of his power. We may say that the preceding years of study of the formation of crystals, the fermentation of wine, the demonstration of the fallacy of spontaneous generation, and the research in which he was unwillingly engaged into the cause of the silkworm disease, constituted a mental discipline and apprenticeship to Knowledge. His revolutionary discoveries of the transmissible diseases of animals, anthrax, cholera, and rabies, and of toxins, their attenuation and use in immunization, all followed his convalescence from this hemiplegia so mysterious in origin and unique in manifestation.

This acute illness, followed by paralysis of the face, arm, and leg, occurred while Pasteur was engaged in the investigation of the silkworm diseases, pébrine, and flacherie. The testimony of all about Pasteur during his illness, including the bulletin of his medical attendant, indicates a flaccid and spastic spinal paralysis, initiated by an acute febrile onset, and accompanied by mental clarity and unbroken orientation for time and place. The faculty of the Académie de Médecine, already perplexed at these atypical manifestations accompanying a supposed attack of cerebral hemorrhage, received a communication from Pasteur embodying his latest discoveries, dictated by him from his bed in expectation of his own impending demise. In the following study it will be well to keep in mind that the subsequent mental work of the most revolutionary humanitarian discoveries, of the direction of a laboratory of young enthusiasts, and of preparing and delivering lecture courses at home and abroad was initiated and projected by a brain conjectured to have been the seat of a furious hemorrhage!

In the following account I have abstracted as nearly complete a clinical history of Pasteur's illness as could be obtained from the volumes mentioned. As the illness was diagnosed cerebral hemorrhage by celebrated consultants, it would not be amiss to review the characteristic manifestations of such an attack: "The shock or stroke of apoplexy is commonly sudden. The patient falls to the ground unconscious. . . . Such attacks may be rapidly fatal. In some cases there is a more gradual onset. The patient . . . gradually becomes unconscious." (Herrick.[4]) "The most frequent and prominent symptoms are sudden onset with loss of consciousness, convulsions, and coma, and if recovery result, hemiplegia on the side opposite the lesion. The onset may be very abrupt, the patient falling unconscious as though struck upon the head. If the attack comes on while the patient is standing, a weakness in one leg may cause him to fall or sit down, unconsciousness soon developing." (Musser.[5])

Louis Pasteur, the son of French peasants, was born at Dole in 1822. Married to a woman of excellent stock, they had in 1865, the year in which Pasteur began his investigation of the silkworm disease, a family consisting of one son and three daughters. Pasteur left for Alais, the center of the silkworm industry, in June, 1865; in September, 1865, his daughter Camille died of an acute illness, diagnosed typhoid fever. In 1866 Pasteur was again assigned to the study of the silkworm and

spent the summer at Alais with his family, but his daughter Cecile, twelve years of age, died in transit from a relapse of an acute illness, also diagnosed as typhoid fever. In January, 1867, Pasteur again took up his residence for the same study, in the same section of France, having with him his wife, his remaining daughter, and three students. During these years the family returned to Paris for the winter, but the spring of 1868 found them once more at Alais, where Pasteur found complete success and proof of all his rigorous prescriptions for the rearing of healthy silkworms. The infected worms which Pasteur studied so carefully presented at a certain stage a multitude of little black spots under the skin, which gave them an appearance of having been peppered, and so the malady was called the "pepper disease," or in the patois "pébrine." "If these spots of pébrine," said Pasteur, "were considered in conjunction with certain human maladies, in which spots and eruptions appear on the body, what interesting inductions might present themselves to minds prepared to receive them!" As Frankland does not fail to note, Pasteur, in studying the epidemic diseases of the silkworn, was first brought in contact with phenomena akin to those which obtain in infectious diseases of man, and acquired a great store of ideas which he afterward so successfully deployed into line in his brilliant attack on the subtile maladies whose study absorbed the later years of his life.

Pasteur returned to Paris early in October, 1868, and threw himself into his work, his classes at the Sorbonne, the organization of his laboratory, some further polemics on the silkworm disease, and projected experiments for the following year. This accumulation of mental work (is said to have) brought about extreme cerebral congestion.

On Monday, October 19, 1868, Pasteur, though suffering from a strange, tingling sensation of the left side, had a great desire to go and read to the Académie des Sciences a treatise by an Italian, who, having studied Pasteur's method and results, declared his the best methods of regenerating cultures of silkworms. On that day, in spite of an alarming shivering fit, which had caused him to lie down immediately after lunch, instead of working as usual, Pasteur insisted on going to the Académie at half past two. Mme. Pasteur, vaguely uneasy, accompanied him to the vestibule of the institute. Turning back, she met Balard, stopped him, and asked him to walk back with Pasteur, and not leave him before reaching his own door. Pasteur read the paper with his usual steady voice and walked back with Balard and St. Clair Deville. Pasteur dined very lightly and went to bed at nine o'clock. He had hardly got into bed when he felt himself attacked by the strange symptoms of the afternoon. Mme. Pasteur sent at once for Dr. Godélier, a friend and clinician, and Pasteur, paralyzed one moment and free again the next, pointed out to the doctor, without any faltering of voice, the progressive symptoms of the paralysis.

The cerebral hemorrhage (?) gradually brought about absence of movement along the entire left side. De Mussy and Andral were called in consultation. Somewhat disconcerted by the singular character of this attack of hemiplegia, Andral prescribed the application of sixteen leeches behind the ears. Blood flowed abundantly, and Godélier wrote in the next day's bulletin, "Speech clearer, intelligence perfect; some movement of the paralyzed limbs." Later the same day he wrote, "Complains of his paralyzed arm, 'It is like lead; if it only could be cut off,' groaned Pasteur." On Wednesday the written bulletin continues, "Mental faculties still absolutely intact. The cerebral lesion, whatever it may be, is no worse; there is an evident pause." Two hours later the words, "Mind active," were followed by the startling statement, "Would willingly talk science."

His recovery was regarded as hopeless. His friends hastened to his bedside. He said to De Ville, "I am sorry to die; I wanted to do much more for my country." A private letter from a cousin, Mme. Cribier, written October 26, gives a good idea of his condition at the close of the week: "The news is rather good this morning. He has been so restless all day that M. Godélier ordered silence in the whole flat. It is only in the study, which is farthest from the bedroom, and has padded doors, that we are allowed to talk. His mind seems so absolutely untouched and he is still so young. His stroke is accompanied by symptoms which are now occupying the attention of the whole Académie des Sciences. Paralysis always comes abruptly, whilst for M. Pasteur, it came in little successive fits, twenty or thirty, perhaps, and was only complete at the end of twenty-four hours, which completely disconcerted the doctors who watched him. It seems that this fact is observed for the first time, and is puzzling the whole faculty."

Pasteur's mind remained clear and luminous, dominating his prostrate body. "One night when I was alone with him," relates M. Gomez, "after endeavoring vainly to distract his thoughts, I gave up the attempt, and allowed him to express the ideas which were on his mind. Finding, to my surprise that they had his accustomed clearness and conciseness, I wrote what he dictated without altering a word, and the next day I brought to Dumas, who could hardly credit his senses, the memoranda which appeared in the report of the Académie on October 26, 1868, a week after the stroke which nearly killed him." It was an extremely ingenious method of ascertaining in advance whether the *graine* (seed, *i.e.* eggs) of the silkworm is disposed to flâcherie. November 30 Pasteur left his bed for the first time for an arm chair. Godélier's December bulletin ran: "General conditions most satisfactory. Progress evidenced daily by return of action in paralyzed muscles, inspires patient with great confidence. He is planning out his future serici-culture campaign, receives many callers without too much fatigue, and often dictates letters." December 15: "Walked from bed to arm chair with some assistance." December 29: "Walked a few steps without support." January 18, 1869, three months from his paralytic stroke, this indefatigable man traveled to Alais, lying on the cushions of a coupé, to observe the tests that were being made on forced silkworms. In February Pasteur slipped and fell on the stone floor of this laboratory, retarding his progress, but not sustaining any injury. He wrote to his old master, Dumas, during this month: "The improvement in the leg and arm seem to have begun again, but with excessive slowness. I am about to have recourse to electricity. In the morning I arrange the day's work. I get up at twelve, after having breakfast in bed, and the paper read to me. If fine, I then spend an hour or two in the little garden of this house. Usually I dictate to my dear wife a page of a little book I am preparing. About seven or half past I always feel terribly tired, and as if I could sleep twelve consecutive hours, but

I invariably wake at midnight. What makes me hope for an ultimate cure is that my appetite keeps good, and those short hours of sleep appear to be sufficient."

November, 1869, Pasteur, the state of his health being still very precarious, moved by short stages with his family to Villa Vicentina, at the request of Napoleon, to bring back the prosperity of former years to the silk culture on that estate. The non-profit bearing estate paid a net income of 22,000 francs the following year. In April, 1870, Pasteur published his "little book," which had grown into a "splendid" two-volume work, full of facts and documents on silk culture. In the preface he wrote: "Although I devoted nearly five consecutive years to the laborious experimental researches which *have affected my health* (the emphasis is not Pasteur's), I am glad that I undertook them." The Franco-Prussian war intervening, during which the laboratories of Paris were demolished in April, 1871, Pasteur wrote a friend: "The war has let my brain lie fallow. I am ready for fresh undertakings." Pasteur never recovered the full use of his limbs; his left hand having remained awkward, he entrusted the carrying out of his future experiments to his assistants, taking charge himself only of the note book in which all results were chronicled. In 1873, elected an associate of the Académie de Medicine, and attending its first meeting in April, "as he walked toward the desk allotted to him, his left leg dragging a little, no one among his colleagues suspected that this unassuming new member would become the greatest revolutionary ever known. (Vallery-Radot, Devonshire, Vol. II, Page 4.) Pasteur's faithful student, Roux, speaking of the period from 1876 to 1885, said: "Pasteur was always first on the spot. Every morning at eight o'clock I heard his hurried and slightly dragging footstep pass the window of the room I occupied at the extremity of the laboratory." Finally there is one brief statement that this paralysis was spastic as well as flaccid in a letter written by an intimate friend in 1889: "Pasteur is short. Since 1870 his left arm and leg, smitten by apoplexy, are somewhat stiff, and he drags one foot much like a wounded veteran. Weary, traversed with deep furrows, the broad forehead wrinkled, the mouth slightly drawn by paralysis, the living thought still flashes beneath the deep brow." On November 1, 1894, Pasteur was seized with a violent attack of uremia, was in coma for four hours, and was not left alone day or night until Christmas day. He recovered from this illness, and in May refused the Order of Merit from the German Emperor. That May he spent the afternoons in a little tent under the chestnuts in the garden of the Pasteur Institute, and the rest of the summer was spent under the pines and purple beeches of Villeneuve. His strength diminished day by day. He witnessed the ruin of what in him was perishable, but his eyes remained bright and clear. In September he could not leave his bed. On September 28, 1895, very peacefully he passed away. In the interval of twenty-seven years which existed between an attack of supposed cerebral hemorrhage and his death, Pasteur plunged into an entirely new sphere of research, in which he won his most glorious laurels, and had to fight his fiercest battles!

Wickman states that the clinical picture of encephalitis, or the cerebral form of poliomyelitis, is a regular spastic hemiplegia, and that it may be known from hemorrhage and other disease, in that the condition is acute, febrile, and has constant prodromal symptoms. It is to be noted that while the onset of cerebral hemorrhage is usually abrupt, this attack of Pasteur's began with a distinct aura (Manning[6]), and with the prolonged chill which usually initiates an acute infectious disease. Cerebral hemorrhage is accompanied by a profound coma; Pasteur exhibited mental exaltation, elucidating and dictating a technical and ingenious method for the discovery of the presence of infection in the eggs of the silkworm! The symptom of severe pain is not present in the stertorous coma of cerebral hemiplegia; Pasteur, on the contrary, suffered such agonizing pain in the arm later paralyzed, that he expressed a wish that it might be cut off!

Before further analysis of Pasteur's case I would like to present a case of acute epidemic poliomyelitis, presenting only one chief difference from Pasteur, in that the victim was a somewhat younger male. This naive history is taken from a personal letter to the writer received after the publication of an article on the subject in a popular magazine (Manning[7]). It will be noted that while Pasteur's attack was said to be due to extreme cerebral congestion, this young man, an electrician of the twentieth century, was told his attack was brought on by the constant testing of hot wires with his hands.

Portion of letter from E. L. N., to the author:

"March 4, 1911.

"My age is twenty-six. September 29, 1910, I was taken with what felt like growing pains in the calves of my legs, which kept me awake all night, and the next morning I could walk with difficulty. About 10 A.M. I could not walk at all, and was taken to the hospital about noon. I felt fine, was carried to a cab, and enjoyed a cigarette while going to the hospital. Never felt better in my life, but first night at the hospital I had a temperature of 101°. This happened at South Bend, Indiana. I had lived there eighteen months, and was temporarily superintendent electric construction. There were no cases in South Bend until mine, where the doctors seemed at a loss to know what I had, for I could not move my limbs, yet had acute feeling as to hot or cold, dull or sharp tests. I seemed a freak, for while in the hospital I had eight doctors examine me for their own pleasure. I had no headache, no neckache, no backache. The fourth day at the hospital my back became stiff, and I could not sit up, so was shipped home on a stretcher. . . . I have slept well, and eaten well. . . . By Christmas I could sit up, and my left leg was nearly normal as to movement, the right I could move but little. . . . I am now up and around on crutches. . . . I cannot life my right leg as one would in climbing stairs, yet the knee is free. I cannot keep my balance, although it seems to be getting better. My case seems so different to many cases that I have read and heard of that I thought I would write you, and if you can spare the time I would like to have your ideas of my case."

The following letter, which came in the course of a routine investigation of the writer the preceding fall, showed that poliomyelitis was in the state at the time of this young man's attack:

"State Board of Health, Indianapolis,

"October 13, 1910.

"We regret that we cannot give you any information regarding poliomyelitis in Indiana. . . . The disease is practically a new one, and we know

it is occurring in various parts of the State, but is not being recognized. . . . Regretting that we cannot be more helpful and specific, etc."

I have chosen this case rather than one of an older man with an attack of frank poliomyelitis terminating in hemiplegia to compare with Pasteur's case, for the reason that this young man, like Pasteur, exhibited a degree of mental exaltation which never has been and never will be an uninterrupted accompaniment of cerebral hemorrhage.

I do not infer that it is a constant accompaniment of an attack of poliomyelitis, but this letter is evident that a vigorous male, suffering from the purely spinal form of poliomyelitis, may experience an undoubted cerebral excitation. Males are more susceptible to the infection of poliomyelitis than females, and in all recent epidemics cases have occurred in men from 40 to 73 years of age. Such a case, which was one of forty occurring from April to September, 1910, at Mason City, Iowa, was reported as follows: Case I. C. T., male, aged 48; laborer; was taken sick June 24, with a chill, fever, pains in the legs and back, stiffness of neck, and some delirium. On the third day there was paralysis of both thighs and legs, and both upper arms and forearms. When last seen, November 24, 1910, the lower limbs and upper arms were still paralyzed, flaccid, and atropic, but showing some improvement. This is a typical case of acute anterior poliomyelitis. (Anderson and Frost: Abortive Cases of Poliomyelitis, *Journal of the American Medical Association*, March 4, 1911.) With the exception of the slight delirium, accompanying a more extended paralytic invasion in the working man, the clinical manifestations are identical with those of Pasteur's case, and their ages also closely correspond.

In this particular it is also notable that of eleven of the cases used in the study of Anderson and Frost just quoted, six were adult males, as follows: Case 1, male, 48 years, laborer; case 4, male, 34 years, physician; case 5, male, 30 years, merchant; case 6, male, 45 years, farmer; case 9, male, 49 years, farmer; case 10, male, 48 years, carpenter. All except case 1 were considered arrested forms of poliomyelitis occurring in close association with frank forms of the disease.

We have now outlined the vivid facts in Pasteur's illness which suggest an analogy to, or, in fine, the identity with an attack of acute epidemic poliomyelitis, which we will summarize briefly: I. Possible presence of epidemic disease: June, 1865, Pasteur engages in research of epidemic silkworm disease; September, 1865, death of daughter Camille from acute infection; May, 1866, death of daughter Cecile from acute infection; October, 1868, Pasteur prostrated with an acute attack of illness. II. Symptoms of Pasteur's attack which indicate presence of poliomyelitis: Auro, hyperesthesias, and motor weakness; acute onset, severe, prolonged chill, fever; total remission of attack for six hours; peripheral neuritis, an agonizing pain in left arm; coma, none; mental exhilaration, marked; spinal paralysis, progressive and regressive in character; sequelæ, the typical flaccid paralysis and drop foot of poliomyelitis, with involvement of facial.

As this study was not undertaken as an interesting bibelot, but in the strong hope that it might throw some light on a possible unknown host of the organism of poliomyelitis, so favorable to its existence that it might be demonstrated in a greater than ultramicroscopic form, much has been omitted of interest, and pertinent to the subject, which can be reasoned out from the clinical history given.

THE SILKWORM A POSSIBLE HOST OF POLIOMYELITIS.

I will present evidence which indicates that the silkworm may act as host to the organism of poliomyelitis, in the strong hope that its presence may be demonstrated in the pregenerative moth stage of the insect, as a greater than ultramiscroscopic germ.

Poliomyelitis has been endemic in North Europe for a long period. It is known to have been epidemic in the Luxembourg, France, since the eighth century. (Manning[8]). Its epidemiological peculiarity of increasing rapidly during the height of summer, when insect life is at its apogee, would indicate its probable transmission by a blood-sucking insect. The insect is yet unidentified, and its identification is hampered by the fact that the organism of poliomyelitis when taken from a human host remains ultramicroscopic in size, and cannot therefore be seen, although it may be reproduced in vitro. Dr. Philip Shepherd of Massachusetts considers the biting fly, or stable fly, as the insect agent of transmission of poliomyelitis. The writer has published a study of the bedbug as the probable agent of transmission. (Manning.[9]) Dr. Howard, chief of the Entomological Bureau, in a personal letter to the writer said: "I believe that in these cases of the transmission of disease by insect, especially when the insect may be a necessary secondary host, we must look first at those insects which are practically domesticated, since the development of such a relation involves more or less intimate association for many generations."

Verjbitski's[10] remarkable series of experiments which demonstrated the transmission of plague by both bedbug and flea was comparatively simple in technique, for the plague bacillus is a fat and lusty germ. The ultramicroscopic germ of poliomyelitis, as has been said, while cultivated *in vitro*, has never been seen. It occurred to the writer that the silkworm, which increases to fifteen thousand times its own weight during its first month's existence in the worm stage, might present a culture media of such high nutritive value that an organism ultramicroscopic in other media might here take on microscopic size. It is therefore not a possible agent in the transmission of poliomyelitis which is to be considered in this article, but an enhancing intermediary insect host, with a possible accidental infection of man. The silkworm has been a domesticated member of French households for many generations, the peasant grower housing the worm in his own domicile. In 1700 France produced annually 6,000,000 kilograms of cocoons. Louis Philippe increased the industry to 20,000,000 kilograms, totaling 100,000,000 francs. The name of the tree of gold was given to the mulberry tree, and the industry became a vocation in Italy and other Mediterranean countries. Suddenly all these riches fell away. A mysterious disease was destroying the nurseries. "Eggs, worms, chrysalids, moths, the disease may manifest itself in all the organs," wrote Dumas, when advising the senate to appoint the young chemist, Pasteur, to investigate the cause of the disorder. The epidemic disease was at that time so extended that pure seed, *i.e.* eggs of the silkworm, could be obtained only from far-away Japan. This disease was already called corpuscle disease, because some observer had found shining

oval bodies in the dead moths. The Italians called this disease of the silkworms "gattine," from the Italian diminutive *gattino,* kitten, for the sick worms held up their heads and put out their hooked feet like cats about to scratch. The most common name, however, was pébrine, from the peasant patois, *pébré,* pepper, for the sick worms became covered with a multitude of little spots which the peasants said looked as if they had been peppered. These minute spots appeared under the skin on the heads of the worms, and on the rings of their bodies.

These three names of the silkworm disease in common use are replete with suggestion and information; they first tell us that this disease is due to some microorganism; the second name is assurance that the onset of the illness was accompanied by convulsive and spastic conditions, from which we deduce an irritation of their nervous and muscular mechanism; the spots which came under the skin where they had not before shown indicate a cutaneous exanthem of an inflammatory or purpuric character. "If these spots of pébrine," said Pasteur, "were considered in conjunction with certain human maladies in which spots and eruptions appear on the body, what interesting inductions might present themselves to minds prepared to receive them!" We will note here that the exanthem of poliomyelitis is fairly constant, and has proved one of the most misleading symptoms of the disease, being often mistaken for measles. Pasteur found that if the diseased chrysalis became a moth the moth had deformed antennæ and withered legs, and the wings seemed singed; most usually the worms died during the feeding stage, or on the frames in the interim before spinning began. The atrophy of the affected muscles in poliomyelitis is recalled by the withering and deformity of the diseased moths.

The microscopic corpuscles had been seen in the diseased silkworms by Guérin in 1849; their pathological import had been suspected by Cornalia; their abundant presence in all diseased larvæ and moths had been observed by Frey; Osima of Padua had even found them in the eggs; Vittadini in 1859 had suggested that these eggs be examined microscopically to ensure that only healthy ones be preserved (Frankland). Breeders of silkworms saved a sufficient number of eggs from one year to the next to ensure a full crop of cocoons. Pasteur was able to show that the infected worms were invaded by masses of these oval luminous bodies. He studied the insect on its emergence from the egg, through the feeding stage with its successive moultings, and enormous growth, watched the "precious insect when, its body full of liquid silk, it is hastily mounting to placed twigs, there to construct its golden prison," removed chrysalids from their cocoons for examination, and observed the mating of the recently emerged moths, and the female's ovulation. Pasteur was able to demonstrate the presence of the microscopical corpuscles at every stage of the development of worms taken from infected nurseries, by triturating the insect with water and examining it with a high-power lens. His method of prophylaxis is beautiful in its simplicity and effectiveness. The female, after ovipositing, is preserved with her eggs in a small square of linen. Each female is examined for corpuscles, and if infected she and her eggs are burned. Only those eggs are preserved which come from a non-infected mother. Pasteur worked out this method after much observation, and many experiments, and for two years he was misled by circumstances which have a certain interest in the present study Pasteur found in an infected nursery that the frames often presented a wide difference in appearance; the worms on some of the frames were of so healthy an aspect that the breeder confidently expected from them a large percentage of cocoons and good breeding stock, while other frames would present worms manifestly ill and drying rapidly. Pasteur found these dying worms presented few or no corpuscles, while the worms on the better appearing frames, when they went into the chrysalis stage, were found to present masses of germs, developing more steadily day by day. It was two years before Pasteur revised his belief that the corpuscles were the result of the disease and reached the correct conclusion that the disease is caused by the corpuscles. The bearing of the non-appearance of the corpuscles in the dying worms on our present study becomes evident when we consider that in the research for the causative factor of poliomyelitis, while a constant minority of investigators have reported the presence of germs in the blood of human victims during the acute stage (Dixon of Pennsylvania), the majority of investigators have been unable to demonstrate visually the presence of germ or spore. There may exist then a possibility that the germ of poliomyelitis, under exceptionally favorable conditions, and during a stage preceding the onset of the disease, may be present in the organism, to rapidly disappear during the reactionary period which we term the febrile stage, or remain secluded in spore form in some remote and unsuspected area of the economy.

Pasteur further proved that the worms could become infected with this disease in two ways: (1) By direct contact, the infected worms crawling over the healthy and puncturing them with their hooked feet. (2) Indirectly, by soiling the mulberry leaves on which they feed with the very infectious excreta. He also demonstrated that the corpuscles developed chiefly in the chrysalids on the eve of reproduction. We may here bear in mind that while the association of poliomyelitis with the period of dentition of childhood has been so notable as to develop the two common names of the disease, teething palsy and infantile paralysis, we are only now becoming aware of the percentage of adolescent males, and it may be of pregnant women and unborn children attacked. The periods of dentition, of adolescence in the male, and of quickening in the female are the periods of high tide in the nutritional development of man.

The silkworm increases to 15,000 times its own weight during the first month of its existence (Vallery-Radot, Vol. I, p. 205). It is during this time of extraordinary increase in nutrition and soft flux that it becomes most subject to the attack of pébrine. Is it therefore possible that an organism which in the slowly developing human being rarely if ever attains to more than ultramicroscopic size, might in such culture media take on microscopic size?

Before summarizing, it must be noted that the summer of 1908, which preceded the spinal paralysis, Pasteur announced there were two diseases of the silkworm. Flacherie, or morts flats, was so-called because the worm, sickening of this disease in the fourth molt, turned black and was found dead and empty with the contents of the body cavity consumed away. Pasteur considered this a disease of the digestive system due to vibriones and contagious. He elsewhere speaks of the germs of flacherie as bacilli, and also of spores of these germs, similar in appearance to the corpuscles of pébrine. In Oc-

tober, 1868, Pasteur, fresh from the study of these germs whose contagiosity he had demonstrated, was after an acute febrile onset, prostrated by an attack of flaccid spinal paralysis, progressive and regressive in character.

Drawing an analogy between the reactions of a transmissible disease as it affects the human race, and any given insect, is a delicate matter, for it treats of an almost unknown subject. If, however, we can establish that a domesticated insect which was of healthy stock at the time of its introduction into the human dwelling, became after many generations and decades of years the subject of an epidemic disease; if we can ascertain that certain signs and symptoms are constant accompaniments of the epidemic when it attacks these insects; if not dissimilar signs and symptoms are the constant accompaniment of an epidemic disease known to attack the residents of the same territory; if a scientist while engaged in the investigation of the one epidemic, is taken acutely ill with symptoms suggestive of both diseases, we are warranted to make a close and particular study, which will prove or disprove such relationship.*

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*This study was submitted to the criticism of Dr. Mazyck Ravenel, Director of the Hygienic Laboratory of Wisconsin University, and a student at the Pasteur Institute in 1894. Dr. Ravenel informs me that an impression existed that the illness at midlife had been occasioned by a specific infection. A review of the carefully recorded symptomatology demonstrates that the symptoms do not accord with those of hemorrhage from an atheromatous artery nor of cerebral gumma, thus disposing of an unfounded imputation. The study was completed in March, 1912. In September, 1912, the successful transmission of epidemic poliomyelitis by the biting stable fly, *Stomoxys calcitrans*, was announced by Drs. Rosanau, Anderson, and Frost. Subsequently the germ of poliomyelitis was cultivated and demonstrated by Noguchi.

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## A PLEA FOR EARLY LAPAROTOMY IN ABDOMINAL DISEASES.

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With the present advance of science the general practitioner is put into the position of a skilled workingman, who is a part of a whole system of man and machinery, used to produce a certain article. No one expects, with the present state of division of labor, a single person to complete an instrument, for instance; while it is true that the skilled mechanic will understand well all the parts and know how they are produced, he will not make the article by himself. The same is true of the internist of today. He must recur to the laboratory man, the *x*-ray man, and the surgeon, not only to treat but also to make a proper diagnosis. The physician may be an expert in his line, but where there is a question of the life of his patient, he becomes a man with feeling and sympathy for his brother man and will not decide one way or the other unless he has the opinion of someone else who may have more experience on that subject or may have had success in such cases before. We hesitate little in getting the opinion of our friend, the internist; we rush very often to the laboratory man, or *x*-ray specialist, but somehow we hesitate to call the surgeon in—at least we call him in very often as the last resort, and what is more, we seldom take his opinion as final.

The patient nowadays understands as well as the physician the development, the science and art of medicine are undergoing and will very often demand the opinion of specialists on his case—and he, as well as the physician, is reluctant to take the opinion of the surgeon as final.

It is on the importance of the surgeon's opinion and interference in medical cases that I want to speak in this paper.

The part of medicine where the surgeon's opinion and interference is of the greatest value and importance to the patient as well as the physician is the one treating abdominal diseases, and that at an early stage, for when a diagnosis can be made without the surgeon the case is either acute or such that interference is of no use. I do not mean to say that the medical man cannot or does not make the diagnosis—what I mean is that the medical man waits for too many positive signs before he calls in the surgeon. Who of us has not examined a patient coming to the office and as a result of this examination have found the conclusion that someone has missed a chance of an early diagnosis and that the patient is past all help.

We know well that the physician, as well as the layman, feels that the surgeon uses the knife only too often. But putting all economic reasons aside, what is better tactics; to remove a healthy appendix through a mistaken diagnosis or treat a man medically for an ulcer of the stomach until it has become an incurable cancer? I shall leave it to you to judge.

With the present stage of surgical knowledge—technique and asepsis—it becomes a question what is more safe for the patient—a laparotomy by an expert, even if it is for diagnosis only, or the continuance of treatment with drugs and losing valuable time by the internist.

Taking up abdominal conditions that give us most trouble as to diagnosis we find that very often a gallstone colic will simulate a gastric ulcer, also acute appendicitis; appendicitis will often make us think of some tubal condition. Have we not seen cases of chronic appendicitis diagnosed as prolapsed kidney, etc.? All these diagnoses may be made by very good men and why should the patient not get the benefit of the doubt and have the surgeon decide the question and thereby save or prolong life or make life less miserable?

I have before me a few cases that I want to describe to you to illustrate my contention. Before doing that, however, I want to quote a few authorities on the subject of surgical interference in medical cases.

First, I shall state that the danger of laparotomy in clean cases is the danger of anesthesia only, that the mortality of lapartoomy per se is nil. This statement is based on statistics obtained by Dr. John

C. A. Gerster in Mt. Sinai Hospital and also on the experience of the Mayo Brothers. Gaston Lyon, in his "Diagnosis and Treatment of Stomach Diseases," on page 376, says: "If one does not wait until the last stages to operate on a patient suffering from pyloric stenosis, the chances for non-success are nil in the hands of an able surgeon." Also, if it is true that perchance in rare cases the death of a cancerous patient has been hastened by intervention, many have been saved by early surgical interference who would surely have died if not operated upon, and we must consider the surgical treatment of pyloric stenosis as one of the greatest conquests of surgery.

On page 578, the same author says: "Laparotomy is a means both of diagnosis and treatment in certain stomach conditions. An exploratory laparotomy is justifiable in all cases where the patient presents symptoms that do not respond to medical treatment, like vomiting, pain becoming more and more severe; when one can rule out a nervous state, or when one is justified in thinking of a physical obstruction." On page 380, quoting statistics, Lyon finds that in ninety-three cases operated on the earliest recurrence was after three years.

Van Hacker gives a case of six years and Czerny, Löbker, and Franck have cases of seven years post-operative freedom from recurrence. One of the most important points the author insists upon is an earliest possible diagnosis, for in the early stage of cancer we find both a small and movable tumor and a patient in general good condition.

As to results of gastroenterostomy the statistics show a reduction of mortality from 20 to 30 per cent. to 5 and 8 per cent. at the present day. The general improvements are such that the vomiting ceases, weight is gained, appetite is improved, and generally the patient gets a temporary new lease of life.

Pirilla in the *Archiv für Verdauungs Krankheiten*, Bd. 18, page 294, reports from the medical department of the University of Helsingford a series of 120 cases of ulcers of the stomach; of those that were medically treated 30 per cent. died of their ulcers and sequelæ; 28 per cent. of these cases died within one or two years after discharge from hospital.

Speaking of gallstones, Kelly, writing in Osler's "Modern Medicine," states that "The risk of gallstone operations is the risk of delay—since with delay serious infections of the biliary tract supervene. . . . The operation is indicated in those cases in which with reasonable certainty the presence of pericholecystic, perigastric, or periduodenal adhesions may be surmised. The fact that the operative results are not what they were hoped for is not in itself a contraindication to operation; on the contrary, these untoward results are often attributable rather to the fact that in many long delayed cases the anatomical lesions are such as to be almost if not quite irremediable by any and all means at our command."

In the same work he states: "Even the suspicion of malignant disease is an indication for an operation, the hazard of the operation is less than the risks attendant upon delay . . . the operative treatment of cholelithiasis naturally tends to reduce the incidence of carcinoma of the gall-bladder; this in itself is a prophylactic measure."

Of the value of lost time in acute and subacute and even chronic appendicitis I shall not speak, as this is a subject with which every practitioner is only too well acquainted.

The cases I want to quote are the following:

Case I.—Baby Berman, nine months old. Suddenly started to vomit and family called me to see the child two hours later. When seen the child looked sick; vomited after taking the slightest amount of water. Bowels had not moved since the previous day. An enema was given and same returned forcibly, consisting of clear water. No masses felt. Slight resistance of abdominal wall. Diagnosis of intussusception was made and child transferred to Lebanon Hospital. Dr. Kakel operated on it at once and a mass was found in right hypochondriac region consisting of ascending colon and cecum. Child made an uneventful recovery and is five and one-half years old today.

Case II.—Baby L., 18 months old, bottle baby. Mother suffered from convulsions previous to and during pregnancy. The baby suddenly started to vomit in the morning and felt bad. When I saw it, the child gave no physical signs. Toward evening mother reported baby well. An hour later child began to vomit a fluid of a brownish color and fecal odor. It was taken to Mt. Sinai Hospital and operated on at one o'clock in the morning by Dr. Moschcowitz. The intestines were found collapsed. The child continued vomiting after the operation until the next day, when it died. Diagnosis: intussusception; late operation.

Case III.—Baby F., 15 months old, suddenly vomited; had been constipated. Mother gave an enema, some bloody fluid returned. I saw the child a couple of hours later; it looked sick; abdomen was distended; no masses were felt; there was slight protrusion of rectum through anus. Diagnosis: intussusception. Taken at once to Mt. Sinai Hospital, operated on a few hours later by Dr. A. A. Berg. The mass was found and reduced. The child is well today.

Case IV.—Mrs. M., 35 years old. Has had three children. For the last few years has been suffering pain in the abdomen—first in the lower part, but when the patient was seen it was sometimes at McBurney's point and sometimes in the region of the gall-bladder. She had lost weight and felt so bad that she made up her mind to be operated on, though she did not know for what. Has been treated medically for several conditions for the last few years by different physicians. Her life was a burden to herself and to her whole family for the last three years. Was admitted to St. Luke's Hospital—operated on by Dr. Lyle. An incision was made over the appendix, and this part was found chronically inflamed with adhesions spreading up to the gall-bladder. Another incision was made over the gall-bladder which was found full of stones—over one hundred being taken out. So many adhesions were found over the whole right side that one wondered she had lasted so long. She made a perfect recovery.

Case V.—Mr. M., musician, 35 years old, has been treated medically for hyperacidity and then for ulcer of stomach for the last five years. Lately he became very sick and a diagnosis of gallstones was made. Condition became so severe that he made up his mind to be operated on. Dr. A. A. Berg operated on him at Mt. Sinai Hospital. An ulcer of stomach was found with very extensive adhesions to the surrounding viscera. The adhesions could not be removed so a gastroenterostomy was performed. The patient made a good recovery, and regards himself now as perfectly well.

Case VI.—L. C., 35 years old. For the last seven years suffered abdominal pain. Diagnoses of gallstones, floating kidney, hyperacidity, and pyloric ulcer were made by different responsible physicians. At last he became so ill that he demanded an operation. Dr. A. A. Berg operated and found a pyloric ulcer. This was excised, and a gastroenterostomy with temporary occlusion of the pylorus was performed. Patient recovered, gained health and weight. On and off he suffers from indigestion, due to errors in diet, but otherwise feels well.

Case VII.—Mrs. X., a woman of sixty, began to have pains in the right hypochondriac region, vomiting and getting weaker all the time. Diagnosis of inflamed bowel was made. She was put to bed and treated medically. Lost weight and strength during the two or three months that she was treated by three different physicians. At last she was told she was well enough to go to the country to recuperate. When I saw her she had pain over the gall-bladder, in which region resistance was made out and a mass felt. She went to hospital for operation on gallstones. Dr. A. A. Berg confirmed the diagnosis but refused to operate as the patient was too much exhausted. Two days later she suddenly expired.

Case VIII.—Mrs. G., sixty-five years old, three years sick on and off with pain over gall-bladder region. Has been treated by her family physician and was told she had indigestion. Was seen by several physicians and no operations were suggested at any time. When patient was seen by me the first time a few months ago, a large mass was felt over the gall-bladder. Abdomen distended and contained some free fluid. When the patient was seen a month later the abdomen was full of fluid, there was edema of the extremities, and the patient was in a dying condition, her disease being inoperable.

Case of Baby Berman, early diagnosis, early operation, good results. Symptoms were not classical, but then who would wait for them. Patient was given the benefit of the doubt and recovery perfect.

Case of Baby L., loss of time for sufficient symptoms—parents did not think child sick enough for physician to call again and by that time the shock was sufficient to kill the baby.

Child F., early diagnosis, early operation, good result.

Mrs. M., wasted several years in misery, no positive diagnosis could be made, every physician who treated her saw different symptoms, and no surgical interference was advised. Luckily she took matters into her own hands, decided for herself and thereby saved her own life. It is hard to tell whether she suffered originally from an acute appendicitis, or from gallstones and associated inflamed gall-bladder causing adhesions to extend down to the appendix. However, it is very hard to say how far or near she was to lose her life under the medical treatment she underwent for the few years of her suffering.

Mr. M. What will happen to the tumor or mass of adhesions that Mr. M. has stored away around his pylorus—time alone will tell—but if it speak in the language it usually does in those cases—medical treatment will get another victim sacrificed to its persistence in doing things blindly as they ought not to be done.

Mr. C. well illustrates a case that has been saved at the stage where Mr. M. should have been gotten at. His ulcer is out and if he behaves, we know he will be a well man. We are more sure of him, though he suffers from occasional indigestion due to indiscretion in diet, than we are of Mr. M., who feels well today—a year after operation.

Why Mrs. X. should have been kept in bed for several months and reduced to a stage of absolute exhaustion, I cannot tell. When seen first by one or two of her physicians, the family was told distinctly that she was not very sick and that a little rest would bring her around very quickly. No surgical interference was advised, though the family wanted to know whether there was anything to operate on.

Mrs. G. represents the usual picture every physician sees on and off. At the beginning of the game, when something could have been done, the patient was treated with our good grandmother's mixture of rhubarb and soda—and when symptoms became classical of carcinoma, the woman was condemned to death in a classical manner.

I want to add that the different physicians treating the different cases described here were all able men and fully competent to make a proper diagnosis, and the different diagnoses made at different times on the same patient were fully justifiable, but what I contend is that just for these reasons, the fact that these patients were not giving definite data for one positive diagnosis, they were entitled to the benefit of the doubt and should most of them have been turned over in proper time to the surgeon for a laparotomy, if only to clinch the diagnosis and thereby prolong or save life.

1446 Prospect Avenue.

## VENEREAL DISEASES IN THE NEGRO, WITH SPECIAL REFERENCE TO GONORRHEA.*

By JOHN O. RUSH, B. Sc., Ph. G., M. D.,

MOBILE, ALA.

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This subject is no new one, but it has been brought to my special notice by Dr. Wm. A. Steel, of Philadelphia, Pa., who, on December 27, 1912, wrote me a circular letter concerning an article in the edition of September 21, 1912, of the Medical Record, by Dr. J. Madison Taylor. Dr. Steel, in his letter says: "The article of Dr. Taylor has excited a degree of unfavorable criticism from different sources, who contend that the imputation is not fair to the negro race." He closes his letter with the following questions:

"In your practice, as compared to the white race: (1) Is gonorrheal urethritis more prevalent among the adult male negro? (2) Are its sequelæ, pyosalpinx, pelvic abscess, etc., more common among the adult female negro population? (3) Is the proportion of gonorrheal ophthalmia greater among the negro newborn? (4) Is the disease more prevalent among the city or country population? (5) Is the disease as virulent in the colored population? (6) Is chronic gonorrhea, and its sequelæ, prostatitis and seminal vesiculitis, more prevalent in the negro male? (7) Are these conditions responsible for sexual lawlessness mentioned in questions stated in Dr. Taylor's article?"

I had not read Dr. Taylor's article until after I had received Dr. Steel's letter, since which time I have read and re-read it several times, and there is not one thing apparently unfair or unjust to the negro race contained therein. The article is true from beginning to end, and one has only to read it partly through to be convinced that Dr. Taylor is not theorizing, but is discussing a subject plainly and fairly, as only one who is thoroughly conversant with a subject can. He gives credit where it is due, and speaks in plain terms of the weaknesses and the deficiencies of the negro as a race. And from my personal knowledge of the negro, and his habits, and his mode of living, I must say Dr. Taylor is liberal.

For the past seven years I have been in charge of the department of genitourinary diseases and syphilis of the Dispensary School of Medicine of the University of Alabama, acting assistant surgeon U. S. Marine Hospital, attending genitourinary surgeon City Hospital, during which time I have treated 7,000 negro men, and I have never questioned more than a very few and received a negative answer as to his having had gonorrhea. The pitiable part of it is they do not consider gonorrhea a disease, but "just an overstrain," to which they pay little or no attention so long as there are no attendant complications. The average negro male believes all necessary to cure "a little thing like the

*Read before Mobile County Medical Society, Mobile, Alabama, February 22, 1913.

clap" is to take a small pill made from the resin of the pine tree, or ten drops of turpentine on a piece of sugar, three times a day, or inject into the urethra pure spirit of turpentine. And the majority of them believe firmly that the quickest, surest way to cure it is by excessive sexual intercourse, or if they can have sexual intercourse one time with a virgin they will be cured of any and all venereal diseases. I have had them tell me this often. I should like to lay stress on this "method of cure." It is not infrequent that I have little negro girls, ranging in ages from seven to twelve years, brought to me for treatment for syphilis, chancroids, or gonorrhea, the victims of this belief. Last year a negro woman, aged thirty-two, and married, was referred to me for treatment. Upon examination it was found that she was suffering from multiple chancroids and gonorrhea. The next day she returned, bringing her five-year-old boy, who, upon examination, was found to have gonorrhea, a large chancroid underneath the prepuce, and a suppurating bubo in his left inguinal region. Suspecting the source of his infection, I questioned the mother privately, and she told me she had "always heard that if a person had any disease of the privates, they would be cured if they had intercourse with someone who had never had intercourse before." So she made use of this little boy, but said, in extenuation, "I didn't know I could give any disease to him. I thought it would cure me. I thought little children couldn't have such diseases." This particular case, in which all of the revolting details may be scoffed at as being unusual among negroes, is cited as one instance out of many as confirming my argument that negroes of the South, male and female, resort to revolting practices, founded on honest belief, to rid themselves of venereal diseases.

I have had a number of such cases on my service during the time I have been on service at the University Dispensary.

At present we have thirteen negro male patients in the Marine Hospital, ranging in age from nineteen to sixty-five years, and all of them admit having had gonorrhea; several say they have had it nine or ten times, but don't consider that anything. One man said to me to-day, "Why, Doctor, I don't mind having the clap; it don't bother me, and all I do for it is just get me a woman and stay with her until it stops running." All of them give histories of suffering from prostatic inflammation, and several of them have been patients of mine for acute gonorrheal epididymitis, several I have operated upon for urethral stricture (external urethrotomy).

In one ward of our City Hospital there are at present twelve negro male patients, and of this number all twelve have had one or more attacks of gonorrhea, and some of them are there now for treatment for some of the complications of gonorrhea. During the year 1911 we treated in the genitourinary dispensary at the University 1,960 men; of this number 1,900 were negroes, and of the 1,900 all gave histories of having had one or more attacks of gonorrhea, and the majority of them had been patients there in previous years for the same disease. During 1912 we treated 2,500 patients in the same department. Of this number 2,300 were negroes and 2,100 gave histories of having had one or more attacks of gonorrhea, or were then there for treatment for their first attack.

It is a rare exception to find a negro who will take treatment for gonorrhea for a longer period than one week, and most of them give it up even in a shorter time. We are striving daily to teach them the necessity of medical attention in such cases and the importance of a cure. Our dispensary is rapidly growing, and we see an increase in the number of times patients come for attention. Our present trouble is to convince them of the necessity of refraining from sexual intercourse while the disease is active, and to show them the havoc wrought by men who do not do so—but my words of advice and warning go in one ear and out the other. For instance, a few days ago, a young negro presented himself for treatment with a virulent attack of gonorrhea, of five weeks duration. He asked me, "How long before I can 'do business' again?" And I told him possibly two months, if he took treatment properly. He laughed and said, "Now, looker here, Doctor, you're jokin'; you know dere ain't a nigger in dis worl' goin' to stay 'way from a 'oman two weeks, less 'lone two months. Man, I ruther be dead."

Another thing, they will not give up alcoholics. Beer and whiskey are drunk just the same as before the attack by those who drink, and one can readily see the work of a genitourinary surgeon is an uphill road all the way with such patients to deal with, and because of their indifference to the gravity of the disease they go on spreading it in new soil whenever and wherever possible.

Dr. W. R. Jackson, an eminent surgeon of this city, in speaking of the negro relative to gonorrhea, once classified them as follows: Those who have had it; those who have it now, and those who are going to have it. And my dispensary and hospital work during the past seven years has proven that he is much nearer right than wrong, for I have found it almost exactly as he stated.

Replying to Dr. Steel's questions, I shall take them in the order in which they come:

"In your practice as compared to the white race: Is gonorrheal urethritis more prevalent among the adult negro?

Answer: Yes, the proportion will be easily ten negroes to one white man, and this is easily understood when you realize the difference in personal hygiene, mode of life, occupation, degree of education, and difference in sexual appetite of the two races.

"Are its sequelæ, pyosalpinx, pelvic abscess, etc., more common among the adult negro female population?

Answer: Yes. I am told by several surgeons that the proportion of pyosalpinx is six negroes to one white. Also, that the majority of the operations on adult female negroes are for gonorrheal pelvic lesions. To get a correct statement of facts in answer to this question, I refer you to Drs. W. R. Jackson, P. J. M. Acker, Wm. Mastin, C. H. Mastin, W. R. Sherrard, H. P. Cole, W. T. Henderson, E. G. Gavin, and H. T. Inge, all of Mobile, and all of whom have an extensive practice and experience in abdominal surgery.

"Is gonorrheal ophthalmia proportionately greater among the negro newborn?"

Answer: The proportion of negroes who employ physicians to attend them at childbirth is so small relatively that there is no way to arrive at any definite answer to this question. Nearly all negroes have midwives to deliver their babies, and these midwives, as a rule, are ignorant old women who have no more idea of asepsis and antisepsis than they have of the correct translation of Homer. It

is common practice among them to wash out a newborn baby's eyes with "chamber lye"—*i.e.* urine. Last year a negro woman brought a baby to the dispensary with a most virulent gonorrheal ophthalmia, and, upon questioning, it was learned the baby's eyes had been "cleansed" at birth with "chamber lye," choosing for this occasion the urine of an aunt, whose urine, it was claimed, made "chamber lye" especially suited for this purpose.

"Is the disease more prevalent among the city or country negro population?"

Answer: The city population. Reason: Segregation, dissipated mode of life, access to places of debauch, etc. The country negro works in the open air, as a rule, has a comfortable house to himself, leads a more sober, industrious life. His habits are cleaner, his environment purer, his ideals higher, his neighbors few, and, as a consequence, he, as a rule, is a more desirable citizen. In the cities where they crowd the fight for existence is harder, the temptations more and greater, and the environments, as a rule, the very worst for them.

"Is the disease as virulent in the colored race?"

Answer: Yes, and more so, for everything is done by the patient to make it so, viz., absolute disregard to treatment, persistence in sexual gratification, dissipation, poor nourishment, and unhygienic home surroundings. Everything which would tend to assist disease against nature.

"Is chronic gonorrhea and its sequelæ, prostatitis and seminal vesiculitis, more prevalent in the negro male?"

Answer: Yes; nearly every negro who comes under my observation has either one or both of the aforesaid sequelæ, and often many more.

"Is this condition responsible for sexual lawlessness mentioned in Dr. Taylor's article?"

Answer: There is no question that this condition has to do with sexual lawlessness, but to it alone cannot be laid the blame, for I am sure cocaine, poor whiskey, and bad influences have ruined many negro men, irrespective of venereal diseases. However, these all go hand in glove; usually where you find one the others are present, or soon follow. That the irritation caused from an inflamed prostate produces erections, creates a desire for sexual intercourse, and has often been the cause of sexual lawlessness is a fact. I know of two cases which could be attributed to that cause more than to any other, yet it would be too broad an assertion to say this is the whole cause.

Inasmuch as Dr. Steel confined his query to gonorrhea and its sequelæ, I have not devoted any part of this paper to syphilis and its ravages among the negro race, but I cannot refrain from alluding to it and quoting from an article entitled, "Some Economic Questions Relating to Syphilis," by Dr. Isadore Dyer, dean of the Tulane Medical School. This article appeared in the January edition of the *Southern Medical Journal*. Dr. Dyer is one of the greatest authorities on dermatology, and his opinion is certainly of greatest value. He goes on to say: "The South has its peculiar problem in this regard to the negro population, which it is hard to educate in sanitary or moral prophylaxis. The older our civilization grows the less virulent syphilis becomes, and it is chiefly among the negroes that we find the more malignant types of syphilis surviving to-day. Their habits of life under conditions of semi-poverty, immorality, exposure, and lack of hygiene, make the problem more and more difficult, and it cannot be solved without radical measures aiming at a forced treatment under hospital care. In an experience of over twenty years of hospital practice I have known of but one negro to take treatment for syphilis properly; the usual observation is that as soon as the evidences disappear treatment stops, and it is in these poor devils that the ravages of an insidious disease develops all the evils which follow its neglect."

The negro of the South belongs here now. He did not come of his own free will; he was brought here, and is here to stay a permanent fixture. And it is no one's desire that he should leave, so long as he fills the place of a citizen; but when his status is such that he is a public charge or a menace, then it is time to devise ways and means to remedy this evil.

Before he is taught the mathematical value of the parabolic curve, the distance from the earth to Mars, whether or not there are three or four dimensions, and how mathematically to prove it, or the chemical composition of salvarsan, he should first be taught life as it should be lived—not as any particular religious creed thinks it should be, but from a hygienic point of view. Do away with so many creed-teachers and give them teachers on sexual psychology and hygiene, beginning from the time they are twelve years old, and taught until their education is finished. It is a great pity some of the large-hearted philanthropists who bequeath fortunes for the education of the negro do not specify that about one-half of the amount donated be used in establishing such courses of study. Not only should these branches be taught in negro school and colleges, but in the institutions of learning for our own young people. This has been the fault in our white schools and colleges, not only in the South, but all over the United States. They have failed to teach young men how to live, and by this I mean they have allowed them to go on ignorant of the sexual side of life except as it could be learned from a fellow-student's personal experience. Legislators should pass laws requiring all persons suffering with venereal diseases be confined to hospitals until such time as they are found to be free of infection, and a law which should require all marriage licenses to have certificates of health attached before it is lawful for a minister, priest, or officer of the law to perform the marriage ceremony.

With the rigid enforcement of such laws we would soon have the negroes and whites alike appreciate the gravity of such infection and would put a check on promiscuous sexual intercourse. Those who ignored the law could not escape the marriage license provision.

The negro is not to blame for his disregard for the consequences of venereal diseases, for he is allowed to run at large with no restrictions save the advice of a physician (when he has one). Then, too, he hears white men discuss such matters as things of no consequence, therefore utter disregard for such conditions is but natural.

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**Pregnancy and Tuberculosis.**—H. v. Bardeleben concludes that old, latent, inactive processes in the lungs do not furnish an indication for artificially terminating pregnancy. The patients with these lesions should, however, be kept under close observation, for in some of them the tuberculosis may light up in the later months. In cases with clinically active tuberculosis, excepting cases with simple apical catarrh, and in cases of apical catarrh after the fourth month, mere termination of gestation does not result in any special advantage to the woman.—*Zentralblatt für die Gesamte Gynäkologie und Geburtshilfe sowie deren Grenzgebiete.*

# A SIMPLE AND SATISFACTORY METHOD FOR REMOVING ADENOIDS AND TONSILS.

By WILLIAM WESLEY CARTER, A.M., M.D.,

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In this short communication I wish to disclaim any desire to add to the confusion, which it seems to me can always be safely predicted whenever the subject of adenoids and tonsils is brought up for discussion.

I believe that no one operation will ever be generally accepted as being the best, for almost every operator has had sufficient experience with this very common ailment to have formed his own ideas. His technique, therefore, is based upon those ideas, and he performs the operation in the manner in which he believes he can do it most skillfully. It would therefore, be the acme of arrogance on my part to claim that my methods are superior to those of other operators, and should be generally adopted. I will not place myself in this unenviable position, but after many hundreds of operations on the tonsils, in which almost every method was tried out, I have adopted a technique which is simple, safe, and efficient, and attended by a minimum of trauma to the surrounding parts, and I believe that its many advantages will justify my temerity in offering a further contribution to the already overcrowded literature upon this much discussed subject, the importance of which, however, cannot be denied.

We will assume (1) that a palapable pharyngeal tonsil constitutes adenoids that should be removed. (2) That a diseased faucial tonsil is diseased in its entirety and should be removed completely, and that this can be done with assurance only when its capsule is included.

Two objects must be constantly kept in mind: A minimum of injury must be inflicted upon the tissues adjacent to the tonsils, and the offending growths must be thoroughly removed.

Too much stress cannot be placed upon the importance of protecting the palatal pillars. This protection should be afforded not only the muscular structures, but also the mucous membrane covering the pillars, for every injury means the subsequent formation of scar-tissue with its attendant contractures. Injury to the pillars, especially the posterior, may result in difficulty in swallowing, and in the return of fluids through the nose. This symptom is usually transient but may persist for some time. The injury to the voice, in my opinion, is never recovered from if the pillars have been badly mutilated.

Hemorrhage to any large extent can usually be avoided if we remember that it almost invariably comes from injured pillars, though the venous plexus at the base of the tonsil is sometimes responsible for very troublesome bleeding.

I must mention here that I never operate upon a throat without first examining by both inspection and palpation for an abnormally placed carotid, and on more than one occasion I have been rewarded for my pains by discovering a tortuous, pulsating carotid posterior to the tonsil, which I might have injured in the operation had I not been aware of its presence.

If injury to the soft palate is very severe, the resulting adhesions and contractures will prove a permanent injury to the voice and a constant menace to the health and comfort of the patient, unless they are relieved by an operation, and this is difficult and its results uncertain. On three occasions I have seen the nasopharynx completely closed by cicatricial tissue, due to the unskillful use of the Brandegee adenoid forceps. Such cases are deplorable, for the function of the damaged parts can never be restored to normal.

I have tried out on a sufficient number of cases nearly every procedure that has been advocated for the removal of tonsils, and in my hands the following technique has proved the most satisfactory.

*Instruments Used.*—(1) Denhart's mouth gag. (2) Tongue depressor. (3) Carter's spiral tonsil tenaculum. (4) Carter's sharp tonsil separator. (5) Eves' tonsil snare. (6) Gottstein's adenoid curette.

Most of these instruments are familiar to all, but I will call attention especially to the two instruments devised by me, as they have proved most useful, and their construction and application have never been fully described.

The *spiral tenaculum*, which was devised about three years ago, consists of two spiral prongs, each compassing half a circle. These are attached to a long slender shaft with octagonal handle. The prongs of this instrument are purposely made only a half circle in length in order that it may be easily and quickly engaged or disengaged by a half turn in either direction. This insures the safety and convenience of the instrument. In soft, mushy tonsils it is necessary to make several turns of the instrument in order to engage it in the firmer and deeper tissue which in such tonsils is found nearer the capsule. The instrument is especially useful in submerged cases. Here it can be introduced into the tonsil without engaging the pillars, even though only a narrow slit may separate the latter. When the instrument is engaged it gives perfect control of the tonsil, and enables one to adjust the snare with great precision. An important point in the use of this instrument is that a certain amount of torsion must always be kept up when traction is being made in order to overcome the reverse action of the inclined planes of the spiral prongs.

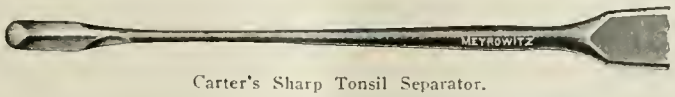
Carter's Spiral Tonsil Tenaculum

Recently there has appeared the inevitable modification of my instrument; this so-called modification has several turns of the spiral prongs. This design adds neither to the convenience, the efficiency, nor the safety of the instrument. It cannot be introduced or removed as quickly, it cannot hold the tonsil more firmly, and it is liable to be screwed through the tonsil and into the constrictor, thus endangering important structures. It is a form carefully and purposely avoided by me in devising my own instrument. I may add that my instrument as made by some manufacturers bears only a slight resemblance to the original model, which was made under my own directions. The instrument involves delicate

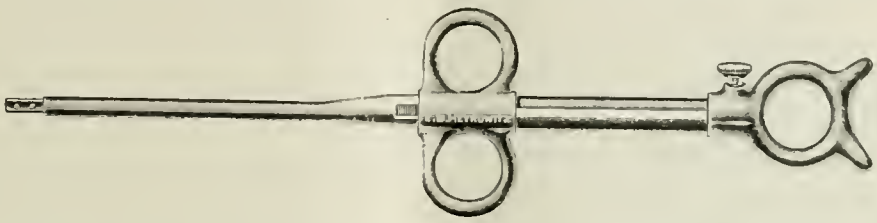
mechanical principles and should be correctly made in order to be effective.

The *tonsil separator* consists of a short beveled blade, curved on the flat. It is sharp on both sides and the end, and is used to cut through the plica and the mucous membrane along the margin of the pillars. It also serves as a lever to assist in lifting the tonsil from its bed.

*Description of the Operation.*—The patient, lying flat on the table, is thoroughly anesthetized with ether; the operator is stationed on the right of the patient, the anesthetist at the head, and the nurse with sponges on the left. The mouth gag is placed on the left side of the mouth. The throat is inspected for abnormal arterial distribution, and the location of the adenoids is definitely fixed by digital examination. The *spiral tenaculum* is then engaged in the right tonsil, which is pulled towards the median line. The *tonsil separator* is then introduced at the margin of the anterior pillar, and the mucous membrane is cut through, care being taken not to cut into the capsule. The posterior pillar is liberated in like manner. The separator is then passed under the anterior pillar, which is used as the fulcrum, and the tonsil is pried out, traction being made all the while by means of the tenaculum. The loop of the Eve's snare is then passed over the tenaculum and adjusted about the tonsil, which has been lifted entirely from its bed. When the loop is brought home it follows the line of cleavage between the capsule and the adjacent tissues and the tonsil is removed on the tenaculum with its capsule intact. The same operation is repeated on the left side.




Carter's Sharp Tonsil Separator.



Eve's Tonsil Snare.

The adenoids which have been previously located are then removed by one stroke of a well sharpened Gottstein curette, and the nasopharynx is wiped out with gauze wrapped about the index finger. This removes any fragments of adenoid tissue that may have been left, and also limits the hemorrhage from this area.

In conclusion I may say that my results by this method have been uniformly good and that I have never had a case of alarming hemorrhage nor complications resulting from injury to the soft palate.

69 West Fiftieth Street.

**The Action of Radium Upon the Blood and Upon Arterial Pressure.**—Giovanni Giacchi conducted his investigation upon 17 patients under treatment at the Policlinic Humbert I. The patients were exposed to the direct action of radium emanations in the emanatorium attached to the Institute of Clinical Medicine in Rome. The effects noted were as follows: There is a reduction in the amount of hemoglobin as well as in the numbers of red blood cells. Following the first exposure to the emanations there is an increase in the number of leucocytes, but following the later exposures there is a diminution. As regards the leucocytic formula it is noted that the polymorphonuclear neutrophiles in general increase in number but undergo a diminution following prolonged exposure to the emanations. The eosinophiles increase. There is a relative and an absolute increase in the basophiles. The large mononuclears increase in number. The effect of radium is to cause a diminution in arterial pressure.—*Il Policlinico.*

## Medicolegal Notes.

**Compensation of Health Officer.**—The Kentucky statute, section 2055, provides for the appointment of county boards of health and of a health officer, the amount of whose salary shall be fixed by the fiscal court at the time or immediately after his election. In no case is the health officer to receive from the county any compensation for his service other than the salary fixed by the fiscal court. The health officer resigned on account of insufficient remuneration. The board of health refused to accept his resignation, and during his term of office delegated certain of his duties to another, who was afterward appointed health officer. The latter claimed from the county compensation for services rendered both before and after his appointment as health officer. It was held that the county was not liable for services rendered during his predecessor's term of office, as that would be an evasion of the statute; and it was not liable for services performed by him after his own appointment, as these would be included in the salary fixed by the fiscal court. The salary so fixed must be reasonable, and relief could be had from an order of the fiscal court fixing an unreasonable salary by appeal to the circuit court and thence to the court of appeals.—Hickman County v. McMorris, Court of Appeals of Kentucky, 147 S. W. 768.

**Expert Testimony—Graduate Nurse.**—In an action for personal injuries a graduate nurse, who had nursed in familes, some of the members of which were epileptic, but who had never nursed in cases of epilepsy, was held not competent to testify as to whether certain symptoms indicate epilepsy. Any person could testify as to whether or not another had had a "fit," but it might require some considerable study of disease to be able to testify whether a "fit" was of an epileptic character.—Shawnee Gas & Electric Co. v. Hunt, Oklahoma Supreme Court, 122 Pac. 673.

**Burden of Proof.**—In an action against a surgeon for alleged negligence it was held that proof of the fact that a drain was left in the defendant's breast after the removal of a tumor imposed upon the defendant the burden of explaining that its presence there was not due to his negligence.—Evans v. Munroe, Rhode Island Supreme Court, 83 Atl. 82.

**Medical Authorities—Cross-Examination.**—In an action for personal injuries a medical expert had testified as to his opinion regarding the effect of the injuries in causing diabetes mellitus. It was held to be error to permit the cross-examination of the witness by questions as to medical authorities, the effect of which was to impress upon the minds of the jurors the idea that certain writers were men of eminence in medicine whose opinions were of value, and that their opinions differed from that expressed by the witness. The matter comes under the settled rule that neither medical books, though of recognized authority, nor the opinions of medical experts unless testified to by themselves as witnesses, can be received as evidence.—Allen v. Boston Elevated Ry. Co., Massachusetts Supreme Court, 98 N. E. 618.

**Expert Testimony—Mental Capacity.**—The proponents of a will and its contestants each called a medical expert on the question of the testator's mental capacity. Hypothetical questions were framed by each side, covering a period of four years and including many disconnected, trivial and insignificant circumstances, most of them as consistent with mental capacity as with mental incapacity. The opinions of the experts on the hypotheses respectively submitted to them were diametrically opposed. It was held that the surrogate, as trier of the fact, could not separate the facts so as to ascertain on which facts the experts relied, and must determine for himself the question of mental capacity.—*In re* Benjamin's Will, 136 N. Y. Supp. 1,070.

# MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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## THE SERUM TREATMENT OF EPIDEMIC MENINGITIS.

AT the present time there probably remains little doubt in the minds of physicians of the efficacy of the serum treatment of epidemic meningitis. It is, however, not the less interesting and important to note just how valuable this treatment has proved to be. The Rockefeller Institute for Medical Research began the preparation and distribution of the antimeningococcus serum in 1906 and continued it until a short time ago when the work was turned over to the Department of Health of New York City. During this period the Institute collected the records of 1,294 cases which received the treatment. Flexner, in an article analyzing these records (*Journal of Experimental Medicine*, 1913, xvii, 553), presents figures based on the pandemic of 1904-9, which show that the mortality among patients not receiving the serum treatment varied from 42.5 to 90.0 per cent. with an average of not far from 75 per cent. The death rate remained remarkably constant in all parts of the world and seemed to depend more upon the virulence of the infecting organism than upon race or occupation. Among the reported cases the mortality was 30.9 per cent., a reduction of over 50 per cent.

A study of the figures makes this reduction all the more remarkable. All cases are included, early and late, fulminant and mild, those receiving the serum in modern hospitals at the hands of trained physicians and those treated in country districts by men little practised in the art of lumbar puncture. Under favorable circumstances with early and expert administration the mortality should be still further reduced. Figures are also given of two other series of cases treated with the serum. One in Greece of 186 cases with a mortality of 22.6 per cent., the other in three cities in Texas in 1911-12 where among 876 patients who received the serum the mortality was 25.5 per cent., while of 562 who were not so treated 77 per cent. died. Even in the fulminant cases in which death usually occurs in less than twenty-four hours, the serum not infrequently has a decidedly beneficial action. In the patients that recovered the complications and sequelæ were reduced in number; indeed the number of permanently injured among the serum-treated has become very small.

These figures carry their own argument and the conclusion from them can best be stated in the words of the first report of 1909. "In view of the various considerations presented, the conclusion may be drawn that the antimeningitis serum, when used by the subdural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in large measure, the chronic lesions and types of the infection; of bringing about complete restoration of health, in all but a very small number of the recovered, thus lessening the serious, deforming, and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease."

## COAGULATION TIME.

MUCH interest has been manifested recently in the theoretical and clinical value of the coagulation time of the blood. A review of the literature shows thirty-four methods, together with their modifications, which have been devised in the attempt to render this property of the blood of practical clinical value. The devices for the determination of the clotting time are of three chief types: (1) the capillary tube, which forms the basis of the Vierodt and Wright methods; (2) the apparatus in which corpuscular motion is maintained by a current directed against the drop of blood, as in the Brodie-Russell chamber; and (3) the methods depending upon the contour of the drop of blood.

The factors entering into the clotting time of normal blood may roughly be classified into extrinsic and intrinsic. Of these the extrinsic are of greater importance clinically, because of their bearing upon technique. Within certain defined limits it is possible to control and reduce to uniformity the percentage of error if some standard can be adopted. The most striking of the extrinsic factors is contact with a foreign body. Blood free from contact with a foreign body, requires from seven to eight times as long to clot as blood drawn into a plain glass vessel. If the factor of air be added this time is nearly halved. The vital importance of small surface contact, or at least uniformity of surface exposed, is readily apparent. Perfect cleanliness of apparatus should be insisted upon. Opinion varies as to the influence of the size and shape of the drop, when the drop method is used. The amount of blood withdrawn, whether a small drop or a test tube full, cannot be disregarded. Mechanical disturbance, whether through handling, direction of air currents, the use of horsehair, silk, or mere tilting of the drop, tends to hasten coagulation time. Evaporation hastens it. Temperature near that of the body is desirable, as a slight fall below or rise above that retards or hastens the end point of the process. Any dilution of the blood, even if the diluent be isotonic, tends to lengthen the time of clotting.

The manner of drawing the blood has caused much discussion, (1) as to the part punctured, (2) the depth and character of the wound, and (3) contact with the tissues. Several reliable investigators have found that the part punctured has no influence on coagulation if the drop used is a freely

flowing one, and no pressure is used in securing it. The depth of the wound is not a factor if free bleeding is obtained. When a blunt instrument is used and only relatively free or poor flow results, the excessive tissue juice and slow flow hasten clotting. A sharp instrument, a free flowing drop, and absence of pressure are essential to accurate results. Contact with the tissues has to do, not only with the wound edges, but with the presence of a portion of an old clot, tissue juice, and the skin. Of the intrinsic factors, temperature, barometric pressure, humidity, and time of day are of doubtful influence. Blood pressure, agglutination, and amount of hemoglobin are unimportant. A low platelet count seems to be a factor in some cases, in others not. Viscosity involves a slow flow, and a deeper (higher) drop in the drop methods.

The pathological significance of coagulation time clinically is as yet indeterminate. It is variable in typhoid fever, being hastened especially in cases with thrombosis. It is hastened in myelogenous leukemia, diabetes, and endocarditis. It is delayed in hemophilia, purpura hemorrhagica, lymphatic leukemia, and splenic anemia. In diseases of the liver and gall-bladder the decreased coagulability seems to vary directly as the depth and intensity of the jaundice. Of the acute infections, lobar pneumonia and septicemia show the most consistent and longest delay of clot formation. The above results have been obtained by a number of observers, the latest to confirm them being Lee and White of Boston (*American Journal of the Medical Sciences,* May, 1913). They took blood directly from the arm vein with a syringe. While their method has many good points, there is too much contact with foreign bodies in the transference and handling of the blood for any great accuracy.

Personal equation as yet plays too great a part in the interpretation of the end-point of the clotting process. The results obtained by the multiplicity of coagulometers render difficult any exact comparisons by the different workers. In view of the large amount of material handled, and the extensive work done by the many investigators in this field, the nonconfirmatory nature of the results is unfortunate. Coagulation times, varying from two to thirty minutes in normal blood, leave too wide a latitude for accuracy. The adoption of some uniform procedure, or the devising of some technique minimizing the factors of error, and yet of sufficient practical value for clinical purposes, is much to be desired.

## SEXUAL INSTRUCTION.

For some time past there has been a considerable amount of discussion with regard to sexual instruction in schools. Many have argued that it is largely due to the prudishness which has prevented the teaching of sexual matters to the young that immorality, prostitution, and their awful aftermath flourish so exceedingly. It is now recognized that venereal diseases are at the root of most diseases and that if these are allowed to continue unchecked in time modern civilization will be sapped at its foundations. It has been also contended that Great Britain and America have been and are the two countries in which such things must not be mentioned to the young. In fact, it is only within the last few years that they have been mentioned in public at all. Now a change has come over the attitude of the medical profession and public with regard to this matter and a crusade against venereal diseases appears to be imminent.

Various writers and speakers have earnestly urged that sexual instruction be given in schools, but there is little unanimity of opinion as to the form this instruction should take. Some think that young children should be taught elementary physiology, others hold that the process of reproduction as it occurs in plants and animals should be taught as a matter of course just as any branch of physics might be taught; but most believe that the teaching should not go far.

Under the title "What Every Child Wants to Know," Emilia v. Kanthack de Voss of Hamburg, Germany, has contributed an eminently commonsense paper on the subject of sexual instruction to the young to *The Child* for April. She wisely points out that although it may be fitting that the home should be the fount of such instruction, and that while it is absolutely necessary to be truthful to a child, truthfulness does not necessitate premature revelations. Such revelations might be productive of infinite harm to a child's developing intelligence. Furthermore, attention is drawn to the fact that education is not training, and that the training a child receives in his own home is what gives him his attitude for ever after toward life and all that is in store for him, his attitude, indeed, toward the world, the flesh, and the devil. Training, too, is mainly subconscious; a child is above all imitative, and the training received when young, that is by mothers or those who stand in the place of a mother, will last throughout life. Therefore, perhaps, it should rest with the mother as to how much of the truth she should tell to an inquisitive child. Strong meat is not for babies, and, arguing in the same way, one must not tell a child more of sexual matters than its intelligence warrants. Mrs. de Voss truly says that there are other ways of influencing and protecting children apart from giving definite explanations. Love and trust in a mother will often prevent a child or youth from yielding to temptation. Let biology be taught in schools and let the teaching be correct and explicit but "sex hygiene" as a school subject can never repair the omission of early home training.

Of course, it is frequently taken for granted that mothers are not competent to give instruction to their children on sexual matters and no doubt this is to some extent true, but as the writer in *The Child* remarks, "It is not fair to dub parents, as a class, wholly incompetent to make clear to their own children matters about which they must have more inside knowledge than unmarried teachers." It is well that this subject should be thoroughly ventilated by parents, teachers, medical men, and sociologists, and it is especially refreshing to read so able a presentation of the matter as that given by Mrs. de Voss.

## EXPENDITURE OF PUBLIC MONEYS FOR HEALTH WORK.

The adjournment of the various legislative bodies usually brings up the subject of appropriations, and it is interesting to note that with an exasperating uniformity the appropriations for the health and sanitary departments is always particularly niggardly. The public does not yet seem to realize or recognize the monetary value of public health, except when the lack of it causes them an actual financial loss, perhaps through some stringent quarantine restriction. Whether the death rate is higher or lower at a particular time makes little difference to the public, if, indeed, it is aware of it. While they are shocked at a severe railroad or other disaster, they do not seem to be affected by an equal number of deaths from even an epidemic. And this is not from a lack of sympathy or generosity, because the State as well as private individuals respond generously for the relief of suffering following on disaster—more than they would if the disaster were an epidemic of a particularly fatal disease.

A comparison of the moneys spent by the State for the public health and on other public endeavors, will throw some light on this subject. In 1910, the City of New York, for example, spent about 148 million dollars in governing that city, and only 2½ millions for its health. In the same year it spent about 8 million dollars for its fire department, though its fire loss was only about 9 millions. The loss of life in the same year from preventable diseases was about 33,200 (total deaths from all causes 76,742), and if each life is valued, according to Irving Fisher, at $1,700, then the loss in dollars is over 56 millions—and against this loss only 2½ millions were spent in efforts to conserve. Fisher estimates that if each life is valued at $1,700, and the average productive capacity of each individual is $700 annually, then the total loss in the United States, through preventable disease exceeds one and one-half billion dollars annually.

It has been repeatedly stated, and truly, that the United States Government spends more money on the protection of its cattle industries than on its health departments. Every one, no matter of what medical creed, concedes the necessity of an adequately organized department for that purpose, except the ignorant or those against it from selfish motives. When it was attempted to create a United States Department of Health, it was attacked even on constitutional grounds, but President Taft's commentary on this question should have settled this contention for all time. He said: "There is nothing in the constitution especially about hogs or cattle or horses; and if out of the public treasury at Washington we can establish a department for that purpose, it does not seem to me to be a long step or a stretch of logic to say that we have the power to spend money in a Bureau of Research to tell how we can develop good men and good women."

When will the public see the light in its own interest? The suspicion it has of medical men is not justified, for in what other branch of human endeavor do we see its workers trying with all their might to reduce their business? The public should be, and no doubt will be in time the foremost advocates of medical research and health measures. At present all the work in that direction is due to the generosity of a few private, but public spirited, individuals.

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### Pemphigus Malignans Cured by a Single Intravenous Injection of Blood.

Pemphigus, a potentially fatal malady, has long been studied in the hope of elucidating the nature not only of this bullous dermatosis itself, but of all similar eruptions which appear to herald the presence of an underlying severe blood dyscrasia. Some of the members of this group are to be found in the cutaneous expressions of pregnancy toxemia. These eruptions first yielded to a serum from normal gravidæ and later the method was extended to the treatment of nongravid victims of pemphigus with ordinary serum. During the past year Heuck reported a severe case of chronic pemphigus, cured, or at least greatly improved, by a series of 34 injections of from 10 to 30 cm. of normal human serum. In the *Muenchener medizinische Wochenschrift* for April 22, Praetorius briefly reports a case of the most severe type of chronic pemphigus cured apparently by a single injection of normal human blood which had not been defibrinated. The eruption ceased and no relapse has occurred during eight months. This result overshadowed greatly those accomplished only after much delay with defibrinated and centrifuged blood. The author did not use the modern technique of arm to arm transfusion, but simply withdrew blood from the donor's body and injected it forthwith into the cubital vein of the recipient.

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## News of the Week.

**Anti-Cancer Society.**—On May 15, in New York, a committee of physicians representing a number of medical societies met with a committee of laymen for the purpose of forming an association to conduct a world-wide campaign of education on the subject of cancer. The following officers were elected: *President*, George C. Clark, New York City; *Vice-Presidents*, Dr. Clement Cleveland, New York; Dr. Lewis M. McMurtry, Louisville, Ky.; Dr. Edward Reynolds, Boston; Dr. Edward Martin, Philadelphia; Dr. Llewellys F. Barker, Baltimore; *Secretary*, Thomas M. Debevoise. The executive committee is composed of Dr. George Brewer, New York City; Dr. F. F. Simpson, Pittsburg; Dr. Livingston Farrand, New York City; Dr. Joseph Bloodgood, Baltimore; Dr. A. D. Bevan, Chicago; Dr. Le Roy Broun and Dr. Howard Lilienthal of New York City; Dr. Jeff Miller, New Orleans; Dr. James Ewing, New York City; Dr. Charles Powers, Denver; Dr. Reuben Peterson, Ann Arbor, Mich.; Dr. William M. Studdiford, New York City; Dr. Frederick J. Taussig, St. Louis; Dr. Howard C. Taylor, New York City; John E. Parsons and V. Everit Macy. The following medical societies were represented at the meeting: the American Dermatological Association, American Surgical Association, American Laryngological Association, American Otological Association, American Genito-Urinary Association,

American Gynecological Society, American Association of Pathologists and Bacteriologists, American Orthopedic Association, American Ophthalmological Society, American Neurological Association. The association plans, by means of magazine articles and pamphlets to be distributed by visiting nurses, social workers, etc., and by lectures to be delivered before women's clubs, to enlighten the women of the country on the subject of cancer and the importance of prompt treatment.

**Wood Alcohol and Blindness.**—The fourth annual report of the New York Committee on the Prevention of Blindness states that during the past year in this State alone thirteen persons were made blind for life and four persons were killed by either drinking wood alcohol or inhaling its poisonous fumes. The committee urges the passage of legislations restricting or regulating the use of this poison.

**Hospital at Aix-les-Bains.**—The Leon Blanc Hospital at Aix-les-Bains, France, which was donated to the town by the late Mr. J. Pierpont Morgan, was formally opened on May 15. The hospital was given by Mr. Morgan in memory of his physician, Dr. Leon Blanc.

**Civil Service Examinations.**—The New York Civil Service Commission announces that examinations will be held on June 14, 1913, for the purpose of filling vacancies in the following positions:

Woman physician in the New York State Training School for Girls, Hudson, N. Y., at a salary of $1,200 a year and maintenance. Also, assistant woman physician, at a salary of $1,000 a year and maintenance. Candidates for these positions must be graduates of a registered medical school with at least one year's hospital experience or three years' general practice after graduation.

Lecturer on oral hygiene (male) in the State Department of Health, at a salary of $3,000 to $3,500. Candidates must be graduates of legally chartered dental colleges recognized by the State Board of Regents, and must have practised their profession in the State of New York for at least five years.

All candidates must be citizens of the United States. Applications for the examination must be filed in the office of the Commission before June 6. Blanks may be obtained before June 4 on application to the State Civil Service Commission, Albany, N. Y.

**Proposal for a Joint Investigation of the Doctrine of Similars.**—A committee of the American Institute of Homœopathy, under the chairmanship of Dr. Herbert Dana Schenck of Brooklyn, has sent a communication to the president and secretary of the American Medical Association, asking in behalf of the Homœopathic physicians of the United States for a joint investigation of the scientific merits of the method of drug relation expressed by the formula "Similia Similibus Curentur." It is suggested that the American Medical Association appoint a committee of five to meet a like committee from the American Institute of Homœopathy to discuss this subject with a view of attempting a demonstration of the truth or falsity of the theory of similars. It is further suggested that the joint committee study the physiological action, in large and small doses, of a definite number of drugs in common use by the members of both societies, this investigation to be under the auspices of some research laboratory like the Rockefeller Institute in New York or the McCormick Institute in Chicago; and finally make a comparative trial of the therapeutic efficacy of these drugs, given according to the various methods of administration, in some of the large public hospitals.

**Dr. Ludwig Weiss** has been appointed consulting physician in the Dermatological Department of St. Mark's Hospital, New York City.

**Dr. Enrique Nunez** has been appointed Minister of Sanitation in the Cabinet of President Menocal of Cuba.

**City Vital Statistics.**—During the week ending May 17, there were reported in New York 1,531 deaths, giving a death rate of 14.75 per thousand, as against 1,463 deaths and a rate of 14.75 during the corresponding week of last year. The increases occurred almost entirely in diseases of a chronic nature; thus, the deaths from organic heart disease were increased by 44; from tuberculosis by 22; from disease of the kidney by 16. Measles showed a decrease of 11 deaths, lobar pneumonia of 15, and bronchopneumonia of 21. The New York Department of Health estimates that on July 1, 1913, the population of the city will amount to 5,372,983. It is also estimated that of this population only 15.8 per cent. is of native parentage, while 38.8 per cent. is of foreign parentage though native born, and 45.4 per cent. is foreign born.

**Medical Graduates.**—The fiftieth annual commencement exercises of the New York Medical College and Hospital for Women were held on May 22, when nine young women received degrees.

**St. Vincent Hospital Alumnæ Association.**—Announcement is made of the establishment at 269 West 12th Street, New York, of a registry for nurses by this association, under the charge of Miss Katherine Donovan.

**Annual Meeting of St. Vincent's Hospital Staff.**—The annual meeting of the medical staff of St. Vincent's Hospital was held at the hospital on May 21st, His Eminence Cardinal Farley presiding. The medical and surgical appointments for the year were confirmed. Dr. José M. Ferrer was elected President of the Medical Board and Dr. Charles E. Nammack, Secretary. After an address by the Cardinal, the report for the year 1912 was read and approved.

**Charitable Bequests.**—By the will of the late Samuel Teller Benner of Philadelphia the sum of $5,000 is bequeathed to the Presbyterian Hospital of that city for the endowment of a free bed.

The Montefiore Home, New York, receives a bequest of $5,000 by the will of the late Mr. Samson Fried of this city.

Bequests of $2,000 each are made to Mount Sinai Hospital, the Montefiore Home, Beth Israel Hospital, and the East Side School for Crippled Children, New York, by the will of the late Mr. Albert Krower.

Mr. Theodore Goetze, who died recently in Brooklyn, made provision in his will for a number of charities. Among them, the German Hospital, New York, receives $8,000; Seton Hospital, St. Francis Hospital, and St. Joseph's Hospital, $5,000 each; and St. Mark's Hospital, $5,000.

The Methodist Episcopal Hospital, Brooklyn, $3,500 by the will of the late Miss Elizabeth M. Carpenter.

The Polyclinic Hospital has recently received the endowment of three beds in its general wards, and an additional donation of $1,000 from Mr. A. H. Troescher, in memory of his friend, the late Andrew Blum.

By the will of the late Dr. Daniel B. Bower, a dentist of Boyertown, Pa., the sum of $25,000 is bequeathed as a fund for the establishment of the Bower Charity Hospital.

**Bellevue Alumni.**—The Class of '98 of the Bellevue Hospital Medical College held their fifteenth annual reunion on May 10. Dr. Anthony Bassler acted as toastmaster, and short speeches were made by several members of the class.

**Research Fellowship.**—The Medical Department of University of Pennsylvania has received from Mr. Stevens Hecksher of Philadelphia a gift of $10,000 for the establishment of a fellowship in medical research as a memorial to the late Mrs. Hecksher.

**Hospital Anniversary.**—On May 12, St. Agnes Hospital, Philadelphia, celebrated with appropriate ceremonies the twenty-fifth anniversary of its foundation.

**New Hospital Building.**—The New York Orthopædic Dispensary and Hospital has purchased as a site for its new buildings a plot running from 421 to 435 East Fifty-eighth Street and from 420 to 426 East Fifty-ninth Street. A large building is to be erected as soon as possible.

**Medical Society Elections.**—American Association for Promoting Hygiene and Public Baths.—A meeting of this association was held in Baltimore on May 13 to 15, when the following officers were elected for the ensuing year: *President,* Dr. Simon Baruch, New York; *Vice-President,* Mr. Thomas M. Beadenkopf, Baltimore; *Secretary,* J. Leonard Mason, City Hall, Newark, N. J.

Canadian Medical Association.—The forty-sixth annual meeting of this association will be held at London, Ontario, on June 24 to 27, 1913, under the presidency of Dr. Hugh A. McCallum of London. Dr. J. Alexander Hutchinson of Montreal will deliver the address in surgery; Dr. T. S. Cullen of Baltimore, the address in gynecology, and Dr. Llewellys F. Barker of Baltimore, the address in medicine. An interesting program for the different sections of the association has also been arranged.

Texas State Medical Association.—At the forty-fifth annual meeting held in San Antonio, the following officers were elected: *President,* Dr. Marvin L. Graves, Galveston; *Vice-Presidents,* Dr. John H. Foster, Houston; Dr. J. C. Anderson, Plainview, and Dr. R. R. White, Temple; *Secretary,* Dr. Holman Taylor, Fort Worth; *Treasurer,* Dr. W. L. Allison, Forth Worth. Houston was selected as the place for the 1914 meeting.

Oklahoma State Medical Association.—The following officers were elected on May 15 at the annual meeting held at Enid: *President,* Dr. James M. Byrum, Shawnee; *Vice-Presidents,* Dr. Dock Long, Duncan; Dr. J. T. Slover, Sulphur, and Dr. J. H. Barnes, Enid; *Secretary,* Dr. Claude A. Thompson, Muskogee. The next meeting will be held at Guthrie.

Franklin District (Mass.) Medical Society.—At the annual meeting held on May 14 at Greenfield, the following officers were elected: *President,* Dr. Charles F. Canedy, Greenfield; *Vice-President,* Dr. J. E. Urquhart, Ashfield; *Secretary-Treasurer,* Dr. W. K. Clark, Greenfield.

Worcester Dstrict (Mass.) Medical Society.—The following officers were elected on May 14 at the meeting held at Worcester: *President,* Dr. Homer Gage, Worcester; *Vice-President,* Dr. Frank H. Clapp, North Grafton; *Secretary,* Dr. Earnest L. Hunt, Worcester; *Treasurer,* Dr. George O. Ward, Worcester.

Ohio Homeopathic Medical Society.—At the meeting held in Marion on May 14 and 15, the following officers were elected: *President,* Dr. Frank Webster, Dayton; *Vice-Presidents,* Dr. George Irvin, Orrville, and Dr. Ella G. Hunt, Cincinnati; *Secretary,* Dr. R. O. Keiser, Columbus; *Treasurer,* Dr. T. T. Church, Salem.

**Obituary Notes.**—Dr. John DeWitt Nelson of New York, a graduate of the College of Physicians and Surgeons, New York, in 1875, died recently at his home, aged 65 years.

Dr. Louis G. Le Beuf of New Orleans, a graduate of the Medical Department of the Tulane University of Louisiana in 1887, formerly coroner of Jefferson Parish, president of the Orleans Medical Society, and a member also of the American Medical Association, and the Louisiana State Medical Society, died at Pass Christian, La., after a long illness, on May 5.

Dr. David Coggin of Salem, Mass., a graduate of the Harvard Medical School in 1868, consulting ophthalmologist to the Salem Hospital, with which institution he had been connected since its foundation, and a member of the Massachusetts State and Essex County Medical Societies, died at his home on May 7, aged 69 years.

Dr. John William Kyger of Kansas City, Mo., a graduate of the University of Virginia, Department of Medicine, in 1868, and a member of the Missouri State and Jackson County Medical Societies, died at his home on May 5, aged 64 years.

Dr. Richard Francis Murphy of New York, a graduate of the New York University Medical College in 1889, died at his home from apoplexy, on May 10, aged 51 years.

Dr. Edward W. Carhart of Brooklyn, N. Y., a graduate of the Albany Medical College in 1898, died at his home on May 16, aged 56 years.

Dr. James B. Olmstead of Portland, Ore., a graduate of the Pulte Medical College, Cincinnati, O., in 1881, died in St. Elizabeth's Hospital, Yakima, Wash., from uremia, on May 8, aged 56 years.

Dr. J. Williams Henry of Brooklyn, N. Y., a graduate of the Georgetown University School of Medicine, Washington, in 1866, died at his home after a long illness, on May 16, aged 83 years.

Dr. Elmer E. Brown of Philadelphia, Penn., a graduate of the Jefferson Medical College in 1897, a member of the Pennsylvania State and Philadelphia County Medical Societies and the Philadelphia Obstetrical Society, a director of the Garretson and Samaritan Hospitals, and vice-president of Temple University, died at his home May 23, aged 53 years.

Dr. David Engelman of Easton, Penn., a graduate of the Jefferson Medical College in 1864, a member of the Pennsylvania State and Northampton County Medical Societies, and at one time president of the State Board of Health, died at his home on May 14, aged 77 years.

Dr. Annie M. Hawley of Pughtown, Penn., a graduate of the Hahnemann Medical College and Hospital of Chicago in 1873, died at her home on May 11.

Dr. Joseph Warren Dossett of Wilmer, Ala., a graduate of the University of Alabama Medical Department in 1903, died in the Providence Hospital, Mobile, on May 9, aged 56 years.

# Correspondence.

## A SHORT-CIRCUIT WARNING.

*To the Editor of* The Medical Record:

Sir:—In the Medical Record for May 17, 1913, Dr. A. E. Rockey, under the above caption, makes elaborate criticism of the reference to the short-circuiting bowel operation in my article, published in the issue of April 12. Dr. Rockey's criticisms are correctly made and the point well stated, from the standpoint of the Lane operation. The dangers and difficulties to which he calls attention have all been experienced by those of us who are interested in this work, and I had not thought of leading any inexperienced surgeon into temptation by making the work seem simple.

In view of the fact that the short-circuiting operation is to be done more and more in cases of chronic constipation in which intestinal stasis leads to numerous toxic conditions, from neuralgia to melancholia, I have tried to simplify the operation in such a way that it would not frighten the general practitioner, who now has a tendency to run off in alarm when we speak of short-circuiting the bowel instead of applying liniments in cases of rheumatism.

The operation in which I am interested at present can really be done through a short incision. The ileum is not divided at all, but is brought down to the distal part of the sigmoid, or the proximal part of the rectum, and there united after a doorway has been made. The tendency to progress of contents of the ileum along a natural route, disregarding the doorway, is overcome by angulating the ileum for a couple of inches distally from the doorway, two or three sutures serving to retain the ileum in its angulated form. To guard against the filling of the colon by antiperistalsis, as described by Mr. Lane, and as occurring in the practice of various surgeons at present, the sigmoid is angulated for a short distance proximally from the doorway. This angulation, like that of the ileum, is maintained by the introduction of two or three sutures at points where they are evidently needed for the purpose.

In my last case the operation was done with the aid of a special instrument devised for the purpose. This instrument carries jaws, one of them fenestrated. It is passed up the rectum to the vicinity of the sigmoid; one jaw remains in the large bowel, the other is passed through a slit in the side of the large bowel through a corresponding slit in the ileum; the jaws are then snapped together and left to cut their way through slowly and make a doorway, avoiding most of the hemorrhage and soiling of the peritoneum, and expenditure of time, belonging to the Lane operation. In this particular case the forceps cut through at the end of about 48 hours, and the instrument was removed from the rectum.

I will show a cut of this instrument in the near future, although it was my intention to wait until it had been employed in a certain number of cases before presenting it for consideration by the profession.

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## OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEDICAL MEETING IN THE CITY—LONDON UNIVERSITY—GOUT AND RHEUMATISM—TUBERCULIN FOR OUT-PATIENTS—BLOOD PARASITES—OBITUARY.

London, May 9, 1913.

Yesterday there was a meeting of city practitioners held at the Guildhall, over which Sir T. Crosby presided. The object was to discuss the working of the Insurance Act. There were present men who had accepted and others who had refused panel service. Dr. Strong and Dr. Scanlan were chosen to represent the city on the Medical Advisory Committee, and Dr. Gillies was appointed chairman of the city committee. It was resolved that the allocation to one medical man of several thousands of patients under the Act rendered honest treatment impossible, and degraded the conception of professional duty. The meeting therefore asked for a reasonable limit to be put on the number admitted on the panel of any individual practitioner.

Wednesday was presentation day at the London University, and was celebrated by what were said to be the customary ceremonies. There is some difficulty in satisfying oneself as to what are customary in an institution the constitution of which seems continually changing. The annual report was read, in which the question of the new site was attended to and the preference of the Royal Commission for Bloomsbury half-heartedly endorsed. The event, however, was the address of Sir P. Magnus, who showed to the delight of not a few the objections to these continual changes. During its 80 years of existence it has attained no permanent form. Within the last week or two the report of the Royal Commission has been issued, and is a careful and powerful exposition of university requirements and work in general, but says the organization of this is "fundamentally defective." Yet only about a decade ago a commission of equal authority had set up this organization, which was to make it the "greatest institution of the kind in the whole world." I can look back more decades than Sir P. Magnus, but with the same doubts and disappointments, and considering the many remedies proposed for the constitution, which has offered fresh "defects" to every new set of doctors, repeat his reminder of the unfortunate patient on whose tombstone was inscribed: "I was well, I wanted to be better, and here I am."

The etiology of gout and rheumatism from the bacteriological standpoint was the subject of a paper in the Medical Section (R. S. M.) by Dr. Lyon Smith. He based it on nearly 200 cases observed in the last 3 years. They included single and multiple arthritis, periarthritis, aponeurositis, neuritis, and perineuritis. They were traced to chronic lesions serving as foci of infections, mostly in the alimentary mucous membrane, though the renal lining also furnished cases, as did the skin. Pyorrhea alveolaris was the most frequent form, and the importance of recognizing its precursor—marginal gingivitis—was pointed out. All the common microbes associated with chronic inflammatory conditions had been met with; so were some of the more specific. But most of the cases seemed to be due to mixed infections. This increased the difficulties of treatment by rendering the immunizing process more complicated. Clinical responses to tentative inoculations had been quite significant. In

one unusual type of case the diphtheria bacillus seemed to be the cause, and antitoxin was used with striking results, symptoms being alleviated by inoculations far short of complete immunization. It could be shown that ferments of certain bacteria acting on food-stuffs caused cleavage of proteins, hydrocarbons, and carbohydrates, and could give rise to various organic acids, *e.g.* lactic, acetic, butyric, hippuric, oxalic. It did not seem logical to cut down one section of the diet table in the hope of killing the parasite by starving the host. A more rational plan was to try and raise the specific immunity of the host to whichever pathogenic organism beset him most actively. Our models for such efforts were the methods of the research laboratories which had proved most successful in producing such immunities.

At the same meeting (22d ult.) Dr. T. D. Lister gave his experience of consumptives treated with tuberculin while out-patients, and pointed out the difficulties of doing so. The first was to settle what observations could be made. Patients were supplied with a thermometer and instructed to take their temperature by the mouth on waking, usually about 7 A.M., before eating or drinking, and again in the afternoon, one hour after tea. When not verified by a medical man or district nurse the accuracy of the record must be estimated by its own evidence. In doubt, he did not begin the treatment until a further chart. He kept the charts some weeks before giving tuberculin—one week's interval did not give a scientific basis for out-patients. In the wards they were under continual observation, and there was not the irregular attendance, the unfavorable conditions as to employment, the varying nutrition and so on. So when reactions occurred—which he endeavored to avoid—there was not the same control as with in-patients. Some, however, followed their instructions, and for them (too few) it was justifiable and often expedient to try out-door treatment, but the selection of suitable cases was difficult, for immunizing ability depended on the state of the blood and tissue cells, while nutrition was an important point. He felt sure some unfavorable results he had seen were due to failure of nutrition, and that other favorable ones were due to the supply of proper food. Physical signs in an infective disease causing gradual destructive change were less important than the resisting power of the patient towards the infection. A limited severe lesion and chronic fibrosis, even with a cavity, was better than diffuse infiltration and subacute symptoms. It is established that nine-tenths of our population have recovered from tubercle infection. So our improved diagnosis will detect many cases that will get well. A small dose at first—quite experimental—was best, the patient being warned to be careful about temperature, and rest in bed 24 or 36 hours on any rise. The dose should be only gradually increased until it became full in the twenty-fourth week. Unfortunately, much unsatisfactory administration was going on. Series of doses prepared by commercial firms were issued to practitioners, who used them without regard to their toxicity. A strong protest against indiscriminate use was necessary. Tuberculin was a toxin—not an antitoxin. A rise of temperature after a dose contraindicated any increase, and if the rise remained to the evening before the next attendance the dose should be omitted. The following week if it kept normal the previous dose could be given, and the week following that it could be increased, but only if the temperature remained normal. If this caused reaction the next dose must be less. After a reaction no dose should ever be given until the temperature had remained quite normal for several days under the patient's ordinary conditions of life. When a successful result had seemed to be attained the patient was advised to return at one or two months' intervals for repetition of the maximum dose he had had. After-care of these cases was the same problem as prevention. He confessed to little faith in the permanence of immunity after an attack of open tuberculosis by any method, but tuberculin treatment kept the patient a long time under guidance. He used the tuberculin prepared by Dr. Hunt, pathologist to the hospital, in a series of decimal dilutions corresponding to 0.0001, 0.001, 0.01, 0.1, 1 mg. bacillary substance in each 1 cc. It was diluted with 0.8 per cent. salt solution containing 0.5 per cent. carbolic acid and heated to 58° C. for half an hour. The injections were made in the arm, previously washed with a lysol solution. The puncture was dried and sometimes covered. A printed card of instructions was given to each patient. There was no need to cease other treatment, but he gave no opiates of any kind for cough. Menthol and licorice pellets were usually sufficient.

A lecture on blood parasites was given on the 2d inst. by Mr. H. G. Plimmer at the Royal Institution. He said knowledge of the subject began with Laveran's discovery of the malaria parasite. This belonged to the protozoa, as do most of the blood-parasites. That order accordingly deposed the bacteria from the proud position of causing all the ills that man has to bear. The earliest on which a blood parasite was observed was 1841, when Valentin detected one in a fish's blood. Up to the present a number have been discovered and believed to cause disease. But dangerously little is really known about them. It is therefore imperative not to make our account of them accord too closely with other facts, as later discoveries may show that partial knowledge has led to erroneous conclusions. The lecturer said that he had examined the blood of over 6,000 animals during the past 5 years, and he found parasites in 587; in 297 of the animals (which came from all parts of the world) he found the parasites for the first time. He showed a number of them on the screen, at the same time warning his hearers that they were enormously magnified. To help them appreciate their minuteness he told them that a 6-foot man magnified as much would appear more than 20 miles tall. In the course of his lecture Mr. Plimmer paid a tribute to Obermeier's inoculation of himself with the spirochete of relapsing fever, which proved fatal to him.

Dr. J. C. Thorowgood died on the 2d inst., aet. 81, at Bognor, to which he retired more than 10 years ago on account of failing health, to the great regret of many professional friends, among whom I claim a place. His London career as a physician was successful, and in every society he was welcome as a type of a learned, upright gentleman and worthy representative of the profession. He qualified in 1855, took the M. D. Lond. in 1857, and after spending some months in the provinces and abroad was elected on the staff of the City of London Hospital for Diseases of the Chest, and on the West London Hospital, to both of which he became consulting physician after long service, as he also did to the National Hospital for Consumption.

For a time he lectured on materia medica at the Middlesex Hospital School, and filled other appointments. Perhaps the chief of these was at Apothecaries Hall, where he was long an examiner and eventually president of the Board of Examiners. His book on the "Climatic Treatment of Consumption" was one of the earliest advocating bracing resorts, and his conclusions have since been generally endorsed. He delivered the Lettsomian lecture in 1879 on "Bronchial Asthma," a subject which much interested him. He also published "Notes on Asthma" and the "Hypophosphates in Consumption."

Dr. Herbert Manley, A.M., M.D., Cantab., and M. O. H. for West Bromwich, died on the 6th inst., aet. 57. He was a D. P. H. of the Conjoint Board, took a great interest in Medical Defence Union, of which he became V. P., and filled a number of offices in West Bromwich. He had been lecturer at the Birmingham Technical School, and was highly esteemed as an authority on hygiene and the relations of medicine to the public health. He was, besides his medical position, a barrister at law.

Mr. A. P. Hills, a leader in medical politics, M. R. C. S., 1850, much interested in the Incorporated Practitioners' Society, of which he became V. P., died on the 6th inst., aet. 57.

## Progress of Medical Science.

### Boston Medical and Surgical Journal

*May* 15, 1913.

1. The Excretion of Formalin in the Urine; an Inquiry into the Accuracy of Burnam's Test. G. W. Smith.
2. Serous and Suppurative Labyrinthitis—Differential Diagnosis. I. W. Voorhees.
3. Acute Angulation of the Terminal Ileum as a Cause of Intestinal Obstruction in Certain Cases of Acute Appendicitis. D. Cheever.
4. Report on the Use of Pituitary Extract (Pituitrin) in Surgical Shock. C. A. Hill
5. Artificially Dried Casein—Preliminary Investigation. H. I. Bowditch.
6. Transduodenal Choledochotomy. J. C. Hubbard.
7. Recurrent Variola. E. F. Cody.

1. **The Urinary Excretion of Formalin.**—G. W. Smith has found that Burnam's test for formaldehyde in urine is definitely positive when this substance is present in the strength of 1 part in 40,000 or more. The urine should be examined as soon as possible after it has been voided. A negative test at one time does not prove that formaldehyde is never liberated. From the evidence at hand the author believes that formaldehyde is liberated from the hexamethylenamine by the acids of the urine, not by a specific function of the renal epithelium. This process may take place in the kidney, but is continued in the bladder. Litmus paper, as an indicator of the true acidity of the urine, was unreliable in about 25 per cent. of the cases examined. The degree of acidity of urine, as measured in terms of its hydrogen ion concentration, showed in the author's cases a constant relation to its power to set free formaldehyde. The higher the acidity, the greater was this power. The requisite amount of acidity, which is not great, is present in the majority of normal urines, and can be secured in almost all cases by the use of boric acid or sodium acid phosphate. The author disagrees with the statements of Burnam and L'Esperance that only 50 to 60 per cent. of individuals break up urotropin. Examination of 213 specimens from fifty individuals showed that only in the urine of one case was formaldehyde never found.

3. **Intestinal Obstruction in Acute Appendicitis.**—D. Cheever points out that no more frequent and fatal complication of acute appendicitis exists than that comprising the various types of postoperative intestinal stasis. These may be assigned roughly to two main groups: First, those due to failure of peristalsis, resulting in intestinal paresis, distention, and stasis of the fecal current; and second, those due to mechanical obstruction resulting usually from kinks, twists, adhesions, or bands. The most familiar examples of the first group are the cases of paralysis associated with peritonitis, causing a toxemia acting either after absorption or locally on the neuromuscular mechanism of the intestine; the paralysis due to trauma, seen in the course of long abdominal operations involving manipulation and exposure; and that due to mesenteric thrombosis. Many of these cases are relieved spontaneously or by appropriate nonoperative measures, but not a few require interference by enterostomy, as an emergency measure to provide drainage until peristalsis may be restored, and no more anxious and difficult decision confronts the surgeon than when to interfere. The cases of mechanical obstruction forming the second group are sharply marked etiologically, but if they occur early they are unfortunately difficult to separate from the paralytic cases. This does not refer to the late secondary cases of ileus occurring weeks, months, or years after the operation. Inasmuch as mechanical obstruction, once established, is rarely relieved except by operation, and since the mortality of such secondary interference, high enough anyway, is vastly increased by delay, it becomes imperative to make the diagnosis and proceed to the relief of these cases at the earliest possible moment. Since in appendicitis the area immediately adjacent represents the usual region of peritonitis with resulting possibilities of adhesions, it is natural that the terminal ileum should be the most frequent seat of mechanical obstruction due to this cause.

4. **Pituitary Extract in Surgical Shock.**—C. A. Hill states that the administration of pituitary extract eliminates to a great extent the danger of shock developing after surgical operations. His routine procedure is to give the drug before the patient leaves the table and usually before closure of the abdominal wound is made. Fifteen minims are given hypodermatically. This dose is repeated every three hours until four doses have been given. In a series of eight hundred abdominal operations in which pituitary extract was used, the author did not note the development of shock in any instance except in two or three cases in which a condition simulating "heart exhaustion" was noted. This was only transient, the patient responding to stimulation after the administration of pituitary extract was discontinued. Another point mentioned is the happy result noted by several investigators as well as the author regarding the elimination of gas from the alimentary tract. Pituitary extract has a marked effect upon the muscular coat of the intestine, increasing peristalsis and facilitating the passage of gas.

5. **Artificially Dried Casein.**—H. J. Bowditch has been able to save the casein that is usually discarded in the making of whey. He has found that the casein curd can be dried and made into stable, pure, and soluble or insoluble powder. This powder may be used to increase the accuracy of administration of casein. Cases are being fed by the author on the basis of exact casein percentage, just as with sugar and fat.

### New York Medical Journal.

*May* 17, 1913.

1. Venereal Diseases. H. M. Biggs.
2. Dispensary Facilities for the Treatment of Syphilis. H. F. Swift.
3. Dispensary Treatment of Gonorrhea. E. L. Keyes, Jr.
4. Hospital Accommodations for the Treatment of Venereal Diseases. S. S. Goldwater.
5. The Relationship of Syphilis to Internal Medicine. W. T. Longcope.
6. Hypertrophy of the Prostate. J. H. Gleason.
7. Gastrointestinal Therapy. J. N. Upshur.

8. Medical Experts. H. M. Friedman.
9. The Surgical Aspect of Gastric Ulcer. J. C. Kennedy.
10. Neosalvarsan. O. L. Suggett.

1. **Venereal Diseases and the Health Department.**—By H. M. Biggs. (See MEDICAL RECORD, March 8, 1913, page 452.)

2. **Dispensary Facilities for the Treatment of Syphilis.**—By H. F. Swift. (See MEDICAL RECORD, March 8, 1913, page, 452.)

3. **Dispensary Treatment of Gonorrhea.**—By E. L. Keyes. (See MEDICAL RECORD, March 8, 1913, page 453.)

4. **Hospital Accommodations for the Treatment of Venereal Diseases.**—By S. S. Goldwater. (See MEDICAL RECORD, March 8, 1913, page 453.)

5. **Relation of Syphilis to Internal Medicine.**—By W. T. Longcope. (See MEDICAL RECORD, March 8, 1913, page 454.)

6. **Hypertrophy of the Prostate.**—J. H. Gleason notes that the recent work of Tandler and Zuckerkandl has substantially advanced one's knowledge of the anatomy and surgical pathology of the prostate. It has further changed one's ideas as to what actually takes place in the operation of prostatectomy and the anatomical regeneration therefrom. Most remarkable, however, is the fact that an hypertrophy of all parts of the prostate does not exist. Contrary to old beliefs, the middle lobe and portion toward the bladder are always affected. Remarkable also is the fact that the prostate can be only artificially enucleated from its anatomical capsule. The capsule in the surgical sense is formed of atrophied prostatic tissue, which has been compressed by the hypertrophied portion of the gland. The proper and early treatment of a patient suffering from prostatism is most essential. The catheter should never be used habitually, and if its use becomes necessary in relieving acute retention, then the most scrupulous asepsis should be observed. Experience has demonstrated that the benign prostate has a tendency also to assume cancerous degeneration under the irritating influence of prolonged catheterization and its resulting complications. The ideal time for operation is before toleration and infection, and should be performed as soon as the presence of sufficient residual urine indicates the progression of the disease. Prostatectomy is not an operation to be attempted by an inexperienced surgeon. If the veteran in judgment and technique is ever needed in surgical procedure, certainly then the operator of known quality and skill is required in the management of prostatectomies.

8. **Medical Experts.**—H. M. Friedman outlines the following method of solving the problem of medical experts. Since expert opinion is in fact judicial opinion, the power of expressing these opinions must be vested in individuals or commissions, judicial in nature, especially appointed for such purposes, either by an executive, as in the case of many judges, or by a judicial officer in each case as is done in the appointment of referees or masters in chancery. The functions of these officers are to take testimony in such matters as are considered too complicated for the juries or too cumbersome for the judges—in "numerous litigated items," as they say in legal verbiage. The findings of fact by these officers are submitted to the court who, though it cannot usually alter them, can reject them entirely as unsatisfactory and refer the matter to a new referee or master in chancery, as the case may be. Similarly, medical questions are "numerous litigated items," and their reference to a *referee in medicine* would make for a more thorough adjudication of the questions in controversy, and with much less opportunity for bias. Yet both sides could bring their talent before the referee, who, being familiar with the scientific matters in question, could give the opinions of the experts their proper weight. The findings of such a referee would also be submitted and received as facts to be considered with the other facts in the case. The absence of any apparent bias by this method would inspire confidence in all concerned, even though not resulting in bringing before a court such an array of talent as is brought when the usual method is pursued.

9. **Gastric Ulcer.**—J. C. Kennedy points out that it is almost impossible, at times, to distinguish duodenal from gastric ulcer. Pain, however, if there is pain, does not occur in duodenal ulcer until two or three hours after the patient has taken food. With an empty stomach the pain is usually increased. On the contrary, the pain is relieved by taking food—the so called "hunger pain" of duodenal ulcer of Mayo-Robson. The reason of this, it is supposed, is because the acid gastric secretion is neutralized before passing the pylorus; thus the irritation of the ulcer is prevented. Gastric ulcer often exists together with duodenal ulcer; in this case a positive diagnosis is almost impossible. Hematemesis is also rare; in duodenal ulcer melena is often present; the quantity of blood in the stools is, as a rule, scant; tenderness is near the right costal border and extends somewhat downward; jaundice is rare—its presence, however, is an indication that the papilla of Vater is invaded, or it may be due to accompanying duodenitis; perforation is more frequent than in gastric ulcer. Gastric ulcer must be differentiated from gastritis; in this the vomiting does not recur regularly after taking food; constant nausea is almost pathognomonic of this inflammatory condition. The tenderness here is diffuse, and not localized as in gastric ulcer. Absence of food with other appropriate treatment quickly relieves this inflammatory affection, as a rule, while in gastric ulcer often the symptoms persist, and, if temporarily relieved, will frequently recur. Hemorrhage from the gastrointestinal tract due to other causes must be differentiated from gastric ulcer. A sudden rupture of varicose veins in the stomach without ulcer might give rise to a profuse hematemesis. An enterorrhagia from a walking case of typhoid fever might give rise to a suspicion of gastric ulcer. The surgeon must, therefore, be careful and, so far as he is able, get other symptoms than hemorrhage in gastric ulcer. A distinction between gastric ulcer and gastric carcinoma is frequently made, but with a thickened chronic ulcer with perigastric adhesions the diagnosis is difficult. Gallstone colic and cholecystitis, both chronic and acute appendicitis, as well as chronic and acute pancreatitis, must be thought of in the differentiation.

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## Journal of the American Medical Association.

*May* 17, 1913.

1. Antivivisection Legislation; Its History, Aims and Menace. W. B. Cannon.
2. Vertigo. A. C. Reed.
3. A New Differential Leucocyte Count Chart. W. H. Watters.
4. Laryngeal Tuberculosis. R. Levy.
5. Thrombophlebitis of the External Iliac Vein. M. Leale.
6. Skin-Grafting without Dressings. J. Wiener.
7. Plague Eradication in Porto Rico. R. H. Creel.
8. The First Successful Resection of the Thoracic Portion of the Esophagus for Carcinoma. A Preliminary Report. Franz Torek.
9. Successful Transplantation of Graft without Periosteum. H. G. Wetherill.
10. Impacted Ureteral Calculi Released by Fulguration. H. D. Furniss.
11. Bursting Rupture of the Stomach of Extraordinary Extent. J. D. Singley.
12. A New Bottle-Holder for Feeding Babies. A. C. Soper, Jr.
13. Cases Illustrative of (1) Fracture of Carpal Scaphoid with Luxation of Semilunar, (2) Fracture of Carpal Scaphoid with Palpable Deformity. P. G. Skillern, Jr.
14. A Sclerocorneal Trephine. B. Pusey.
15. Shelf for Rectal and Vaginal Operations. H. F. Graham.
16. Longitudinal Fissured Fracture of the Lower End of the Radius. J. L. Bendell.
17. A Diagram for Teaching the Varieties of Regular Astigmatism. S. L. Olsho.

2. **Vertigo.**—A. C. Reed states that in the child transient vertigo is often due to mechanical causes, but most commonly it is due to a middle-ear infection following the acute infectious fevers. It may also be due to anemia or malnutrition, and occasionally one must consider the pos-

sibility of brain abscess or cerebellar tumor. In early adult or middle life vertigo can most often be traced to a vascular or reflex source, such as some disorder of the digestive or genital organs, or to arterial or myocardial changes. Ocular disturbances causing vertigo are also fairly frequent at these ages, and, of course, mechanical or aural vertigos may occur. With increasing age the vascular and certain types of reflex vertigo become more common. The vertigos from reflex irritation are most commonly due to irritation in the digestive tract or the pelvis. In treating these a sharp purgative may be given, followed by stimulants and sedatives and such medicines as may affect favorably the trouble in the exciting organs. Neurotic vertigos are somewhat similar to the reflex ones. They are common in neurasthenia and in certain degrees of nervous and emotional stress. Barany says that the vertigo of neurasthenia is characterized by irregular nystagmus, differing from the quick return of labyrinthine vertigo. Palliative treatment is secondary to thorough and persistent attack on the fundamental neurotic condition. Vertigo from purely vascular conditions or derangements, such as congestion, arteriosclerosis, anemia, and other disturbances of the cerebral circulation, should be treated according to the vascular underlying condition. Toxic vertigo, as from alcohol or a nephritis, calls for a like management. Auditory vertigo may signify organic disease, and is due to disturbance of the function of the space sense of the eighth nerve. This may be due to slight causes, such as the sudden occlusion of the eustachian tube, deranging the pressure in the tympanic cavity. Of the two labyrinthine vertigo from organic disease is more serious. Operative interference is seldom required in purely vestibular vertigo, but rest and quiet in bed are the prime needs. The second or paralytic type of vestibular vertigo following vestibular irritation, can be treated by progressive graded movements to reeducate the spatial sense of orientation. Meniere's disease is a term used to cover various forms of auditory vertigo with tinnitus and is always due to labyrinthine disease. Charcot's plan of giving increasing doses of quinine to cinchonism is recommended in this type and salicylate of sodium is said to be a good substitute for quinine in such cases. Vertigo from the disturbance of the ocular arc is less frequent than reflex or aural vertigos, and correction of the refractive error gives relief. Mechanical vertigos, like sea-sickness, car-sickness, etc., calls for no special method of treatment. To relieve the symptom when the cause is not apparent, the author recommends a purgative, rest, some volatile stimulant, and for internal administration sodium bromide 20 grains, three times a day, is probably the most satisfactory. A mustard plaster on the back of the neck, the application of warmth to the extremities, counterirritation with a weak mustard bath or hot water bags outside of the blanket, and occasionally a slight cautery of the mastoid region may be useful.

4. **Laryngeal Tuberculosis.**—R. Levy notes that among the earliest symptoms of laryngeal involvement slight intermittent hoarseness occurs as a local expression of a general anemia, often unilateral and on the same side as an existing pulmonary tuberculosis. In such cases a sensitiveness and irritability of the pharynx is also a suggestive early symptom. Pain as a symptom has an uncertain significance. It is not absolutely distinctive of tuberculosis but an important distinctive point is found in its increase in the act of swallowing between meals or at the beginning of a meal. It is unquestionably a valuable symptom but not pathognomonic. A common error is to diagnose laryngeal paralysis from constant or intermittent hoarseness in pulmonary involvement. This is most often due to laryngitis sicca. Some aphonia following hemorrhage, while suggestive, may be due to other causes, but if it occurs before the pulmonary lesion has been detected it has some significance. It is also a mistake to infer laryngeal involvement from sudden hoarseness and aggravation of symptoms generally. Statistics show the disease most fatal in the female, which may be ascribed to the occurrence of pregnancy—a dangerous complication in any case of tuberculosis. As regards the effect on the voice a large proportion of voices can be restored to usefulness even in cases in which extensive destruction of one vocal band has occurred. The least hopeful cases are those with extensive fibroid hypertrophy of the arytenoids and interarytenoid space associated with perichondritis invading the cricoarytenoid articulation. As regards treatment the consensus of modern opinion supports the following: (1) Treatment by means of rest to vocal organs in conjunction with rest and general hygienic measures. (2) Local measures, modification of surgical procedures. Among these the use of the galvanocautery seems to have at the present time the most advocates. (3) The relief of pain by injection or section of the superior laryngeal nerve. (4) The use of tuberculin.

5. **Thrombophlebitis of External Iliac Vein.**—M. Leale discusses the subject of the symptomatology and diagnosis of thrombophlebitis of the external iliac vein and reports a case complicating typhoid fever. Thrombophlebitis of any vein is usually the result of a bacteriemia or toxemia from surgical infections or infectious disease but it may occur from any cause increasing the coagulability of the blood. In most cases a constriction of the vessel wall is needed, but anything lowering the vitality of the blood-vessels or markedly retarding the velocity of the blood-stream in the vein tends to favor it. The symptomatology may be very clear or may be very obscure and in examining for lesions in the external iliac veins the anatomical conditions must be kept in mind. The further above Poupart's ligament the thrombophlebitis occurs, the greater the difficulty. When it is merely an extension of the process in the femoral the case is different but when it begins within the abdomen an early diagnosis is very important and difficult. The early symptoms are a dull ache or more or less sharp localized pain and a sudden rise in the pulse rate which is usually small, followed later by fever, and it may be twenty-four hours after the first symptoms before anything can be found by palpation. In a day or two there is likely to be edema of the leg or near the site of the thrombus but this may be a late symptom. The edema of cardiac or renal disease shows more pitting on pressure. The occurrence of distention or regional or general tympanites should be noted. In other acute abdominal conditions the pain is frequently not so localized, and there is a marked fall in the blood-pressure in acute abdominal conditions and a steady aggravation of the symptoms. The rigidity of overlying muscles is not so marked in iliac thrombosis. The brief rapidity of the pulse is a hopeful symptom but it does not usually last very long. Blood examinations in the early stages of thrombosis do not show as marked leucocytosis or as great a rise in polynuclears as in the acute stages of most infections. Careful examinations of the blood may afford valuable evidence. In considering the prognosis one must bear in mind that the thrombus may not completely occlude the vein at the start but may do so later, and then the prognosis will depend on how rapidly the collateral circulation is formed or whether or not the thrombus is absorbed. The possibility of an embolus is also to be considered. The condition of the patient is important. The better the circulation of the blood and the condition of the heart and blood-vessels, the more rapid the disappearance of the symptoms. In the case reported the complication occurred in an otherwise uneventful convalescence from typhoid fever.

6. **Skin Grafting without Dressings.**—J. Wiener reports a case in which he tried skin-grafting without dress-

ings. The conditions were unfavorable and yet the results were such that he has used this method of open grafting even in desperate cases and almost always with success. He has found it inadvisable to apply a wet dressing, even a bland one, until at least two weeks have elapsed. The grafts are cut as thin as possible and applied in the usual manner. Suppurating sinuses in the grafted area are packed with iodoform gauze. These packings are changed, as often as they become saturated with the discharge, without disturbing any of the grafts. The grafts can be placed within a half inch of a discharging sinus. During the first day or two crusts of inspissated serum form between the different grafts; these crusts should not be disturbed. For seven or eight days, or even longer, no dressing of any kind is applied. Usually after the first day or two, the grafts have already become firmly adherent and have a healthy pink color. After seven or eight days a weak ichthyol ointment is applied over the entire grafted area. Under this dressing the crusts that have formed between the grafts drop off, and in a short time the area assumes a normal appearance.

8. Resection of Esophagus for Carcinoma.—By F. Torek. (See Medical Record, April 26, 1913, page 774.)

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## The Lancet.

*May* 10, 1913.

1. The Physiology of the Open-air Treatment. L. Hill.
2. "Colds in the Head" and the Influence of Warm Confined Atmospheres on the Mucous Membrane of the Nose and Throat. L. Hill and F. F. Muecke.
3. Three Cases of Symmetrical Necrosis of the Cortex of the Kidneys Associated with Puerperal Eclampsia and Suppression of Urine. R. Jardine and A. M. Kennedy.
4. Alimentary Toxemia. W. E. Dixon.
5. Chronic Intestinal Stasis. C. H. Fagge.
6. Remarks on Abnormal Intraabdominal Developmental Adhesions. H. M. W. Gray and W. Anderson.
7. On the Prognostic Significance of Secondary Polycythemia in Cardio-pulmonary Cases. F. Parkes Weber.
8. Difficult Labor Caused by Fetal Ascites. S. G. Luker.
9. Man's Mental Evolution Past and Future. H. Campbell.

1. Physiology of Open-Air Treatment.—L. Hill is convinced that the whole of the effect of open-air treatment is due to the movement, temperature, and moisture of the air and has nothing to do with its chemical properties. Conformity to a better mode of life will enormously increase the health and happiness of everybody. Modern life in tending to put people into confined places, heated by convectors, with perfectly made windows and no draughts, is diminishing the metabolism, vigor, health, and happiness of everybody, quite apart from causing tuberculosis. Man cannot go straight into these artificial conditions when he has been for a million years living an outdoor life, facing every element, wind, cold, and rain. One should compromise and arrange matters so that the individual may get open-air exercise and exposure to wind and weather.

2. "Colds in the Head."—L. Hill and F. F. Muecke using a mirror and speculum have found that the mucous membrane flushes and swells, becoming turgid with blood and tissue lymph and covered with a thick secretion, when the subjects are confined in a warm moist atmosphere—*e.g.* 80° F. At the same time the airway is narrowed and even choked up in those who have a deflected septum. After passing from the warm to a cold atmosphere one finds that the mucous membrane quickly becomes paler owing to constriction of the blood-vessels, but still remains swollen with tissue lymph, as is shown by its appearance and by the fact that it pits deeply when touched with a probe. The altered conditions seem to be such as may increase the liability to infection. In a warm crowded room the swollen mucous membrane of the nose of an individual, covered, as it is, with thick secretion, will be massively infected with bacteria explosively sprayed out by the other occupants who sneeze, cough, and speak in the room. On passing out into the cold, misty, outside air the blood-vessels constrict, and at the same time the nose is chilled by the greater conduction of heat, due to the cold particles of water in the inspired air. The defensive mechanisms of the blood, the immunizing properties of the plasma, the cleansing action of the ciliated epithelium, and phagocytic action of the white corpuscles are diminished by the low temperature, while the pathogenic bacteria find a suitable nidus for their growth in the secretion and tissue-lymph of the swollen mucous membrane. The immunity to "colds" of those who live an open-air life is well known. Massive infection does not occur, and so long as they are exposed to the cold outside air the mucous membrane, like the skin, remains pale and taut, moistened with a scanty secretion. One can lessen the liability to such infection by keeping the air of rooms and crowded meeting places cool and moving. A fan set to whirl the air in an experimental chamber will keep the nose paler and drier and the airway patent even when the air is heated to 100° dry and 83° F. wet bulb. Keeping the air in motion in crowded rooms by means of fans will not only keep the mucous membrane in better state, but also diminish the massiveness of the direct infection from mouth to mouth or nose to nose. Warm, dry air flushes the mucous membrane with blood, but produces less swelling and secretion than warm, moist air does. While convection heat, *e.g.* from an anthracite stove, flushes and swells the nasal mucous membrane, radiant heat, *e.g.* from a modern gas fire causes sweating from the skin and does not affect the nose. The cause of the headache and stuffiness felt in rooms heated by steam pipes, stoves, and hot air is due to the swelling of the mucous membrane of the nose and its air sinuses. The change from convected heat to radiant heat relieves the stuffy feelings, and at the same time causes the skin to become moist and the nose to return to the normal "out-of-door" appearance.

3. Symmetrical Cortical Necrosis of the Kidneys in Puerperal Eclampsia.—R. Jardine and H. M. Kennedy report three cases of this condition, in which suppression of urine was a pronounced symptom. An almost constant feature of fatal cases of eclampsia is focal necrosis in various organs of the body, but chiefly in the liver, and these are frequently associated with capillary thrombosis. In the author's three cases to the naked eye there appeared to be focal necrosis in the liver. Capillary thrombosis, however, was *not* apparent, and, in fact, in one—the earliest case——there was great dilatation and congestion of capillaries in the foci. The cause of the necrosis in the kidneys is the same as that which causes necrosis in the liver, and the thrombosis in the smaller cortical renal arteries is secondary to the necrosis of the renal cells In discussing the cause of the necrosis, the authors fall back upon the explanation that it is the deleterious influences on the cells produced by the eclamptic toxin, whatever it may really be.

4. Alimentary Toxemia.—W. E. Dixon believes that alimentary toxemia is poisoning produced not by "toxins," the term being used in its strict sense, but by relatively simple chemical substances. These poisons originate as a result of digestion or putrefaction of food, chiefly of the proteins. It is true that under certain conditions a kind of toxemia may be induced from carbohydrate metabolism; for example, in certain conditions of the bowel an excess of lactic acid may be found leading to an excess of ammonium salts in the urine and some four or five times the normal excretion of calcium; the result may be calcium starvation, of which one symptom is probably joint trouble. When the protein molecule is broken down by the action of acids, alkalies, or by digestive ferments, amino-acids are ultimately produced, and it is in this form that proteins are absorbed, and it is known that the administration of the final cleavage products of an artificial sterile pancreatic digestion will serve to preserve nitrogenous equilibrium in

an animal, as well as the administration of intact proteins. These amino-acids, of which a considerable number are known and which vary in kind with the proteins from which they are formed, are then non-poisonous substances and do not give rise to evil results in the animal body. Under the influence of putrefactive organisms these amino-acids may, however, be slightly altered in composition and become toxic.

5. **Chronic Intestinal Stasis.**—C. H. Fagge does not regard as inflammatory the bands localized to the terminal ileum with the appendix free and normal to the naked eye, always passing in the same direction as those which pass down and inwards to the ascending colon, and limited to one aspect of the intestinal circumference. He would even go so far as to regard as non-inflammatory some bands in which the appendix was involved. One has only to examine carefuly several of these bands to realize that they are quite unlike in appearance ordinary inflammatory adhesions. These bands and kinks produce pathological states, as evidenced by abdominal pain, tenderness, loss of weight, tone, and activity; flatulence, constipation, etc. Stasis is generally due primarily to a pathological condition of the lower ileum, evolutionary in origin, and in well-marked cases surgical treatment is required.

7. **Secondary Polycythemia in Cardio-Pulmonary Cases.**—F. Parkes Weber asks whether polycythemia is a good or a bad sign in cardiac cases. In a former paper he answered this question as follows: "Just as hypertrophy of the walls of the heart is useful in so far as it compensates for mechanical defects in the valvular apparatus, so also is polycythemia useful in so far as it compensates for difficulties in the proper oxygenation of the blood and tissues of the body; but just as in cardiac valvular disease great hypertrophy of the heart indicates some grave defect in the valvular mechanism, so also an extreme increase in the number of erythrocytes in the blood points to there being great impairment of the normal process of oxygenation of the body." With the cardiopulmonary cases, however, the prognostic significance of the polycythemia is somewhat different, or rather the outlook is exceedingly grave at the stage of the disease when cyanosis and a great degree of polycythemia become striking clinical features.

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## British Medical Journal.

*May 10, 1913.*

1. Intussusception. H. S. Souttar.
2. On Transverse Colostomy as the Operation of Election. L. McGavin.
3. Urachal Fistula. J. Elmsly Mitchell.
4. Enchondroma of the Manubrium Sterni Successfully Removed by Operation. W. G. Richardson.
5. A Case of Abdominal Aneurysm with Unusual Features, Operated on by Means of Colt's Apparatus. J. Rupert Collins and C. Braine-Hartnell.
6. Cheilotomy for Crippling Traumatic Arthritis of the Hip-Joint. W. I. de C. Wheeler.
7. The Interneuronic Synapse in Disease. B. Henry Shaw.

1. **Intussusception.**—H. S. Souttar pictures the symptomatology of acute intussusception in infants as follows: The child is usually well nourished and in perfect health. The sudden onset of this severe condition in a fat and healthy baby is most characteristic. As a rule the condition starts with a severe and sudden abdominal pain, coming on in acute attacks with intervals often of complete relief. The child may vomit, but never to any great extent. Tenesmus is a marked feature, the child straining incessantly, but only passing a little blood and slime. At first a motion or two may be passed, but after this there is absolute obstruction, and no trace of bile will be found on the napkin. This sign, which was first pointed out by Barnard, is almost infallible, and should in every case be part of a routine examination. The blood and mucus are exuded from the intussusception in sufficient quantity to soon clear the lower bowel of its contents, in view of the violent peristalsis which is occurring. On examining the child in a typical case the abdomen will be fairly lax unless the child is actively straining. In the course of the colon a tumor may be felt. It has very definite characteristics: It is in the region of the transverse or descending colon. It gradually shifts its position, advancing along the colon and increasing in extent. It is sausage-shaped and of horseshoe form, the concavity being towards the center of the abdomen. Manipulation causes it to contract and become hard. This hardening is accompanied by an attack of pain and an increase in the tenesmus. The characteristic feature is that, although the tumor may not be very tender, and manipulation may cause no instant pain, the pain rapidly follows and continues long after manipulation has ceased. The apex may be felt by the rectum. The presence of this tumor is the essential sign of intussusception. In studying cases of intussusception occurring after the first year of life one is at once struck by three features in which they contrast forcibly with cases in infants. In 70 per cent. of the cases a definite cause can be discovered; they tend to be chronic; the symptoms are irregular. In an extensive series of cases (Eliot and Corscaden) the following were found to be direct causes: (1.) Tumors were found in 40 per cent. Of these 24 per cent. were innocent. (2.) Ulcers were found in 14 per cent., and were due to typhoid fever, dysentery, and tuberculosis. (3.) Meckel's diverticulum (inverted) was the cause in 12 per cent.—a very remarkable number considering the comparative rarity of this abnormality. (4.) Trauma, such as a blow or a violent strain, was a definite cause in a few cases. More or less acute attacks occur, with intervals during which the patient is free from any acute symptom and only complains of general poor health. The attacks become more frequent and severe as time goes on, but they may go on over a period of from a month to a year. Pain is always a prominent feature. Vomiting occurs in two forms, which should be carefully differentiated. With the pain there is the bilious vomit due to dragging on the mesentery. Apart from pain, and in the later stages, there occurs the dark vomit of intestinal obstruction, with all the grave characteristics of that condition. Wasting and anemia are always marked, and frequently lead to a false diagnosis, such as tuberculosis, peritonitis, or carcinoma. Either constipation or diarrhea may be present. The former is more usual in enteric intussusceptions; the latter occurs in colic cases, and is accompanied by the passage of blood and mucus. A tumor is to be felt in the abdomen in most, if not all, of the cases.

2. **Transverse Colostomy.**—L. McGavin reports a series of cases in which a colostomy was performed. Of these 20 were done by the transverse and 6 by the iliac method. Of the former 3 were done for non-malignant and 17 for malignant conditions. Of the non-malignant 1 died of strangulation at three months, and 1 of phthisis at two years from operation, the third is alive and well to-day. Of the malignant cases 5 are alive to-day, 1 at three years, 1 at two years, 2 at eighteen months, and 1 at a year from the time of operation; and in all of these this method of colostomy has justified the opinion the author has formed of it, as it has also done in all cases in which the patients lived sufficiently long to allow of an honest judgment being formed. The transverse colostomy has many advantages and few objections. (1) There is good sphincter control. (2) There is firm support for a belt and plug. (3) There is freedom from prolapse. (4) There is greater accessibility both for cleansing and for defecation. (5) There is good spur formation. (6) The artificial anus is removed to a distance from the site of the growth in the rectum.

3. **Urachal Fistula.**—J. Elmsly Mitchell states that in urachal fistula, from which a certain amount of urine escapes upon attempts at micturition, any of the following

conditions may be observed: (1) A button-like papillary projection at the umbilicus with an orifice at its summit, through which a probe may be passed; (2) the urine may escape at several points of a hernial protrusion, covered externally by mucous membrane; (3) the orifice may be a mere deficiency in the linea alba. The abnormality may be said to be one of degree, the greatest deformity being fissure of the bladder, in which condition the allantois has failed to close completely inside the abdomen, so as to form the urinary bladder, and the lateral borders of the latter are adherent to the sides of the cleft, while the anterior wall is entirely absent. Again, the cleft may be confined to the upper part of the bladder, which presents itself as a red protrusion just beneath the umbilicus, the parts below being perfect. Whichever condition exists, there is a greater or less amount of discomfort and danger.

7. **The Interneuronic Synapse in Disease.**—B. H. Shaw believes that the cell-exhaustion theory does not satisfactorily explain the pathology of acute delirium. For purposes of comparison the author examined the records of 17 cases of insanity occurring after surgical operation, in which the important factor producing the alienation was exhaustion—physical and mental—plus the slight shock of the operating perhaps, and contrasted them with 25 cases of insanity immediately supervening in sudden and violent mental shock. It is pointed out that the type of insanity resulting from severe shock is decidedly different from that produced when exhaustion is the important etiological factor. As a result of sudden and severe mental shock, the tendency is to acute delirium, and when prolonged exhaustion enters into the causation the tendency is to depression. The greater the shock the more is the tendency towards delirium. The tendency in acute delirium is either towards rapid recovery or death. Whatever be the nature of the nerve current, the cell has apparently the power of releasing energy on the reception of a stimulus corresponding in degree to the intensity of that stimulus. The balance of evidence appears to be in favor of the nerve impulse being a physical process, and resistance to the passage of the nerve impulse is principally met with at the interneuronic synaptic membranes and finer terminal arborizations. The author has noticed that great susceptibility to the action of strychnine exists in hysteria, relatively small doses causing most unpleasant sensations, such as tachycardia and much mental uneasiness. Might not this indicate, he asks, that in hysteria the neuronic trouble is synaptic—that there is normally in this affection too little interneuronic resistance, resulting in a constant leakage of current, so to speak, outside the area to which it is limited in the normal individual?

## Berliner klinische Wochenschrift.

*April 28, 1913.*

**Infection and Digestion.**—Meyer states that even the ancients recognized "close relationship between digestion and infection, as shown for example through the fact that in fever a patient requires no nourishment. This fallacious interpretation was long ago exposed and has become replaced by another set of facts which show that digestion can cause or increase a fever which is not as a rule dependent on infection but which may in certain cases be due to or associated with some infectious process. For example, an infant may be attacked with some mild, obscure infectious process, such as furunculosis or colipyelitis. In such cases food may determine some derangement of the gastroenteric tract, most frequently diarrhea. The younger the individual the greater the tendency to diarrhea, because the instability of the intestine varies directly with the youth of the subject. In adults some infections also express themselves as a gastrointestinal crisis. The influenzal infection, for example, may manifest itself so decidedly by vomiting and diarrhea that authors write of a gastroenteric type of grip. It can be shown in all such cases that the diet of the patient has predisposed to digestive crises. Tests of the stomach in such cases also show diminished HCl in the gastric juice, diminished motility, and diminished capacity for resorption, so that the stomach is unable to handle food which in healthy equilibrium caused no disorders. We can only suppose that the infectious malady cripples the stomach and that certain types of food then cause a crisis.

**Diplomellituria.**—Stern implies by this term the coexistence or alternation of diabetic and non-diabetic glycosuria in the same subject. He has notes of over fifty such cases made during the past nine years. He insists that the two conditions (even if bound up in some common anomaly of metabolism) do not represent stages of one process but distinct pathologic states. A differential diagnostic parallel is given, from which may be gleaned that non-diabetic glycosuria may usually be connected with some antecedent condition, and disappears when this is removed; that the amount of urinary sugar is always small; that the bulk of the urine is not increased; that diabetic diet exerts little or no influence and that Gerhardt's reaction is invariably negative. Diabetic glycosuria is by contrast of unknown source, is eminently chronic, is usually of much higher degree, and is accompanied by polyuria. Gerhardt's reaction may be positive. The author apparently sees nothing in common between the two conditions, i.e., no basic carbohydrate intolerance, so that the coexistence is purely coincidence.

**Abderhalden's Hematological Studies and the Internal Secretions.**—Münzer discusses the relationship between Abderhalden's diagnostic reactions for pregnancy and tumors on the one hand and the pathology of internal secretions on the other. Naturally the alien albumin from the placenta and tumors may have something in common with the disordered secretions of glands of internal secretion. These substances may not, like those first mentioned, be split up by enzymes in the blood. Rather they themselves represent cleavage products of a more or less alien and toxic character. Fauser has recently sought to show that such products are able to produce psychoses, notably thyreopsychoses, dementia precox and luetic psychoses. In dementia precox cleavage products from the genital glands are accused. In metaluetic psychosis some unknown component of this sort may be unearthed in time. The parathyroid is suspected in connection with convulsive affections as well as the myasthenic states. It is time that these patients were treated with pluriglandular extracts

## Münchener medizinische Wochenschrift.

*April 29, 1913.*

**Complement Fixation Reaction in Congenital Idiocy.**—Froesch first gives an account of the Wassermann tests in idiocy. The percentage has usually been small, 1 or 2 per cent. in unselected material, although exceptionally it has been high—15 and even 30 per cent. The author's experience has been very unfavorable as but one patient in 102 gave a positive reaction. However, in about one-half of all cases there was exhibition of hemolysis. The author therefore prepared an artificial lipoid mixture in order to compare this test in idiots and controls. The inhibition in the Wassermann test clearly had no bearing on the presence or absence of syphilis. The reaction is in no wise specific for syphilis or any other affection but seems to indicate some breaking down of the central nervous system. In time the reaction may be shown to figure in bringing about Wassermann's reaction.

**Fatal Peritonitis Following the Use of a Laminaria Tent.**—Hussy reports a case from von Herff's clinic,

after stating that the use of these articles is very popular among the laity. In the United States their familiar use has much diminished, at least as far as the physician's endorsement is concerned. The victim was aged 45 and had begun to be irregular in her menses. This, however, was not imputed to an advancing menopause but to a combination of myomatous uterus with impending abortion. After ergot and a tamponade had accomplished nothing the house physician (Basel, Woman's Hospital) introduced a laminaria tent. Soon afterwards a chill followed by fever set in. The woman's face was pale and anxious. Hypogastrium tender. Uterus unevenly enlarged. Diagnosis, myomatous uterus, beginning peritonitis. There was a suspicion that the swelling tent had caused perforation. An exploratory laparotomy revealed a purulent peritonitis. The uterus and adnexa were removed, but patient soon perished from generalized peritonitis. The rationale of the infection was fairly clear. The initial tamponade no doubt paved the way and as a result of dilatation with the tent the offending germs ascended into the tubes and escaped into the peritoneal cavity. Schridde and others have shown how easily this mechanism operates and how laminaria tents contribute to the production of peritonitis. Naturally this sequela is not of universal occurrence. In fact not a few regard the use of tents as safer than metal dilators plus general narcosis.

**The X-Rays in Ovariogenous Affections.**—Hirsch champions the doctrine that not only at the climacteric but at any period in woman's life in which the ovaries are at fault, the Röntgen rays, through their destructive action upon the latter, are able to cure these ills. In 20 cases of amenorrhea with myoma the average dose was 81 x, and in 18 cases of amenorrhea with fibrosis the figure was 40 x as befits the fact that in the latter series the menopause was at hand. The main contention is the fact that through diffuse radiation as much as 1000 x are used up at a session. The economy of dose secured by the author is the result of special technique, of the type devised by Professor Klein for irradiation in cancer of the uterus, ovaries and mammæ. A special apparatus is utilized and the rays are concentrated on the so-called battle zone.

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## Deutsche medizinische Wochenschrift.

*April* 24, 1913.

**The Bacterial Causation of Erythema Multiforme.**—Saisawa of Kitasato's laboratory, Tokio, believes that he has discovered that which has generally been supposed to exist. No doubt the prevalent view has been that a number of germs can call forth the same clinical picture, and several were long ago accused in this respect. The author shares this opinion and only claims that he has proved the existence of one such bacillary cause. It is of course plain that not all infectious germs can exceptionally give rise to the picture of erythema multiforme, else we should see it frequently in measles, scarlatina, etc. The author's case was seen in connection with preventive typhoid vaccination in a Japanese regiment. While getting ready to vaccinate the members the required tests excluded the patient under consideration, who was found to be febrile and was at once isolated. The picture was one of erythema multiforme, but the symptoms, at first mild, began to grow much more severe than usual. The lesions on the face became confluent, with great swelling. New crops appeared and some pus formed. There were no marked gastroenteric symptoms, although some round worms were expelled. There was acute cardiac dilatation which required digitalis and strophanthus. A special bacillus was found in the blood and urine. There were present phenomena of acute nephritis, and for some days the outlook for the patient was not encouraging. The author resists the temptation to call the disease influenza, which is known to be accompanied at times by erythema multiforme. The germ isolated by the author bears some relation to that described by Sabrazes. Thus far he has been unable to cultivate it, but other tests show a resemblance to the influenza bacillus.

**Action of Thorium-X on the Blood Cells.**—Arneth concludes a serial article on this subject as follows: When thorium-X is incorporated into the organism a very variable intensity of action is manifested on the leucocytes and erythrocytes. While in leukemia the number of leucocytes diminishes there is no corresponding improvement in the composition of the blood. Some months after injection of thorium-X, certain delayed changes may appear and the blood once more becomes approximately normal. The general impression is that blood studies have not been sufficiently carried out, with especial regard to counts, and that thus far we are unable to dose the remedy properly.

**Apocynum as a Heart Tonic.**—Textbooks many years old describe the root of ordinary milkweed, otherwise apocynum or Canadian hemp, as containing one or more glucosides which act in a manner similar to digitalis preparations upon the heart and kidneys. However, the same principle is also a drastic cathartic which naturally interferes with the other activities. Allard, however, treats the subject as relatively new and has been testing a new glucoside of apocynum which has been placed on the market under a proprietary name. The substance in animal tests behaves much like digitoxin. It also appears to possess a sedative and hypnotic action. In regard to the purgative activity of the old glucoside it is only mentioned that "in some cases diarrhea is caused" which may unfit it for administration *per os*. The remedy is unfortunately unsuited for hypodermic use, so that the intravenous method would seem to be that of choice. There does not appear to be any need of such a remedy as digitalis can do all that apocynum can and do it better and with less trouble. In supposititious cases in which digitalis is unsatisfactory it could be tested.

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**Umbilical Concretions.**—Herzenberg gives a short but monographic account of this very rare find. He excludes from consideration all foreign bodies which have merely lodged temporarily in the fossa, without coincident change in the soft parts. The true concrements have the following genesis: at the outset the navel has a peculiar configuration, which favors the arrest in loco of shreds of clothing, hairs, dirt, etc. The second factor is the presence of some tenacious secretion from the sebaceous glands which acts as a cement. Upon this for a nucleus more sebum and epithelial débris are deposited until a conglomerate has formed. The presence of lime salts makes the latter a sort of tophus which has received the name of umbilical stone. Having attained a sort of natural limit of growth the concrement now begins to act as an irritant foreign body, setting up an inflammatory reaction which may involve a large area and simulate a tumor. Infection may readily occur with production of a phlegmon, the discharge from which contains in addition to pus crystals of cholesterin, fat drops and phosphates. As a rule from one to two months are required for the formation of one of these inflammatory tumors, this interval ending with suppuration. Given a phlegmon of the umbilical region, the presence in the discharge of phosphates points at once to the presence of one of these umbilical concrements. In the absence of phosphates in the discharge we have to think of the possibility of dermoid cysts, umbilical adenoma and even of actinomycosis. The author advises that in cases of alleged umbilical dermoid we should search for the presence of a concrement.—*Deutsche medizinische Wochenschrift.*

## Insurance Medicine.

**The Life Insurance Company as a Force in the Movement for Physical Welfare.**—In an article under this title, in the *Popular Science Monthly* for April, 1913, Eugene Lyman Fisk, Medical Director, Postal Life Insurance Company, shows why it is worth while for life insurance companies to engage actively in health-conservation work, and how it can be carried on by them to the best advantage. He summarizes the reasons as follows: (1) The machinery is at hand. (2) It can be utilized without loss, and with probable gain to both company and policyholder. (3) the nature and extent of the life insurance business imposes a public obligation to exercise this power for the welfare of the people. The medical and scientific staff of a life insurance company is trained in the consideration of disease-tendencies, rather than active diseased conditions; therefore, the influence of living-habits, and the significance of physical disabilities and abnormalities and especially of personal and family history, upon large masses of insured lives, form the body of the rapidly developing science of medical selection. By combining this intrinsic knowledge with the readily available extrinsic data of personal hygiene, the medical officers of a life insurance company are especially equipped to guide their policyholders toward safe and sane living-habits. Experience also shows that the policyholder will listen to the advice of his life insurance office on such matters, as he discerns the practical business motive that prompts it, however much there may be of normal genuine interest in human betterment. There are 25,000,000 old-line policyholders who pay annually to 250 companies. Every policyholder is in touch with at least two other individuals, thereby affording seventy-five million points of contact with the public, and constantly open channels of communication, through which educational material may be transmitted by these companies. Reduction of mortality-rate by health-conservation, means lowering of premiums paid by policyholders, and a saving, over and above the cost of carrying on the work, of $5,000,000 annually, in the United States, besides an annual saving of approximately 10,000 lives. Fisk gives the methods employed by his company to carry on health-conservation work. A Health Bureau was established in 1909, and has issued many publications, such as periodical bulletins to policyholders, dealing with such subjects as the causation of degenerative affections of the heart, blood-vessels, and kidneys; affections of the nose, throat and lungs, with preventive measures; dental and oral hygiene; drug addiction; physiological effects of alcohol and tobacco; causation and prevention of many infectious diseases; diet-hints; summer and winter hygiene, etc. Thousands of monographs have been distributed among educational centres. But probably, the most important benefit to the policyholder, has been through the system of free, annual medical examinations for the detection of disease or disease-tendencies at the earliest possible moment. Although less than 10 per cent. of the policyholders have availed themselves of this privilege, the results more than justify the company's action. Forty per cent. of the risks examined, were found impaired, and of these, 44 per cent. were absolutely unaware of their impairment, especially of the degenerative affections found at middle life, showing the need for such a system. Thus far, only three out of 250 companies operating in this country are active in health-conservation work. Fisk says the pressure of public opinion is needed to set in motion this vast machinery for lifting the burdens of humanity.

**Accident Insurance for Government Employees.**—A bill providing compensation for employees of the Federal Government suffering injuries or occupational diseases in the course of their employment, was introduced in the Senate on April 12, 1913, by Mr. Kern of Indiana. This bill has been drawn after careful investigation by the American Association for Labor Legislation and is to supplant the present law, which has been in force since May 30, 1908. As the law now stands, only one-third of the 350,000 federal employees are benefited, no relief is granted for incapacity lasting less than fifteen days, no provision is made for medical treatment, and the most liberal benefit grants only one year's wages even for total blindness, life-long disability, or death. Solicitor Charles Earl, for the Department of Commerce and Labor, reported recently that during the past three years, government employees suffered 21,000 serious accidents, 670 of which were fatal, but in only one-third of these cases did the injured workman or his dependents receive any compensation, because under the present law the remaining two-thirds of Uncle Sam's employees are unprovided for.

The Kern bill remedies the weaknesses of the old bill by including all civilian employees of the Government, reducing the waiting time from fifteen days to three, and granting a liberal scale of compensation during the entire period of disability. It also provides for the prevention of accidents and occupational diseases in navy yards and government workshops, and allows compensation for occupational diseases such as lead poisoning. A commission of three is provided to administer the law. Senator Kern points out that his bill will remedy the present mistakes for all time, and relieve the embarrassment and time-consuming special legislation at present required. The Kern bill will merely extend the compensation principle already adopted by the Government and eighteen individual States. The authors of this bill declare that when it is passed by Congress, the United States will approach more nearly the standard of the model employer, and America will have at least one compensation law up to the standard set by England, Switzerland, and Germany.

**Child Insurance Limit.**—The Court of Appeals at Albany has sustained the decision that a child between the age of seven and eight years cannot lawfully be insured for more than $168, as provided by the State insurance laws. This decision has been upheld in order to prevent neglect or actual maltreatment of young children by those responsible for them, for the purpose of obtaining pecuniary benefit out of the child's death. As the number of policies on a single life could not be limited, the result could only be effected by limiting the total amount of insurance on a child's life.

**The American Association of Medical Examiners** will hold its annual meeting on June 16, at 10 o'clock A. M., at the Hotel Radisson, Minneapolis, Minn. All physicians interested in insurance work are cordially invited to be present. Dr. Frank W. Foxworthy of Indianapolis is the president of the Association, and Dr. G. Strohbach, Miami Building, Cincinnati, secretary.

# Book Reviews.

Investigations on Epidemic Infantile Paralysis. Report from the State Medical Institute of Sweden to the Fifteenth International Congress on Hygiene and Demography, Washington, 1912. Published by the State Medical Institute. Stockholm: Nordiska Bokhandeln, 1912.

The first epidemics of poliomyelitis occurred in Sweden, which was also the seat of the awful ravages of this disease in 1905 and 1911. It is quite natural that the most valuable clinical and epidemiological studies of infantile paralysis should emanate from that country. The present volume comprises the results of the experimental and epidemiological studies of this disease, which were stimulated by the widespread epidemic of 1911. The experimental portion begins with an elaborate study of the presence of the virus of infantile paralysis in human beings, by C. Kling, A. Pettersson, and W. Wernstedt. Among other valuable results, it was found that the secretion from the mucous membranes of the mouth and intestine of persons who have recovered has had the power of infecting monkeys still several months, in one case 204 days, after the outset of the illness, giving rise to an experimental poliomyelitis with fatal issue. Another important study is that of the clinical picture of experimental poliomyelitis in monkeys, as well as the study of the histological changes in the spinal cord of monkeys affected by poliomyelitis. The second part of the volume details certain epidemiological experiences gathered from the epidemic of 1911. One of the most striking of these experiences was the observation that the disease tended to spare those communities that had suffered most during the previous epidemic of 1905, and that the areas invaded during the later epidemic were to a certain extent on the periphery of the areas affected during the earlier epidemic. In other words, the disease spread somewhat in the form of a ringworm patch. It is pointed out that in its epidemiological aspects poliomyelitis bears a close resemblance to epidemic meningitis.

Forensic Medicine and Toxicology. By C. O. Hawthorne, M.D., Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow; Lecturer on Forensic Medicine in the London School of Medicine for Women; Physician to the Northwest London and Royal Waterloo Hospitals. Third Edition. Price $1.75 net. New York: Longmans, Green, & Co.; London: Edward Arnold, 1912.

This book presents in a brief and succinct manner the subjects of legal medicine and toxicology. It is based upon the larger works, but by the omission of cases it is able to furnish to the medical student and practitioner all that he is required to know on the above subjects. The book is well written and may be recommended without reserve as one of the best of the smaller volumes on forensic medicine and toxicology.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D., LL.D. (Yalen); Professor of Surgery in Cornell University Medical College, New York; Consulting Surgeon to New York, Bellevue, St. John's, and Christ Hospitals; Corresponding Member of the Société de Chirurgie of Paris. Seventh Edition, revised and enlarged. With 459 illustrations and 39 plates in monotint. Price, $5.00 net. New York and Philadelphia: Lea & Febiger, 1912.

The name Stimson has become synonomous with the standard of authority on fractures. With the recent developments in the open treatment of fractures, the time is quite opportune for the appearance of a new edition of this work. This, the seventh edition, has been revised and enlarged, and contains among its additions the discussion of the operative treatment of recent fractures, a section on the treatment of old dislocations, three new sections on certain fractures of the small bones of the hand and foot, and one section on fracture of the external tuberosity of the femus. To the many excellent illustrations of the former editions, one hundred new ones have been added. There are in all 459 illustrations and 39 superb plates representing chiefly the *x*-ray appearances of fractures and dislocations. As regards the open treatment of fractures the opinion of the author may be quoted: "To sum it up, direct fixation is very rarely necessary; when it is made convenient by an existing wound it should be temporary, by the use of an absorbable suture or of one that can be easily removed after a few days. Pins reaching to the exterior are also objectionable because of the difficulty of keeping their track aseptic; the infection may spread to the fracture. . . . It is, I think, unquestionable that the results of the general use of M. Lane's method would not materially differ from those heretofore obtained by the use of other fixation methods, and it is, therefore, by the results of these other methods, and not by Mr. Lane's, that the propriety of open fixation is to be judged. . . . I still feel that the advantages claimed are inadequate to offset the discomforts and risks of the operation, and that in most hands even those advantages would not be obtained; that external splints would still be needed for fixation, and that suppuration followed by delay in union or death would frequently occur." A copy of "Stimson's Fractures" should be in the library of every practitioner.

A Manual of Immunity for Students and Practitioners. By Elizabeth T. Fraser, M.D. (Glas.), Late Assistant Bacteriologist, Glasgow Royal Infirmary; Beit Research Fellow. Price $1.60. New York: The Macmillan Company, 1912.

During the past twenty years the science of immunity has been the most living branch of medicine and to-day it occupies a position of the highest importance. In both diagnosis and treatment the general practitioner is constantly coming into contact with the immunologist (a better word than "immunizator") and it is essential that he acquire more or less knowledge of the fundamental facts of this science. To this end a large number of books, some good, many poor, have appeared within the past few years. This volume is one of the best of these books. Extremely elemental in character, it tells the story in "words of one syllable" so that all may understand. It can be recommended as a well prepared and easily negotiated first step toward familiarity with the great problems of immunity.

Insomnia. Its Causes and Treatment. By Sir James Sawyer, of London, Doctor of Medicine of the University; Fellow of the Royal College of Physicians, lately Lumleian Lecturer; Fellow of the Society of Antiquaries, of Edinburgh, Fellow of the Royal Society of Birmingham; Consulting Physician to The Queen's Hospital; once Professor of Pathology, then of Therapeutics, lastly of Medicine, in the Medical School; Knight Bachelor. Second edition with many revisions and additions. Price 2s. 6d. net. Birmingham: Cornish Bros., 1912.

The first edition of this little monograph was really a revision of chapters on the causes and treatment of insomnia appearing in the author's book entitled "Contributions to Practical Medicine." The present edition, therefore, represents a second revision. It is based on material of practice, and embodies notes on the prevention, analytical diagnosis, and medicinal and hygienic treatment of what is truly stated as a complex malady. An index has been introduced into this edition to facilitate reference, and other additions in the text are to be noted, derived from the author's later experience. Some further revision could be made to bring the book well up to date. It retains the colloquial style of the original clinical lecture of 1878, and much of the first part (on causation) could well be omitted as immaterial. The author cautions the reader not to begin treatment for insomnia until he knows that it is really present; and secondly, if present, to ascertain its nature as regards etiology. For its curative treatment he relies on medicinal, hygienic, educational, and physiological agencies. Each case requires separate study as to causes, idiosyncrasies, habits of life and of body and "temperaments." Many useful hints may be obtained from a perusal of this little book.

Medizinisch - Chemisches Laboratoriums - Hilfsbuch. Von Dr. Med. et Phil. Ludwig Pincussohn. Mit 75 Figuren und einer Spektraltafel. Price Marks 13.50. Leipzig: F. C. W. Vogel, 1912.

The field of the laboratory worker in medicine has become so extensive and demands so much more than a smattering of many branches of scientific knowledge that there is every reason to suppose that the present volume will find numerous appreciative readers. All of the chemical and physical procedures likely to be required by medical investigators are described more or less fully, and the attempt has been made to add to the completeness of the book by including sections on the examination of the blood, on bacteriology, complement fixation, etc. These, of course, are so brief as to have little value and in the opinion of the reviewer might better have been omitted. Even in other portions of the book the descriptions of the methods could advantageously have been made more detailed, since but few references to original articles are supplied. This is the only criticism that seems justified, for the amount of information here brought together is truly enormous and the volume is just what is needed for quick reference when there is no time or opportunity for consulting the encyclopedic works of Abderhalden, Neuberg, and Oppenheimer. A very useful set of tables on the most varied subjects fills the last 100 pages of the book.

Second Report of the Government Bureau of Microbiology, dealing with work performed during the years 1910 and 1911. Sidney, N.S.W.; William Applegate Gullick, Government Printer, 1912.

This is a quarto volume of 244 pages and represents to good advantage the really enormous amount of work which is being done by the government in Sidney. The reports cover a large part of the field of bacteriology in its relations to man, animals and plants. The most interesting are articles on the biological characters of the *B. typhosus* and a comparative study of some strains of diphtheria and diphtheroid bacilli.

Stuttering and Lisping. By E. W. Scripture, Ph.D. (Leipzig), M.D. (Munich); Associate in Psychiatry, Columbia University; Director of the Research Laboratory of Neurology, Vanderbilt Clinic; Formerly Assistant Professor of Experimental Psychology, Yale University. Price, $1.50 net. New York: The Macmillan Company, 1912.

An extremely valuable text-book upon a sadly neglected theme is provided by this volume, which is from the pen of one who has given years of special study to the subject of speech defects. These he has approached along two different paths: that of psychology and that of practical medicine. The present volume is meant for both the teacher and the physician. The importance of its subject matter to the former may be realized if one is told that from one to two per cent. of school children are stutterers. The recognition of the cause of stuttering may be a difficult matter in some cases. Nevertheless, the therapy of nearly all cases is not so difficult that it is beyond the scope of the general practitioner. The latter will find this volume a clear and concise presentation of the subject. Dr. Scripture advances the view that stuttering is a disease marked by the following cardinal symptoms: (1) psychic hypertonicity and spasms of the muscles of speech; (2) anxiety (embarrassment or fear); (3) fixation of these conditions by habit, and (4) the existence of these symptoms only in the presence of other persons. Lisping is of quite a different nature. It includes several different speech disorders, whose characteristics lie essentially in defects of enunciation. The author distinguishes four different types: negligent lisping, organic lisping, neurotic lisping, and cluttering. The neurotic type is described here for the first time. The various graphic methods employed in the study of speech defects are described. Illustrated cases are given. The book closes with an elaborate series of exercises that will prove valuable in the treatment of stuttering and lisping.

A Treatise on Pellagra for the General Practitioner. By Edward Jenner Wood, S.B., M.D., Chairman of the Pellagra Commission, North Carolina Board of Health, etc. Price $4.00. New York and London: D. Appleton and Company, 1912.

Appearing in this country as a disease either entirely new or hitherto unrecognized, pellagra has excited a great deal of attention and investigation, the fruits of which have been exhaustively detailed in this book. The author pointedly disagrees with the older theory of the etiology of the disease that it is a grain intoxication, resulting from the ingestion of spoiled corn. Following Sambon he is inclined to believe that it is a parasitic, insect-borne disease, transmitted by a Simulium, a species of biting fly. He is confirmed in this belief by its analogy to other protozoal infections, its peculiar seasonal incidence and by the fact that wherever pellagra has been proved to have originated, there this fly has been found. He takes issue with those who make a diagnosis of "pellagra-sine-pellagra" that is pellagra without the characteristic eruption, on the ground that in the present state of our knowledge in this country, such a diagnosis is unsafe. In his experience the disease has never occurred without presenting, at some stage, the typical erythema. The book is written in a clear, convincing manner and the author is evidently thoroughly acquainted with his subject. It is attractively published and can be recommended to all interested in the subject.

Bacteria. By Dr. Max Schottelius. Second Edition. Translated by Staff-Surgeon Herbert Geoghegan, R.N. Henry Frowde, Oxford University Press. Price $3.50. London. 1912.

Written in popular language, with a style that is attractively easy and at times delightfully dramatic, this little book contains a semi-scientific discourse upon the general subject of bacteriology. The second edition has been somewhat enlarged and the chapters on Immunity and Protozoa have been practically rewritten. Almost wholly neglecting the technical details concerning individual bacteria, the author rather devotes his time to the hygienic aspect of the subject. The matter is presented in a form that is easily understood and the volume can be recommended as suitable for the instruction of the layman who seeks bacteriological information. The work is very attractively published.

Diseases of Children. A Practical Treatise on Diagnosis and Treatment for the Use of Students and Practitioners of Medicine. By Benjamin Knox Rachford, Professor of Diseases of Children, Ohio-Miami Medical College, Department of Medicine of the University of Cincinnati; Pediatrician to the Cincinnati Hospital, Good Samaritan Hospital and Jewish Hospital; Ex-President of the American Pediatric Society, and Member of the Association of American Physicians. New York and London: D. Appleton and Company, 1912.

In the large number of text books on the diseases of children there is noted a certain uniformity of method and presentation. A standard has been created, and apparently every new work on this subject aims to follow this more or less closely. The different works vary chiefly in the emphasis which they place upon pathology, diagnosis, and treatment. In the present volume the author devotes most attention to diagnosis and treatment. He has written a sound and practical exposition of modern pediatric science, based upon a wide practical experience. The work is up to date in its inclusion of the newer classifications and the newer methods of diagnosis and treatment. Thus the author reports favorable results from the use of casein milk, misnamed "albumin" milk, in the treatment of gastro-intestinal indigestion. It may be questioned whether the preparation of this, as described by the author, is strictly in accordance with the method advised by Finkelstein. The author boils the milk first instead of heating it to 100° Fahr. The book is well written, and the numerous illustrations help to elucidate the text. The typography, paper, and binding leave nothing to be desired. The volume may be recommended to the student and practitioner.

Travaux de Chirurgie Anatomo-Clinique. Par Henri Hartmann, Professeur à la Faculté de Médécine; Chirurgien de l'Hôpital Bichat; Membre de la Société de Chirurgie. Avec la collaboration de B. Cuneo et Paul Lecène, Professeurs agrégés, Chirurgiens des Hôpitaux; Kuss, Prosecteur à la Faculté; Delamare, V. Henry et Lebreton, anciens internes des hôpitaux. Quatrième série. Voies Urinaires, avec 132 figures. Price 15 francs. Paris: G. Steinheil, 1913.

This is the fourth volume of Hartmann's Clinical Surgery and is devoted to surgery of the prostate and urinary organs. Small sections on anatomy, operative technique, pathology, and case reports are accredited to his collaborators. In the first chapter is tabulated his operations and death rate. The list is interesting and instructive since it is the summing up of an experience of many years. The number of general surgical operations reported is 1787 with 113 deaths, 6.3 per cent. That presumably simple operation of internal urethrotomy was followed by death in 7 of 290 cases, 2.4 per cent. Following an analysis of these statistics, much space is given to prostatic surgery. He prefers the suprapubic route of enucleation and selected that approach in the majority of his later cases. The technique described differs in no material steps from that of Fuller and Guiteras. The results reported are less brilliant than those of American surgeons and the number of secondary operations reported causes one to think that the author's foresight was by no means so good as his hindsight. Moreover, the frequency of complications and sequelæ noted in his case reports do not compare favorably with those of our countrymen. This cannot be justly attributed to lack of operative skill but probably is due to the fact that several cases were operated twenty years ago when prostatic surgery was primitive, together with the tendency of his compatriots to present themselves for relief only when in deplorable condition. Insufficient discussion is accorded to postoperative treatment and only here and there does the reader glean a helpful hint. The chapters on renal surgery are clear and distinct. His description of surgical conditions of the kidney and the operative technique of their treatment is especially good. Likewise, the immediate and ultimate results are good. Several rare and unusual clinical conditions are described in detail; one of a vesical myoma completely filling the bladder and protruding through the ulcerated abdominal wall. Another is a gangrene of the bladder following a caustic injection into the viscus. The author's eminence, ability and rich experience gives such weight to his words that the interest of every genitourinary surgeon cannot fail to be awakened.

An Atlas of the Differential Diagnosis of the Diseases of the Nervous Systems: Analytical and Semeiological Neurological Charts. By Henry Hun, M.D., Professor of the Diseases of the Nervous System in the Albany Medical College. Price $4.00. Troy, N. Y.: The Southworth Company, 1913.

This is a new departure among books on the diagnosis of nervous diseases. We have had the symptoms of different diseases contrasted in parallel columns in tabular form, and collections of charts and diagrams of the nervous system. These have all been of assistance in diagnosis at times. But here is presented a key by which even the student and the general practitioner may work out his own neurological salvation (if he has some intelligent knowledge of the subject), in apparently a comparatively easy manner. Diseases of the nervous system are divided in the book into groups, the members of which bear a relationship to one another. This relationship is definite and constantly crops out in the use of the charts. The same disease appears in many charts, and cross references by numbers are placed in the text to facilitate reference. On one side of each chart is an important symptom; on the other a list of all the diseases in which this symptom occurs. Between the two a series of tests are inserted which constitutes the examination of the patient. All the important diagnostic symptoms of nervous diseases are thus treated. The usual methods employed by clinical teachers of neurology are utilized. The clinical physiology and pathology of nervous diseases are given with the differential diagnosis. Technical terms are defined. The index is very complete and embraces nearly every clinical neurological term. The book is divided into three parts, Semeiology, Diagnosis, and Localization. There are twenty-two charts, and thirty-three figures. Electrical examination and examination of the cerebrospinal fluid are included in part one. The book is of special service in diagnosis in organic neurology.

The Surgical Diseases of Children. By William Francis Campbell, A.B., M.D., Professor of Anatomy, Long Island College Hospital; Surgeon in Chief, Trinity Hospital; Attending Surgeon, Methodist Episcopal Hospital; Consulting Surgeon, Coney Island, Swedish, and Jamaica Hospitals; and Le Grand Kerr, M.D., Attending Pediatrist to the Methodist Episcopal, Williamsburgh, Bushwick, and Swedish Hospitals; Consulting Pediatrist to the Industrial Home for Children and the Rockaway Beach Hospital. New York and London: D. Appleton & Company, 1912.

This is a handsome volume of 693 pages representing the combined authorship of the surgeon and pediatrist. Judging by the number of volumes upon the surgery of childhood that have appeared during the past few years, there is apparently a demand for a book of this kind. There can be no question that the pediatrist should have a voice in the management of children that come under the care of the surgeon. This is particularly necessary in such cases as empyema and surgical tuberculosis, in which the postoperative dietetic and hygienic care is an important factor in the final outcome. At the same time the surgeon can be of distinct service to the pediatrist not only in providing the technical skill in the presence of cases requiring operative treatment, but also in suggesting the proper line of non-operative treatment in cases that are usually classified as surgical. It must also be borne in mind that the work of the orthopedic surgeon is almost entirely among children, and most of these are first brought to the general practitioner or children's specialist. Both of the latter should be well informed, not only in the latest methods of surgical diagnosis but also in the methods of surgical treatment, so that they can recognize a surgical case when one presents itself, and can call in the proper surgical assistance when this is indicated. In short, the general practitioner, the pediatrist, and the surgeon should be well informed not only in their own respective field of work but also in that of the others. The value of a volume of this kind depends upon the degree to which it recognizes the places at which the three domains overlap one another. Judged by this criterion the present volume admirably answers its purpose. In discussing the subject of appendicitis in children the essentially surgical character of this disorder is emphasized, and the treatment is considered under the two heads, preoperative and operative. It is to be regretted that this volume touches but lightly or not at all on certain subjects that ought to be discussed in detail. Thus only a half page is devoted to the subject of hypertrophied tonsils, no mention being made of the methods and technique of their removal, of the relative merits of tonsillectomy and tonsillotomy, of the contraindications to either operation, of the local and systemic complications that frequently follow operation, and of the preoperative and postoperative treatment of the patient. The same scant attention is paid to the subject of adenoids, which is dismissed in a brief discussion of one page. Only one-third of a page is devoted to the subject of the mechanical and operative treatment of the deformities of infantile paralysis, a subject that has acquired considerable importance within recent years. The chapter on lumbar puncture is well written and well illustrated, but the authors ignore the most modern method of introducing antitoxic sera into the subarachnoid space, namely, by means of allowing the sera to flow in by gravity rather than by injecting them with a syringe. No mention is made of the manometric measurement of the pressure of the cerebrospinal fluid, nor of the therapeutic possibilities of lumbar puncture in the case of uremia, hydrocephalus, etc. Many sections of this work, as for instance those on the plastic surgery of the palate, and of such congenital deformities as hypospadias, etc., are well written. Would it be amiss to ask why so many of the excellent illustrations are borrowed from other authors? Surely it is possible to obtain a good photograph of a case of hydrocephalus without resorting to this convenient expedient. Of course credit is given in every instance to the source of the illustration, but it is irritating to one who is fortunate enough to be within easy access to a large number of textbooks to come across the same illustrations in two or more works. It is questionable whether most of the cuts that adorn a medical work are of real practical value to the reader. In spite of its shortcomings this work cannot fail to be of service to the general practitioner and surgeon. It bears the imprint of originality and good taste and reflects views that are generally sound and practical.

The Labyrinth. An Aid to the Study of Inflammations of the Internal Ear. By Alfred Braun, M.D. (New York) and Isidore Friesner, M.D. (New York). With Fifty Figures in the Text and Thirty-four Halftones on Thirty-two Plates. Price $4.00 net. New York: Rebman Company, 1913.

The bibliography of the labyrinth comprises works and articles that have appeared mostly within the past decade. It is only, however, the past three or four years that have witnessed the epoch-making contributions of Alexander, Barany, Bartels, Brünings, Neumann, and Ruttin. The study of the labyrinth represents one of the most fascinating subjects in medical science, a subject teeming with problems in anatomy, histology, physiology, otology and neurology. A great deal has been added to the knowledge of this obscure recess of the cranium, but it is still upon the frontier, awaiting further discoveries and developments. It is a pleasure therefore to welcome the present volume by Braun and Friesner, which is a complete monograph, including all that is known at the present regarding the labyrinth and its diseases. The book is divided into five chapters which deal with the subject as follows: Anatomy, physiology, methods of examination, pathology, symptoms of labyrinthitis, and treatment of labyrinthitis. The authors describe the anatomy and physiology of the labyrinth in a masterly manner. The illustrations here, as in other parts of the work, are superb in their artistic execution and in the clearness with which they supplement the text. The methods of examination are described in great detail with the aid of many diagrams. This is a section of the work that should appeal to the neurologist. There are discussed the caloric test, which has attained its greatest elaboration at the hands of Barany; the galvanic test; the fistula test, and reaction movements. In discussing the pathology of the internal ear, the authors adopt the practical classification of labyrinthitis into the circumscribed and the diffuse forms. It is noted that the most common of the acute middle-ear diseases which cause labyrinthitis is that due to scarlatina, while of the chronic middle-ear conditions cholesteatoma is responsible for most of the labyrinthine affections. The chapters on the symptoms and treatment of labyrinthitis are exceptionally well written. The authors lay down as a broad, general rule that in no case of circumscribed labyrinthitis should the internal ear be operated upon. The various operations, including Hinsberg's and Richards' operations, the Jansen operation, and the Jansen-Neumann operation are described in great detail with the aid of many excellent halftone illustrations. It is stated that the most conservative of the operations is that of Hinsberg. In concluding what can be regarded only as a fragmentary review of this important subject one may state without reserve that the authors have acquitted their task well, and have made a substantial contribution to medical literature.

# Society Reports.

## MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

*Stated Meeting, Held March 17, 1913.*

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

**The Clinical Evidence of Lymphuria.**—Dr. HEINRICH STERN presented this paper, which was read by Dr. A. Ernest Gallant. (See page 967.)

**Colon Bacillus Infection of the Kidney.**—Dr. WINFIELD AYRES read this paper. (See page 968.)

**Hydronephrosis.**—Dr. A. ERNEST GALLANT read this paper. He explained that by hydronephrosis, or what more properly was termed uronephrosis, was meant urinary retention within the renal pelvis, or pelvis and ureter, caused by something which had obstructed the outflow of urine into the bladder. The origin of the obstruction might be congenital or acquired. The latter form of obstruction, by far the more frequent, might be due to such causes as strictures, neoplasms, adhesions, bands, blood, etc., but was much more commonly caused by kinks, calculi, or concretions. The obstruction might be located at any point where the lumen of the tract could be bent, narrowed, or plugged between the renal calices and the ureterovesical junction. *Ren mobile,* or displaced kidney, was by far the most frequent source of urinary obstruction, and was second only to calculus in the production of pathological conditions in the kidney. The range of the mobility varied very greatly, though the severity of the resulting suffering bore no relation to the degree of mobility or the distance to which the kidney had prolapsed. A case well illustrating what a prolapsed kidney might lead to was that of a female patient, 59 years old, whom he first saw on February 19. For two or three weeks she had been suffering from intermittent attacks of nausea, vomiting, and intense pain (Dietl's crises). The pain, starting just under the right breast, at times extended down to the hip and radiated through to the back. At first sitting up seemed to afford some relief, but more recently had aggravated the pain, and she could lie only on her right side. She had lost some 30 pounds in weight, had much distress after eating, and was constipated. At first her skin was slightly jaundiced; the conjunctiva decidedly so. Physical examination showed the abdominal wall to be very lax; epigastrium sunken; hypogastrium markedly prominent; lower border (greater curvature) of the stomach nearly down to the symphysis; lesser curvature three inches below the ensiform. The right kidney, which was three times the normal size, and very sensitive, had prolapsed to such an extent that the lower pole pointed forward and lay just above the umbilicus, while the upper pole pointed backward and could be palpated in the loin; representing the so-called "pendulum" prolapse, in which, on account of its large size, the kidney could be but partially replaced. The point of greatest tenderness was over the situation of the gall bladder, which was not palpable. The liver was not enlarged or prolapsed. Diagnosis: Hypertrophied, displaced kidney, dragging on the common bile duct and ureter, and causing jaundice and uronephrosis. During the following two weeks, although the patient reclined in the elevated posture, the attacks recurred with increasing frequency. The report of the urinalysis, by Dr. Heitzmann, in conjunction with the clinical history, seemed to point most strongly to ureteral obstruction, probably associated with calculus. On March 6 the kidney was exposed through a lumbar incision and, after being freed from the very dense adhesions present, was delivered. The pelvis was opened and the ureter probed into the bladder without finding any stone, though there had evidently been kinking at the pelvoureteral junction which was released when the kidney was freed. On account of the condition of the kidney and the laceration of the pelvis, it was decided to remove the organ. After the removal of the kidney, but before suturing, while the fatty capsule was being palpated, it was found that the gall bladder was filled with stones, and after the lumbar dressing had been applied the patient was turned on her back and a vertical incision made at the outer side of the right rectus. The under surface of the liver and gall bladder seemed to be filled up with masses of enlarged glands, and in the removal of one of these glands for pathological examination the gall bladder was opened, allowing the escape of stones. It was rapidly sutured to the skin, and while this was being done the stones continued to come out. The kidney removed was presented. Among 411 cases of movable kidney Dr. Gallant had recognized obstructive hydronephrosis symptomatically in 126, or 30+ per cent. In one case there was sigmoid distortion of the ureter at its pelvic junction; in one, stricture of the pelvic portion of the ureter four years after hysterectomy, and in two cases a descending ureteral calculus was the source of typical ureteral colic; but such conditions were far outnumbered by the remittent attacks of hydronephrosis caused by movable kidney and which were relieved by loosening the clothing and lying down. By this means the kinking was corrected. Hence the pain, nausea, and vomiting (Dietl's crises) ceased, the swelling in the lumbar region subsided, and the woman passed large quantities of urine. Then there would be freedom from symptoms until the kidney again dropped down low enough to cause ureteral kinking and urinary obstruction. During twenty years' observation of this class of cases it had always been his practice to place the patient in bed with the foot of the bed elevated some 10 or 12 inches, and by this means had secured prompt relief, provided that the kidney could be wholly or in part replaced. Whenever this postural treatment had failed he had found some complication present, such as gall stones, stricture, calculi, blood, etc. By thus elevating the pelvis we (1) relieved the symptoms, (2) established the differential diagnosis, and (3) ascertained the correct treatment required, whether medicinal, mechanical, or operative. As to the prognosis, temporary obstruction of the ureter might cause but little if any damage to the kidney tissues, but frequently repeated intermittent obstruction gave rise to dilatation and distortion of the ureter, and renal pelvis, resulting in an interstitial nephritis. The research work of Edwin Beer and others had shown that continuous obstruction beyond 21 days caused irreparable damage to the kidney. The treatment, advised by the speaker consisted in (1) postural, diagnostic replacement, (2) mechanical support by a corset constructed on proper principles, in order to keep in position all the prolapsed organs; (3) appropriate operative measures for the removal of pelvic disease when present; (4) such rest cure methods and medicinal means as will restore the normal health balance. In cases of replaceable prolapsed kidney nothing was to be gained by suturing the kidney (nephropexy) because, as had been pointed out by Glenard, we very seldom met with movable kidney causing obstruction in which there was not an associated dilatation or prolapse of the stomach and colon; a condition far more detrimental to health, though the symptoms were not so acute. The paper was concluded with the report of an illustrative case in which there was a prolapsed right kidney, with remittent hydronephrosis, and ptosis and dilatation of the stomach. For these conditions the patient had worn the special corset advised by Dr. Gallant, and he said that she had learned by painful experience that the attacks would recur if she were careless in putting the corset on or did not keep it in good repair.

**Bilateral Nephrolithiasis.**—Dr. OLIVER C. SMITH of Hartford, Conn., in this paper, said that while the operation of vesical lithotomy was among the earliest successful surgical procedures, operations for calculi of the kidney and ureter were of comparatively recent date. Before the use of the cystoscope, ureteral catheterization, urinary separation, and skiagraphy, operations upon the kidney were undertakings of great risk, but now the cooperative efforts of those working in different lines of scientific investigation and diagnostic technique had placed the surgery of the renal tract upon a scientific basis, and reduced the hazards to a minimum. The frequency of simultaneous occurrence of stones in both kidneys had been variously estimated at from 50 per cent. by Lagueu, to a much smaller proportion, but the possibility of this condition should always be borne in mind by the surgeon when planning operation for renal calculus. The importance of skiagraphing both kidneys and the entire renal tract, and of determining the patency of each ureter and the functional activity of each kidney, was paramount. Although authorities differed as to the possibility of securing skiagraphs of certain types of renal calculi (notably those composed of uric acid and cystine), the skiagraph taken and interpreted by an expert was the most accurate factor in the present-day diagnosis of urinary calculi. In order to determine the comparative density and resulting radiographic shadow, Dr. Smith's associate, Dr. Arthur C. Heublein, had made radiographs of a number of renal calculi of various composition. (At the conclusion of the paper lantern slides of these were exhibited by Dr. Heublein.) From these, the speaker said, it would be seen that even the uric acid and cystine calculi furnished definite shadows, and while it was true that these radiographs were made of the stones after they had been removed, in a favorable subject, and with a modern apparatus, it was possible in a certain percenatge of cases to secure shadows of even these kinds of deposits. In our zeal to apply the

latest and most satisfying aids to diagnosis, we might at times be inclined to neglect the older but still valuable methods of rigid physical examination and painstaking, accurate microscopical search for urinary sediment. When it was considered that primary renal calculi were the result of inherent conditions, rendering both kidneys equally liable, it seemed strange, and was indeed most fortunate, that bilateral calculi were so comparatively infrequent. The dangers of bilateral were more than double those of unilateral calculi. Structural damage and infection might go on simultaneously in both kidneys, finally rendering operation upon either or both far more serious than that for a unilateral affection. Anuria, a condition supposed to be due to a reflex inhibiting excretion, was, unfortunately, prone to follow these operations. In bilateral renal calculi two problems confronted us: (1) Shall we operate at all, and, if so, on one or both kidneys, in the absence of moderate or urgent symptoms? (2) Shall we operate on both kidneys at one time? The greater number of operations had been performed on one kidney, the other being attacked later or not at all, in accordance with the developments following the first operation. While Kümmel, Watson, and others, advocated operating on both kidneys at one time, a frequent contraindication was the serious condition present; the added time, increased amount of anesthetic, and additional shock and hemorrhage had to be reckoned with. In two of his own cases the primary operations were done in severe emergency; in one instance the operation upon the second kidney was performed later, when the patient was in better condition. These cases improved markedly between the first and second operation. In the first, the second operation was called for some weeks later by an acute infection occurring in the unoperated kidney, and in the second an elective operation was done for a large stone, with infection, some weeks following nephrostomy and nephrolithotomy for pyonephrosis and nephrolithiasis. Dr. Smith then gave the details of the following cases: *Case I.*—Male, aged 24. Bilateral nephrolithiasis; pyelitis; nephrolithotomy. On June 29 an oxalate of lime stone, measuring 7 x 8 x 5 cm., and weighing 33 gm., was removed from the pelvis of the left kidney through the cortical incision; after which two stones of marble size and a number of sand-like stones were removed. At the end of six weeks the patient was apparently well, and returned to work. On September 8 he was seized with pain in the region of the right kidney, accompanied by chill, and followed by high temperature. The urine became scanty, and contained a quantity of pus. Five days later, through lumbar incision, the right kidney, which was much swollen, was exposed, and incised over the cortex, and 15 to 20 c.c. of pus liberated from the pelvis. Three stones were removed (two of marble size and one the size of a kernel of corn), and the patient made a good recovery. *Case II.*—Male, aged 45. Bilateral nephrolithiasis; pyelonephritis; nephrostomy. First operation on September 15; second operation December 5. Four weeks after the latter, patient left hospital and resumed work. *Case III.*—Female, aged 35. Calculus anuria following nephrectomy for calculus pyonephrosis; nephrolithiasis; calculus impacted in ureter; ureterolithotomy; recovery. *Case IV.*—Simulating bilateral renal or ureteral calculi. This patient was a college student who when 15 years old had an attack of appendicitis, for which the appendix was removed. Aside from urinary retention, requiring catheterization on two occasions, his recovery was uneventful. Three months later he was seized with severe pain on the left side of the abdomen, radiating from the kidney down the ureter to the testicle. Frequent hypodermics of morphine, supplemented with ether at the acme of the pains, were required for three days, when the attack suddenly ceased. For three years afterward similar attacks occurred at irregular intervals and at the most inopportune times. The pain was so agonizing that doctor and nurse were called in and remained with him practically throughout the paroxysms, which lasted from one to four days. He would apparently follow the progress of something down the ureter, speaking of a slipping sensation, and finally, after a prolonged exacerbation, would say "There, it has passed." The attack would then end, though it was quite likely to be resumed on the other side within a few hours. On one occasion a number of blood corpuscles were discovered in the urine, but never any crystals. The reaction of the urine was acid, the specific gravity usually high at the beginning of the attack, and the color darker than normal amber. It was never the pale color of hysteria. On two occasions ureteral catheters were passed to the pelves of the kidneys and twice a series of radiographs were made, with negative results. He consulted distinguished specialists in New York and Boston, each one in turn at first believing that the passage of bilateral calculi was the undoubted diagnosis, but each finally concluding that the condition must be a neurosis. During the three years when the attacks were the most frequent and severe the patient was attending a high school, and about the time of his graduation they became less frequent. He then entered Yale and passed through his four years there with but three attacks. In the two years which had elapsed since then he had only two attacks, though he still lived in fear of their repetition. In other respects his health was good. In Dr. Smith's series of seventeen operations for renal and ureteral calculi, 18 per cent. had been bilateral. In all the latter cases pain had at some time been present and there had been hematuria and pyuria in all. Renal epithelium and crystals had been less constant in the urine, while enlargement of the kidney had been detected only at the time of partial or complete obstruction in the ureter or renal pelvis. In the four operations in cases I and II the kidney had been incised, rather than the pelvis. The presence of pyonephrosis, as well as pyelitis, demanded this incision in two instances, and the necessity of exploring and draining the kidney, as well as the removal of stones from the calices, made it the operation of choice. He believed that it was often desirable to incise the pelvis when the radiograph showed stone in the pelvis only, and the kidney was not otherwise diseased. The anesthesia employed had been gas-oxygen-ether, either in sequence or the three merged to meet the immediate conditions. Drainage of the kidney was resorted to in all cases. If anuria threatened, the drains were temporarily removed, hot packs applied to the whole body, and hot fomentations over the kidneys, and diuretin given hypodermically. Among the speaker's conclusions were the following: It was probably better to operate on both kidneys at one time if the patient's condition warranted. This had to be determined during the course of the operation. The more seriously impaired kidney, or the one causing most severe and recent symptoms, should be operated upon first. Lithotomy should only follow thorough and exhaustive efforts to establish a correct diagnosis of the condition of each kidney. Operations of this kind should be largely confined to hospitals where all the modern aids to diagnosis were at command. Such methods as radiography, cystoscopy, ureteral catheterization, renal function tests, and chemical and microscopic examinations of urine called for generous cooperation on the part of a number of competent and well-equipped men. Without such scientific preliminary work these operations were likely to result in disappointment and disaster, while with it the operative mortality was encouragingly low and the ultimate results, measured in life and function, were in the great majority of cases most satisfactory.

Dr. Louis Heitzmann said he doubted the propriety of discussing Dr. Stern's paper, which was purely a theoretical one, in Dr. Stern's absence. The claim in it was more a theory of his than a proven fact, and under the circumstances, therefore, he preferred to say nothing more about it. The subject of Dr. Ayres' paper was, unfortunately, one about which too little was known. Yet the cases of colon bacillus infection of the kidney were not rare. Dr. Ayers was of the opinion that all cases of this character were of hematogenous origin; but while he himself was sure that in the great majority of instances this was (*a*) Right optic tract, left homonymous hemianopsia for the case, he believed that we did have some cases of ascending infection. It was not always easy to prove that a case was of the ascending variety; yet when the bladder symptoms preceded those of the kidney, and when inflammation in the bladder had lasted for some time before there was any trouble in the kidney, as could be determined by microscopical urine examination, some evidence was afforded of such an ascending infection. This did not necessarily start in the bladder, but might arise in the vagina or elsewhere. Dr. Smith's paper was certainly one of great interest. If all skiagraphs of the kidneys were as plain as those which had been shown this evening, there would never be any difficulty in diagnosing renal calculi. Unfortunately, however, the *x*-ray in many instances proved entirely unreliable. There might be no shadow at all, or if there was a shadow, it might be due to other causes. It was in cases of this kind that we had to resort to other means, and here, he believed, the microscope was of more value than anything else. Yet in these cases of Dr. Smith's, even if the skiagraphs had not been so plain, the indications were such as to give rise to the suspicion of the presence of calculi. When there were hematuria and pyuria, and we could exclude other causes, there was strong ground for supposing that calculi were present; wherever a ureteral catheterization could be made as in hospital cases this would aid in the diagnosis. The

functional tests, in his opinion, were of little value, and the phenolsulphonaphthalein test was decidedly unreliable. The examination of the specimen of urine sent him by Dr. Gallant indicated the presence of a mild interstitial nephritis, a condition proven by the kidney which the doctor showed. While by many it was not admitted, it was easy to diagnose the existence of such a nephritis by microscopical urinalysis, without the presence of casts in the urine.

Dr. Robert T. Morris said it made very little difference whether the colon bacillus infection came by way of the blood, the lymphatics, or by ascending infection. Usually, however, it originated from the blood. The thing to do was to relieve the patient, since the presence of the wandering colon bacillus in the body usually meant sepsis. Still, it was a fact that in many instances its presence in the kidney was a matter of little or no moment. Fortunately, we had at our command a good resource for this infection, provided it was used in the right way. The correct method of employing urotropin depended on one or two little refinements, and one of these was to give it in conjunction with sodium benzoate. We had a still better remedy in the new methylene citrate. In regard to kidney stone, there were some instances in which the calculi were nearly pure uric acid, giving no shadow. Now, whether the *x*-ray showed the presence of stone or not, when we found blood and pus coming from a kidney, there was something there which called for operation. If not stone, it might be tuberculosis, or even fatty degeneration, as in one case he had seen. As a rule, patients operated on made a good recovery, but occasionally even what seemed to be the most favorable cases terminated fatally. This it had been his melancholy experience to see only last week, when a lady who presented every appearance of perfect condition died suddenly from embolism three hours after the operation.

Dr. Joseph Friedman said that one of the reasons why renal calculus was not more often diagnosed by means of the *x*-ray was because of faulty technique. The intestinal tract of the patient should first be thoroughly cleared out. It was his practice to give a full dose of castor oil in the evening, and repeat it the next day. The patient should be placed on a liquid diet, though milk should be excluded, as this substance caused a shadow to appear in the colon. Then, about two hours before the radiograph was taken an enema should be administered. A good picture ought to give the outline of the kidney, but often this was not obtained. It was always best to confirm the diagnosis of kidney stone, and therefore a second radiograph should be taken three or four days later. If the shadows at first observed were then in the same position, we could feel that the diagnosis was assured.

Dr. Ayres, in closing, said that Dr. Smith had touched on phenolsulphonephthalein, and though he considered it the best test yet devised, there was much to be desired. He gave the history of two cases. The first was that of a man 79 years old. Absolute retention; phenol. test (given subcutaneously) was 7 per cent. the first hour and 8 per cent the second. It was decided to drain by permanent catheter until the kidneys were acting better, but, on account of hemorrhage developing, the bladder was opened and the prostate removed. Though the patient suffered somewhat from uremia, he finally pulled through and made a perfect recovery. In the second case, also prostatic hypertrophy, the phenolsulphonephthalein was given intravenously. 42 per cent. was returned in the first half-hour, and 27 per cent. in the second. The patient died from uremia ten days after operation. Dr. Ayres had had two cases in which the *x*-ray did not show the presence of renal calculus, but in which he was able to detect this by means of the wax-tipped catheter. In the diagnosis of this condition the laboratory aids should always confirm the clinical findings. He could not agree with Dr. Morris that sodium benzoate aided the action of urotropin, though he considered it a valuable urinary antiseptic. Cases in which it seemed to have the action of a help, he said, were probably those in which no formaldehyde was being thrown off and the antiseptic action was entirely due to the benzoate. He admitted that he had neglected to mention in his paper the possibility of ascending infection, but he considered it an extremely rare occurrence.

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**Public Exhibition of Hypnotism Forbidden.**—The Italian Government has forbidden demonstrations of hypnotism and all kindred arts in theaters. This action has been taken in consequence of representations by the medical profession as to the deleterious effects of such exhibitions on weak-minded people.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held April 17, 1913.*

The President, Dr. William M. Polk, in the Chair.

This meeting was arranged by the College of Physicians and Surgeons.

**Pneumonia from the Laboratory Point of View.**—Dr. Augustus B. Wadsworth read this paper. He said that the physician at the bedside of a pneumonia patient needed, first, broad conceptions embracing alike possibilities and probabilities of the infectious processes to which he was to minister, conceptions based on the results of accurate experimental study. He then needed sufficient clinical knowledge to recognize the significance, diagnostic and prognostic, of the various signs and manifestations of the disease, in order to interpret the individual symptom complex. The laboratory and the bedside, each in its sphere, the one as much as the other, were educationally essential to the attainment of modern standards in the conduct of pneumonia infection. The story of experimental pneumonia was a long one, but was interesting and most instructive. The study of pneumonia offered the widest scope, the greatest promise and the most insurmountable difficulties, and had proven as elusive as it had been alluring. The sudden onset, the more or less unique course, the sharp and peculiar termination by crisis, all suggested much to the student of immunity and serum therapy. The great menace of the disease to the public health and the futility of preventive measures and public sanitation served to stimulate every effort to solve the subtle problems of both cure and prevention. Seemingly barren of results, the results had nevertheless added much to their knowledge of the conditions, factors, and processes underlying and determining the development and course of the disease, and thus possessed a value none the less definite and practical if lacking in the spectacular. If the significance of laboratory study was to be fully appreciated pneumonia must be considered broadly as a conservative reaction of the animal organism to infection of the lung. Lobar pneumonia was a distinct disease; the lesion of the lung was characteristic as was also the symptom complex. In man the lobar lesion was a specific infection due to the pneumococcus, but in animals it had been incited experimentally by many pathogenic bacteria, by non-pathogenic species, and by chemical incitants. Similarly, the symptom complex, strikingly characteristic as it was of lobar pneumonia in man, was occasionally seen in erysipelas, and in the rabbit a pneumococcus bacteremia without lung infection often followed this course even to recovery by crisis. Lobar pneumonia, anatomically and symptomatically considered, was thus a specific disease incited by the pneumococcus only as it developed in man. But even in man certain conditions of animal susceptibility on the one hand and bacterial virulence on the other hand underlay the development of the disease. These conditions were now recognized through the study of experimental pneumonia. In very susceptible animals pneumonia was not incited by tracheal injection of the pneumococcus; but in resistant animals, as in the experiments of Gamaleia, of Tschistovitch, and of Meltzer on the dog, typical lesions were obtained. In his experiments characteristic lesions developed in the susceptible animal only when it had been practically immunized. A relative insusceptibility, possibly some degree of immunity, was therefore essential to the development of lobar pneumonia. This immunity man might possess normally, or since the pneumococcus was frequently associated with inflammatory processes in the upper respiratory tract he might acquire it during recovery from them. Bacterial virulence might be also just as important as animal susceptibility in determining the development of pneumonia. Washburn and Eyre, Longcope and Fox, and recently Dochez had studied the virulence of different strains of pneumococci. But when the virulence was raised experimentally in one animal it was lower for other species. It was therefore impossible to determine the virulence of the pneumococcus for man by testing it in laboratory animals. At the bedside there was ample evidence of the toxicity of the pneumococcus but in the laboratory no toxin had been found. Although the parasitism and the toxicity of the pneumococcus in infection might be recognized separately, these biological activities were closely related one to the other. They had been discussd at length because they were fundamental and essential if one was rightly to conceive the disease processes in all their relations. The growth of pneumococci under artificial cultivation was inhibited at a comparatively low temperature. Of 26

strains which he had studied none grew above 41.2 C and many ceased growing above 40.5 C. In the pneumonia patient the temperature of the circulating blood was one degree centigrade higher than that of the mucous membranes and the temperature of the liver and other organs higher than that of the blood. It was not difficult to conceive of pneumococcus growth in the tissues of the pneumonia patient being inhibited. However an elevation of body temperature alone might not be conservative but injurious, as Dr. Wadsworth had found by experimental study. The protective mechanism should be studied as it occurred spontaneously and as it was induced under experimental conditions, not in one animal but in several. Recovery could not be considered complete until the infectious agents of the disease were destroyed. This must take place either inside the body cells through phagocytosis, or outside the body cells by bacteriolysis. In different animals these processes varied greatly. As in diphtheria and in tetanus so also in pneumonia the neutralization of the bacterial poison was the dominant process determining recovery. The destruction of the bacteria was secondary whether it took place by lysis or by phagocytosis, whether it took place in a local wound in the surface of the body or in the issues throughout the body. Fundamentally it mattered little whether the bacterial poison was found only in the body tissues and could be easily neutralized there, or whether it was also found outside the body in culture and could be neutralized in the test tube.

Dr. Rufus Cole said that he was much interested in the conception of the pneumonia process, as described by Dr. Wadsworth. All those who had had much to do with pneumonia as seen at the bedside had become convinced that the main process was essentially a general intoxication. The difficulty had been to prove this. In a way, intoxication must be associated with all infections. The idea of the mechanical action of bacteria was long ago given up. The action of the bacteria on the body must be due directly to some chemical substance formed by the action of the bacteria, or to some peculiar physical changes brought about by the bacteria, of which at the present time they could have but little conception. Of the nature of these intoxicating substances in pneumonia, at present they know but little. Such toxins, produced by the bacteria, might be non-specific or specific. They knew that pneumococci produced acid, for instance, in culture media, and it was conceivable that the intoxication in pneumonia was closely associated with the production of acid in the body by pneumococci. Last year Dr. Peabody did quite extensive work to determine whether or not acidosis was present in pneumonia. While there was some evidence that there was an increased acid production in the body in pneumonia, yet there was no evidence that this played the main rôle. It had been found that the bodies of pneumococci, when allowed to undergo autolysis, were toxic, and the speaker said that he had also shown that the bodies of pneumococci, when dissolved in bile, were toxic. This toxic bile extract, when injected into animals, gave rise to the production of antitoxins. This was evidence that the substance was a true toxin. Of course, it was impossible to say at present whether the toxin did or did not play an important rôle in the symptoms as seen in patients. This toxin was quite different from the toxin described by Wadsworth, since it was held back by the Berkefeld filter, while the toxic substance described by Dr. Wadsworth was obtained by filtering the culture through such a filter. Dr. Wadsworth had not shown this to be a toxin when injected into animals and so, of course, had been unable to demonstrate directly the production of an antitoxin, but his experiment and evidence to show indirectly that the immune serum produced by the injection of this substance was antitoxic, seemed to be extremely clear and important. The fact that by such a serum the symptoms might be inhibited, while the bacteria still continued to grow in the body, spoke strongly for the antitoxic action of the serum. This observation furnished evidence against the point of view which might otherwise be suggested that the serum so obtained was an antibacterial serum, produced by the injection of free receptors contained in the filtrate, just as had been done in the production of immune sera to *B. choleræ* and *B. typhosis* and also to the pneumococcus. Dr. Wadsworth had approached the problem of pneumonia in a fundamental manner and had already obtained important results, and the speaker felt sure that his work continued along these lines would add much to our knowledge of this most important disease.

Dr. W. T. Longcope said that Dr. Wadsworth's paper emphasized two points of great interest. One was the susceptibility of the host to infection, the other the virulence of the infecting agent. Dr. Wadsworth, in the first part of his paper, had made some reference to the possibility that the onset of the infection of lobar pneumonia might be dependent upon a sensitization of the host to the pneumococcus. This conception has been brought forward by Friedberger and Vaughan, and Friedberger, particularly, had applied this idea to the rapid invasion of the lung by the pneumococcus in lobar pneumonia. Dr. Wadsworth's experiments concerning the method of producing a certain type of pneumococcus infection in rabbits, simulating lobar pneumonia, emphasized the point that the host must in some way be prepared before an infection with this particular course could take place. Partial sensitization of which he spoke might indeed represent in a way the sensitization of the animal, just as one by one or two injections of horse serum or egg albumin, rendered a rabbit susceptible to intoxication by that protein. Recent experiments by Austrian seem to point quite definitely to the fact that animals might be made susceptible to infection by the tubercle bacillus when they were given a preliminary injection of the protein from the tubercle bacillus. If, now, the onset of pneumonia were dependent upon the sensitization of the tissues of the respiratory tract to pneumococcus, one would expect that preceding an attack of pneumonia there would be a history of some respiratory infection. As a matter of fact, Dr. Meltzer, among others, called attention some time ago to the fact that such slight respiratory infection did very frequently precede the onset of lobar pneumonia, and that the disease did not develop suddenly. During the last few years this point had interested him very much, Dr. Longcope said, and he had made an effort to discover in all cases of lobar pneumonia that had come under his observation whether or not there was a pre-existing respiratory infection, and on careful questioning it could be determined that the vast majority of patients had had a "cold in the head," some respiratory infection, which was frequently termed grip or sore throat, within one, two, or three weeks before the onset of the lobar pneumonia. The cause of these infections could naturally not be determined, but it is interesting to observe that such mild infections were present. Certainly in combating such serious diseases as pneumonia lines of thought such as these suggested by Dr. Wadsworth were valuable in stimulating work which had as its object the prevention or the cure of the disease.

**An Unusual Cardiac Condition Simulating the Stokes-Adams Syndrome.**—Dr. Horatio B. Williams and Dr. Henry James reported this case. Dr. Williams said the patient had been under observation since July, 1912. He presented himself on account of increasing dizziness with attacks of faintness. His previous history was negative, except that he had been a very hard worker and had formerly used whiskey to excess. There was no history of syphilis and Wassermann reaction was negative. His pulse was uniformly slow, about 40 beats per minute. The electrocardiograms showed an entire absence of the wave P which corresponded to auricular activity in its usual position. There was no suggestion of auricular fibrillation. An inverted wave was constantly found one-fifth of a second after the beginning of ventricular action. The auricles had been found to contract co-ordinately with each beat of the ventricles by direct observation with *x*-rays and fluoroscope. It was believed that the beat of the heart originated in the ventricles and was transmitted backward to the auricles by way of the His bundle. The condition had been imitated in dogs by destruction of the region of the sinus node in the right auricle. Lately several observations had been made of this patient when his pulse ran about 60 beats per minute and at such times the electrocardiograms were of the usual type, the auricles beating before the ventricles. There was still a tendency to revert to the reversed mechanism.

Dr. T. Stuart Hart said that the case just reported illustrated very beautifully the object and value of the new graphic methods of studying the heart. For a long time, on account of the methods at their disposal, physicians had paid much attention to the endocardium, the condition of the valves and the pericardium. They wanted to know more about the myocardium, but they knew comparatively little in regard to it because the means of studying it were very limited. By these new methods, the polygram and the electrocardiogram, they were put in a position where they could observe in detail the functional workings of the myocardium. Working with these methods, Dr. Williams had been able to point out certain definite defects of conduction, irritability, and changes in the pace-maker in the case he had presented. Such

observations were not merely of academic interest, they were also of immediate help to the clinician. The study of these disorders of the fundamental properties of heart muscle were of great service in making a correct diagnosis, in formulating the prognosis, and in directing treatment. As evidence of this one need only to recall the aid which these methods had afforded in heart block, extrasystoles auricular fibrillation, and in directing the proper use of digitalis. Dr. Williams had described an entirely new clinical entity and had offered valuable experimental evidence to support his interpretation of this case. Hereafter, since Dr. Williams had shown the way, any of us ought to be able to make this diagnosis. Dr. Hart referred to a case of his own in which, like Dr. Williams' case, there had been a reversed rhythm; this, however, had been a case of paroxysmal tachycardia of ventricular origin. During the paroxysm the auricle responded to the ventricle, but only to every alternate beat, the other impulses starting in the ventricle being blocked. The attacks of unconsciousness in Dr. Williams' case were probably due to temprorary cerebral anemia; it was likely that the slow pulse of 40 was not alone the cause of this. One often saw a heart rate of 40 with no attacks of unconsciousness; in this case not only had the pulse been slow, but each of those 40 beats was inefficient, since in each the sequence of the contractions of the chambers of the heart was abnormal. Dr. Hart cited a case which he had seen in which "fainting attacks" came on with a heart rate of 200; these were extra systoles, and so although many in number were ineffectual in maintaining the circulation. To maintain a proper circulation not only should there be a sufficient number of beats, but in each the sequence of the contractions of the chambers of the heart should occur in the proper order.

**Prolonged Complete Heart Block Without Lesion of the Bundle of His.**—Dr. B. S. Oppenheimer and Dr. Horatio B. Williams presented this communication, in which it was stated that the electrocardiograms were obtained from an old hemiplegic patient who was known to have complete heart block from February 26, 1912, up to the day of his death, December 31, of the same year. During many months he had pronounced Cheyne-Stokes respiration. The interest in the case lay in the fact that there were frequent changes in the electrical complexes of the ventricular beat and correlated with this the fact that histological examination revealed no organic lesion to account for the block, in the auriculonodal junction, the node of Tawara, or the main stem and its branches. The nodal artery was sclerotic. The variations in the ventricular complexes were seen not only from one examination to the next, but often from beat to beat. The waves Q, R, S, T all showed variations. The auricular rate was strikingly reduced during the dyspneic period, being 41.49 beats per minute, as compared with the rate of 94.17 during apnea. The ventricular rate was only slightly reduced during dyspnea, being 0.46 beats per minute, as compared with 31.25 beats per minute. In other words, the vagus had still a marked chronotropic effect on the auricle and little if any on the ventricle. Two atropine tests were made during which the heart block was not relieved; and again, the auricular rate was decidedly increased, the ventricular rate very slightly so. To explain the divergent types of ventricular complexes one might consider the possibility that the intrinsic ventricular pacemaker was frequently shifting, or that the different impulses started at the same point and traveled either along different routes or at varying rates along the same route. Complete heart block without anatomical lesion in the auriculoventricular system might possibly be of neurogenic or of circulatory origin, or it might be ascribed to chemical agents, to asphyxia, or to some hindrance to the passage of impulses from the terminal arborizations of the conducting system to the ventricular musculature. A previous example of possible functional heart block had been reported by Dr. Alfred Cohn. In his case of transient complete dissociation, showing constantly varying ventricular complexes, the patient recovered, so that there was no opportunity of determining whether or not there was an organic lesion in the auriculoventricular system.

Dr. Alfred E. Cohn said that the case reported was a unique one. There occurred many cases of heart block in which nevertheless after death no lesions of the conducting mechanism were found. This was a case of heart block without any cardiac lesion being found. The theories so far presented were quite useless, although quite numerous. Therefore, he thought it might be interesting to show one curve taken of a patient whom it was his opportunity to observe. This individual had a similar condition, but entirely recovered from the lesion as was shown when he was examined some six weeks later. There seemed to be no effect upon the coordination mechanism.

Dr. Theodore B. Barringer, Jr., said that the case reported was certainly a very interesting one, and, so far as he knew, unique. The personnel of the board of experts who made the histological examination (Drs. B. S. and A. Oppenheimer, Dr. Cohn, and Dr. Aschoff) made it certain that the auriculoventricular system was normal, morphologically speaking, and they were obliged to conclude that it was a question in this case of functional heart block. The conception of heart block as arising from functional disturbances of the bundle was by no means a novel one. They were all familiar with heart block arising from digitalis, or from the toxins of infectious diseases, or from vagus influence. This type of functional block was, as a rule, incomplete, transient in character, and occurred most often in patients whose auriculoventricular systems were already defective. Dr. Barringer said he had seen two cases of complete heart block in which influences other than morphological changes aided materially in inhibiting the conductivity of the bundle of His. One was a case of digitalis poisoning in a young man, whose polygrams showed no disturbances of conductivity until the day when complete dissociation ensued. The rhythm was different from ordinary heart block in that the ventricles beat more rapidly than the auricles and also quite independently of them. There was no autopsy. The second case concerned a man whose heart showed varying degrees of dissociation, alternating with periods of normal rhythm. During a period of complete block, one-fiftieth of a grain of atropine administered subcutaneously, increased the ventricular rate from 39 to 74 per minute in 35 minutes. The bundle in this case was probably defective and vagus inhibition sufficed to produce a complete block. In the case of Drs. Oppenheimer and Williams, they were obviously not dealing with a functional block due to toxins or digitalis, and the atropine experiments, it seemed to him, would eliminate any possibility of vagus influence. The cause would have to be one whose action was persistent and the sclerosis of the nodal artery was the only one, apparently, which would answer this requirement. As far as he knew, this was the first reported case of functional heart block, the details of which had been so flawlessly worked out that one was obliged to concur in the diagnosis which Drs. Oppenheimer and Williams had only suggested. They were both to be congratulated most heartily.

**The Cause of Metastasis Formation in Cancer.**—Dr. Isaac Levin read this paper.

Dr. F. C. Wood said that questions regarding the different influences which caused metastasis of cancer were of great importance. In animal experimentation it should be remembered that the conditions were different in animals than they were in human beings. In the latter the mechanical factors of metastasis had been studied. The size of the cell played an important part. In cancer the small cells were more apt to involve the lymph nodes; ultimately in the internal organs the large cells would be found. Another factor, unquestionably a mechanical one, was the lymph flow. Still another factor which did not play such a great part was ameboid action of the cancer cell itself. Dr. Wood called attention to the striking growth of the cancer cells at the periphery. He gave some of the conditions influencing metastasis in the human being which were interesting to all.

Dr. James Ewing said he wished to draw attention to a prominent statement that had been made, namely, that any previous injury to organs influenced the growth of cancer as well as of metastasis in animals; if this statement could be demonstrated as true it would be a very important observation. It was a curious fact about their knowledge, or lack of knowledge, of cancer that the important questions were so obscure; therefore, it should be the aim of those who were working in this line to throw any new light possible upon the problems involved. More work might be done on the blood stream itself and in this connection he called attention to the work of two men in Vienna who were working along this line and said that if the announcements made by them were true they were of great importance. Dr. Ewing said he could not miss the opportunity of saying something regarding metastasis which he considered of great importance, that acute traumatic metastasis was produced by the operator at the time of operation. He spoke of the energetic manner in which the patient was prepared for operation. Another point which had impressed him had been the period at which the metastasis was liable to occur. Good results no doubt would be obtained by educating the physician, especially regarding the development of these secondary growths.

### Philadelphia Neurological Society.

At a stated meeting held April 25 Dr. F. X. Dercum demonstrated a woman, about 45 years old, who had been shown at an earlier meeting on account of masticatory tic and in whom the symptoms had been relieved by suggestive therapeutics.

Dr. Samuel Leopold exhibited "A Case of Brain Tumor." The patient was a man, 54 years old, who for more than a year had impairment of vision, with hallucinations of seeing bunches of grapes at times. Examination disclosed the presence of optic neuritis on both sides, more marked on the right, but there was a total absence of headache and of motor and sensory phenomena. Gait, station, speech, reflexes—all were normal. In the absence of localizing symptoms a decompression operation was performed over the right motor area, but no growth was found. The optic neuritis, however, subsided, but a slight paresis developed on the left side of the face and in the left upper extremity. It was thought possible that a slowly growing growth might be present in the cerebello-pontile angle.

Drs. W. B. Cadwalader and E. P. Corson-White presented a communication entitled "The Relation of Syphilis to Progressive Muscular Dystrophy." They reported a number of cases of muscular dystrophy in which serological tests indicated the previous existence of syphilis. Of course, no final conclusion could be drawn as to the etiological connection of the two facts, but the association was certainly suggestive.

Dr. Charles W. Burr exhibited "The Brain from a Case of Acromegaly." The patient had been demonstrated at a previous meeting of the society and presented classic symptoms of acromegaly. Post-mortem examination disclosed, in addition to chronic lesions of liver, kidneys, and heart, a persistent thymus and a tumor of the hypophysis cerebri of considerable dimensions.

Dr. Thomas B. Holloway presented a communication entitled "Bilateral Pigmentation of the Cornea, Associated with Symptoms Simulating Multiple Sclerosis," and demonstrated the patient. The case occurred in a man, about 30 years old, who over a period of two years exhibited coarse intentional tremor, first of one hand and then of the other hand and slight slurring of speech, with a florid complexion and slight brownish pigmentation of a limited area of each cornea. The case was supposed to fall into the category of hemochromatosis with multiple sclerosis.

Dr. Milton K. Myers demonstrated "A Case of Tabes Dorsalis with Unusual Features in an Epileptic Woman." The patient, about 34 years old, had been having attacks of petit mal for sixteen years, with an occasional attack of grand mal. Insidiously, without pain, difficulty in walking developed and the knee-jerks were found absent. There was a history of venereal infection.

Dr. Morris J. Lewis presented a communication entitled "The Treatment of Chronic Sciatica." He reported two cases in which, other measures failing, an incision was made over the course of the sciatic nerve on the posterolateral aspect of the thigh and adhesions of the nerve freed. In each instance the patient was relieved and there has been no return of pain; nor were there any disagreeable after-symptoms.

Dr. John K. Mitchell presented a communication entitled "The Return of Reflexes and Other Curiosities of Tabes." He referred to cases in which the knee-jerks persist, at least for a time, in the course of tabes, and to others in which they return after having been absent; to some cases in which the Argyll-Robertson pupil was wanting, and to others in which it returned after having been absent; to some cases in which there was return of sexual power previously wanting, especially after treatment with testicular extract.

Dr. N. S. Yawger presented a communication entitled "Extensive Hemorrhage Into the Pia of the Brain."

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### Pathological Society of Philadelphia.

At a stated meeting held May 8 Dr. Robert A. Keilty presented a specimen illustrating Lane's kink of the bowel; also an aneurysm of the arch of the aorta compressing especially the left bronchus in such a way that breathing was difficult when the head was held vertically in the line of the body, relief being afforded by inclining the head to the right. He demonstrated, further, tissues from a woman who presented brownish discoloration of the face, neck, and arms, and also of the mouth, esophagus and stomach. There had been hematemesis during life, but no other definite history could be obtained. In manipulations about the floor of the pelvis the soft tissues proved friable and the finger was readily pushed into the vagina, whence an odor of ammonia became evident. The uterus contained a fetus at an early stage of development. Apparently the woman had introduced cotton saturated with ammonia into the vagina for the purpose of inducing abortion, and failing in this she had swallowed the ammonia, with the result of causing the corrosive discoloration of skin and mucous membranes observed.

Dr. Charles W. Luders presented a communication entitled "The Theory and Effect of Vaccine Therapy in Typhoid Fever, with Report of Cases." The results of clinical observation show that the treatment of typhoid fever by means preferably of an autogenous vaccine, a stock vaccine being employed until the autogenous vaccine can be prepared, brings about a distinct reduction in the mortality from the disease and also a diminution in the percentage of relapses.

Dr. John Auer of the Rockefeller Institute, read by invitation a paper entitled "Studies on the Heart in Serum-anaphylaxis." It is the rule for animals receiving an initial injection of horse-serum to die soon after receiving a second injection of the same character after an interval of two weeks or more. Under these circumstances a sudden and noteworthy fall in blood-pressure takes place, together with changes in the action of the heart due to disturbances in conductivity. At times heart-block occurs. That these phenomena had a peripheral origin is shown by the fact that they occur even when the vagi are cut.

Drs. Howard T. Karsener and Joseph B. Aub of Harvard University presented a communication entitled "An Investigation of the Origin of Immune Serum Necrosis of the Liver." In experimental observations upon cats it was found that preparations of liver substance caused thrombi in blood-vessels of the liver, in which were found large anerobic bacilli morphologically resembling those described in dogs under similar conditions.

Dr. John A. Kolmer read a paper entitled "Concerning Agglutinins for the *Treponema pallidum*." By suitable technique it was possible to demonstrate the presence of specific agglutinins in blood-serum obtained from syphilitic patients.

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## Books Received.

*The* Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading; but this is with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Contribution a l'Etude des Propriétés Bio-Physiques des eaux de la Bourboule. By P. Gastou and P. Ferreyrolles. Part I. Paper; illustrated; 41 pages. A. Poinat, Editeur, Paris.

Contribution a l'Etude Physiologique et Thérapeutique des Injections Hypodermiques d' eau de la Bourboule. By P. Gastou and P. Ferreyrolles. Paper; part 2; 36 pages; illustrated. A. Poinat, Editeur, Paris.

A Text-Book of Physiology. By Isaac Ott, A.M., M.D. Fourth Edition. Illustrated; price $3.50 net; cloth; 911 pages. F. A. Davis Company, Philadelphia.

Solidified Carbon-Dioxide. By Ralph Bernstein, M.D. Illustrated; cloth; 95 pages. Frank S. Betz Company, Hammond, Ind.

Die Chirurgie der Blutgefässe und des Herzens. By Dr. Ernst Jeger. Paper; illustrated; price 9 M.; 331 pages. August Hirschwald, Berlin.

Handbuch der Speziellen Chirurgie des Ohres und der Oberen Luftwege. By Drs. L. Katz, H. Preysing and F. Blumenfeld. Paper; illustrated; price 4 M.; part 8; Vol. IV. Curt Kabitzsch, Würzburg.

Tuberculin in Diagnosis and Treatment. By Francis Marion Pottenger, A.M., M.D., LL.D. Illustrated; cloth; 243 pages; price $3.00. C. V. Mosby Company, St. Louis.

The Interpretation of Dreams. By Prof. Dr. Sigmund Freud, LL.D., Authorized Translation of Third Edition with Introduction by A. A. Brill, Ph.B., M.D. Cloth; 510 pages; price $4.00 net. The Macmillan Company, New York.

Le Post-Partum Normal; 11 Fascicules; Service d'Obstetrique-Hygiene; Principes d'Asepsie. Paper; 150 pages. A. Maloine, Paris.

Progressive Medicine. Edited by Hobart Amory Hare, M.D. Paper; Vol. XV, No. 1; $6.00 per annum; illustrated; 361 pages. Lea and Febiger, Philadelphia, New York.

Diabetes: Its Pathological Physiology. By John J. R. Macleod, M.B., Ch.B., D.P.H. Cloth; price $3.00 net; 224 pages. Edward Arnold, London.

Technique Clinique Medicale et Semeiologie. By Dr. Emile Sergent. Paper; illustrated; 756 pages. A. Maloine, Paris.

Beiträge zur Klinik der Infektionskrankheiten und zur Immunitätsforschung. By Prof. Dr. L. Brauer. Paper; Vol. I, part 2; illustrated; price 8 M. Curt Kabitzsch, Würzburg.

Minor Maladies and Their Treatment. By Leonard Williams, M.D., M.R.C.P. Cloth. Third Edition. 396 pages; price $2.50. William Wood & Company, New York.

Handbook of Diseases of the Ear. By Richard Lake, F.R.C.S. Illustrated. Fourth Edition. Cloth; price $3.00 net; pages 287. William Wood & Company, New York.

Clinical System of Tuberculosis. By Dr. B. Bandelier and Dr. O. Roepke. Cloth; 526 pages; price $6.00 net; illustrated. William Wood & Company, New York.

The Surgery of the Stomach. By Herbert J. Paterson, M.A., M.C., M.B., F.R.C.S. Illustrated; cloth; price $3.50 net; 312 pages. William Wood & Company, New York.

Practical Physiological Chemistry. By Philip B. Hawk, M.S., Ph.D. Fourth Edition. Cloth; price $2.50 net; 475 pages; illustrated. P. Blakiston's Son & Company, Philadelphia.

International Clinics. Edited by Henry W. Cattell, A.M., M.D. Vol. I, 23d Series, 1913. Cloth; price $2.00; 302 pages; illustrated. J. B. Lippincott Company, Philadelphia and London.

Surgery, Its Principles and Practice. By various authors. Edited by William Watson Keen, M.D., LL.D. Vol. VI. Illustrated; cloth; price $7.00 net; pages 1177. W. B. Saunders Company, Philadelphia and London.

The Modern Treatment of Nervous and Mental Diseases. By American and British authors. Edited by Wm. A. White, M.D., and Smith Ely Jelliffe, A.M., M.D., Ph.D. Vol. I. Illustrated; cloth; 867 pages. Lea and Febiger, Philadelphia and New York.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Vol. 9, July, 1912. Edited by John S. Thacher, M.D., and Geo. Woolsey, M.D. Illustrated; paper. Corlies, Macy and Company, Inc., New York.

Die Diagnostische Bedeutung der Lumbalpunktion. By Dr. Alfred Hauptmann. Paper; 23 pages; Vol. 10, Part 1; price 1 Mk. Carl Marhold, Halle a.S.

Krankheitsentstehung und Krankheitsverhütung und Geheim Nispolle Lebensaukerungen des Korpers. By Dr. Hans Much. Illustrated; paper; 117 pages; price 3 Mks. Curt Kabitzsch, Wurzburg.

Die Ermüdung der Stimme. By Dr. R. Imhofer. Illustrated; paper; price 5 Mks.; 132 pages. Curt Kabitzsch, Wurzburg.

The Career of Doctor Weaver. By Mrs. Henry Backus. Cloth; illustrated; 379 pages. L. C. Page and Company, Boston.

Practice and Problem in Abdominal Surgery. By A. Ernest Maylard. Illustrated; cloth; price $3.25 net; 388 pages. P. Blakiston's Son and Company.

The Bacterial Diseases of Respiration, and Vaccines in Their Treatment. By R. W. Allen, M.D., B.S. Cloth; illustrated; price $3.00 net; 233 pages. P. Blakiston's Son and Company.

Les Sténoses Inflammatoires Chroniques de la Région Cardiaque de l'Aesophage; Paper; Illustrated; 132 pages; Imprimeries Gounouilhou, Bordeaux.

The Posture of School Children. By Jessie H. Bancroft. Cloth; Illustrated; price $1.50; 327 pages. The Macmillan Company, New York.

The School Dentists' Society; Its Objects and Aims. Second Edition; paper; illustrated; 116 pages; price one shilling net. W. Michael & Son, England.

General Paresis. By Professor Emil Kraepelin. Paper; 200 pages; price $3.00. Nervous and Mental Diseases Publishing Co., New York, 1913.

Freud's Theories of the Neurosis. By Dr. Edward Hitschmann. Paper; 154 pages; price $2.00. Nervous and Mental Diseases Publishing Co., New York, 1913.

Epidemic Cerebrospinal Meningitis. By Abraham Sophian, M.D. Illustrated; Cloth; price $3.00; 272 pages. C. V. Mosby Company, St. Louis.

Human Physiology. By Professor Luigi Luciani. Volume 1; cloth, illustrated; 592 pages. Macmillan & Company, London.

The International Medical Annual; Year 1913; price $3.50; cloth; illustrated; 628 pages. E. B. Treat & Company, New York.

## Therapeutic Hints.

**Iodine Vaporization in Therapeutics.**—Boissart describes a method of applying the antiseptic power of iodine, which method has been devised by Louge of Marseilles. It consists in the direct application of iodine vapor to cavities normally closed, to fistulous tracts, to the surfaces of wounds, to the ear, and to the uterine cavity. The essentials of Louge's method consist in the heating of iodoform contained in a flask and the conduction of the iodine vapor generated therefrom through a glass tube, the distal end of which is drawn out to a fine point, and which is applied to the cavity or surface to be treated. The antiseptic property of iodine renders this method of particular value in the treatment of infected wounds, and of cavities that are not readily accessible to the ordinary therapeutic agents.

Vaporized iodine is of eminent value in the treatment of tuberculous cavities and sinuses, furuncles that have been incised, anthrax, and chronic suppurations of the ear or of the mastoid. It is also of value in the treatment of uterine affections, such as simple metritis, inoperable cancer, and puerperal infection. In the last instance the iodine vapor is introduced into the uterine cavity by means of a double-current glass sound (iodine attacks metal). Varicose ulcers and soft or hard chancres are also favorably influenced by means of iodine vaporization. The duration of the individual treatment is three or four minutes. Louge has proposed the employment of this method in the treatment of synovitis, the vapor being introduced into the joint cavity by means of a syringe after the fluid has been evacuated.—*Gazette des Praticiens,* April 1, 1913.

**Subarachnoid Injections of Neosalvarsan in the Treatment of Cerebrospinal Syphilis.**—G. Marinesco of Bucharest does not believe that the impermeability of the meninges for salvarsan and other remedies furnishes a sufficient basis for the use of these substances by injection into the subarachnoid space. The fact that a substance administered intravenously or subcutaneously does not appear in the cerebrospinal fluid is no proof that this substance is not brought into contact with the nervous system. On the other hand such a substance is carried in the capillaries, and is transuded from the blood to be taken up again by the perivascular sheaths. It is almost certain that the lymph of the central nervous system does not flow into the cerebrospinal fluid, or, at any rate, passes into the latter only to a minimal extent. Bearing the above facts in mind, one cannot attribute the unfavorable results obtained in cerebrospinal syphilis by means of the subcutaneous or intravenous injection of salvarsan to the impermeability of the meninges with reference to this substance. These unfavorable results are to be attributed rather to the peculiar nature of nerve tissue, severe lesions of which are not amenable to cure. In many instances irreparable damage has been done to the nerve tissue long before any resort is made to neosalvarsan therapy.—*Zeitschrift für die physikalische und diätetische Therapie,* April 1, 1913.

**The Use of Formalin in Rectal Surgery.**—R. Engel has observed the good effects following the use of a sitz-bath of a six per cent. aqueous solution of formalin in the postoperative treatment of anal and perianal affections.—*Le Progrès Médical.* April 26, 1913.

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## Original Articles.

### THE PROPHYLACTIC AND THERAPEUTIC VALUE OF FRESH AIR IN SCHOOLS AND HOSPITALS, INCLUDING HELIOTHERAPY.*

BY JOHN W. BRANNAN, M.D.,

NEW YORK.

THE title of my paper does not fully express what I wish to talk about this morning, for what I have in mind is not so much the air within the school and within the hospital as it is the absolutely pure fresh air to be found just outside their walls. Not all of our school children nor all of our hospital patients can be taught or treated in the open air, but a very large proportion of those who need it most can enjoy this privilege, and it should be our duty as physicians and guardians of the public health to see that they get it to the largest possible extent. Those who must remain indoors should receive the maximum amount of fresh unaltered air that can be admitted through open windows and transoms. I shall attempt to show rather by pictures than by words what has been accomplished in schools and in hospitals up to the present time.

FIG. 1.—Seabreeze Hospital. View at 6 A. M. in spring. Children sleeping on porch all night. Canvas overhead rolled back.

It was a long time after the discovery in 1882 of the bacillus of tuberculosis by Koch before the outdoor treatment of pulmonary tuberculosis became thoroughly established. But many years before 1882 tuberculosis of the bones and joints and glands in children, known probably then as scrofula, was treated in the open air. The hospital at Berck on the coast of France was established by the city of Paris in 1861, the French believing that this form of tuberculosis was favorably influenced by the air from the sea. Even long before this date, in 1797, a hospital was founded by two English physicians at Margate, on the coast of England, for scrofulous disease in adults as well as in children. This is the only institution of the kind in England, but on the continent there are between 75 and 80 marine sanatoria, situated on the Baltic, the North Sea, the Atlantic Ocean, the Mediterranean, and the Black Sea. The original municipal hospital at Berck has been followed by several large private institutions, so that there are now at Berck between two and three thousand beds for children with surgical tuberculosis, about half of them maintained by the city of Paris, the others supported by private endowment. In 1904 the Association for the Improvement of the Condition of the Poor of New York, impressed by the favorable results

FIG. 2.—Seabreeze Hospital. Open-air school.

*Read at the International Congress on Hygiene and Demography at Washington, D. C., September 25, 1912.

obtained at Berck, decided to establish a small hospital for children with surgical tuberculosis at Sea Breeze, the summer home at Coney Island, which has been maintained for many years by the association, for by day. But it is what I have seen at Sea Breeze during the past nine years that has led me, wherever I have a voice or can obtain a hearing, to urge that not only our patients with pulmonary tubercu-

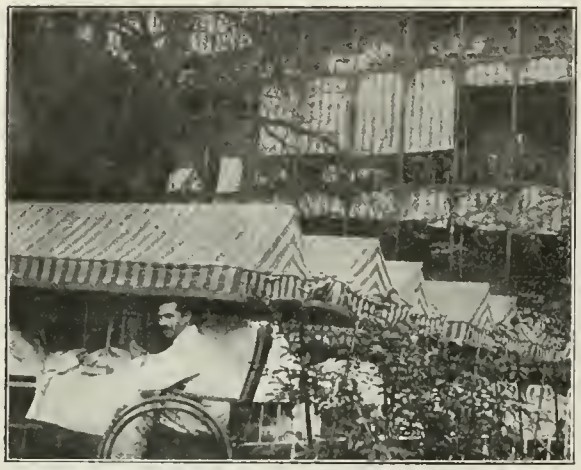

Fig. 3.—Bellevue Hospital. Patients on lawn and balconies.

Fig. 5.—Bellevue Hospital. Open-air treatment of pneumonia in children.

the children of the tenements of the city. The number of beds is restricted to 43, but now that the city has finally purchased Rockaway Beach we have reason to expect that a new hospital with 150 beds will be constructed and completed in the course of the next two years. The Board of Estimate and Apportionment has voted to accept the hospital, for which $250,000 has been subscribed, as soon as it has been completed by the association, and to maintain it hereafter as a city institution. What has been accomplished at Sea Breeze is probably known to many of you, for though the hospital may be modest in size, we have not allowed its light to be hid under a bushel. I shall therefore not impose upon your patience with any further description of the methods pursued there, but shall content myself with showing a few pictures of the daily life, by night as well as

Fig. 6.—Gouverneur Hospital. Children on open balconies.

Fig. 4.—Bellevue Hospital. Roof scene.

losis or with surgical tuberculosis should live in the open air, but that all of our patients, whatever their disease may be, and all of our school children, whether predisposed to tuberculosis or not, shall be placed in an atmosphere approximately the same as that out of doors.

At Berck, as at the other European seaside sanatoria, the children pass the day on the beach or on balconies open to the air and sunshine. This régime was adopted at Sea Breeze, and in the nine years since the opening of the hospital there has not been a day in all seasons and in all weathers that the children, including bed cases, have not been in the open air. At night the windows of the wards are wide open throughout the year. In the warm season the sashes of the windows are entirely removed. From April to November about one-third of

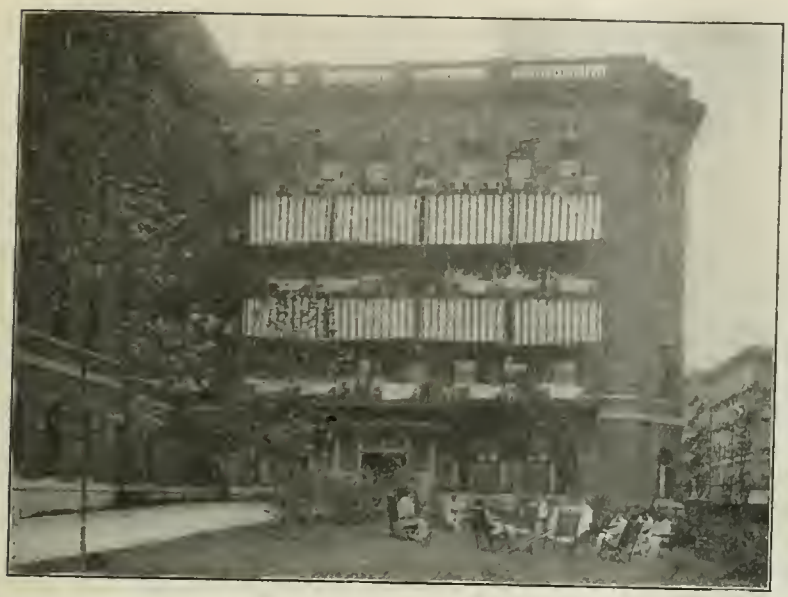

Fig. 7.—Harlem Hospital. Bed patients on balconies, also convalescent patients on lawn.

the children, as many as can be accommodated, sleep on the open porch. Throughout the summer months the ambulant children bathe in the ocean every day, and the nurses repeatedly call attention to the rapid improvement of the patients and the closing of sinuses under the influence of the sea water. During school hours the children are in a room with open windows or in a tent open on all sides, a teacher and a kindergartner being supplied by the Board of Education.

The good results obtained with the children at Sea Breeze were so uniform and so striking that it was decided to provide open balconies in all the hospitals then in process of construction in the department of Bellevue and allied hospitals. Every ward has at least one balcony attached to it, so that every patient, whatever his disease, may have the benefit of the outdoor air which in the past has been thought necessary only for tuberculous patients. In addition to the balconies there are large wide loggias at Bellevue and extensive lawns and roof gardens at all the hospitals but one. Gradually storm sashes and louvre windows are being added to the balconies so that even in the winter the patients can be moved out of doors, one or more sides of the balconies being always open for the free entrance of the outer air.

It is surely unnecessary for me to emphasize the stimulating effect of this treatment upon patients who under ordinary hospital conditions are confined to more or less poorly ventilated wards. It is, however, not easy to express this effect in figures or in percentages of recovery. In one disease, the acute pneumonia of children, an attempt has been made to reduce the results to figures. Previous to November, 1908, the children with pneumonia were cared for in a large sunny ward in the old building. The ward was fairly well ventilated, but there was no opportunity for outdoor treatment. After moving into the new building it became customary to place the children on the balconies for three or four hours a day, unless the weather was too stormy. The good effects of the fresh air were so noticeable that in January, 1910, it was decided to place the patients on the balcony as soon as the diagnosis of pneumonia was made, and to keep them there throughout the twenty-four hours, and this practice has continued up to the present time. It was noted that the patients, with rare exceptions, improved in all their symptoms, especially during the winter months, but no comparative study was made until a few months ago. The results of this study are as follows: From January, 1904, to November, 1908, 274 children

Fig. 9.—Graham School, Chicago. Fresh air obtained simply by raising window-sash.

Fig. 8.—Open-air school, Providence, R. I., showing windows trussed up to ceiling

Fig. 10.—Open-air class of tuberculous children on ferry-boat "Southfield" at Bellevue Hospital. Winter view.

(one year of age and over) were admitted to the hospital, and of these 69 died, a mortality of 25.2 per cent.; in the second period, from November, 1908, to April, 1912, 391 children (one year of age and over) were under treatment, of whom 42 died, a mortality of only 10.7 per cent. The observations of Dr. John Howland, the attending physician in charge of the children's service, and his assistant, Dr. B. Raymond Hoobler, apparently show that this remarkable effect of the outdoor treatment is largely due to the increased blood pressure caused by the fresh cold air. As these studies have been published elsewhere, I shall not refer to them in detail, but will simply state that the rise of the blood pressure out of doors was attributed by these observers to the reflex stimulation of the vasomotor centers by the action of the cold air on the skin of the face and on the mucous membrane of the nose.

Infants under one year of age are also placed in the open air as soon as the diagnosis of pneumonia is made, and adult patients are treated on the balconies or in a room with the windows open so that the temperature approximates that out of doors. These patients uniformly do well, but no statistical study has been made of the results. The effect of the cold air in quieting the restlessness and delirium of pneumonia, especially in alcoholic subjects, is very striking.

Maternity cases are removed to the balcony in from 4 to 7 days after delivery; during the warmer months within 36 hours in some instances. The good effects are evident to all, and particularly to the women themselves. The nurse in charge states that the patients sleep better and call for less attention than when in the ward. A week or ten days (and nights) outing on a Bellevue balcony is not a bad substitute for Lakewood or Atlantic City.

Fig. 12.—Open-air class for anemic children at Public School, No. 21, New York City.

Fig. 11.—Open-air class on ferry-boat "Southfield"—sleeping hour.

Dr. Gregory, the hospital alienist, reports that the effect of open air upon the acute insane is very beneficial, especially in the excited and restless. It has a quieting influence and induces sleep. The same is true of the alcoholic patients of whom there are thousands in the hospital annually. The fresh air and oxygen seem to furnish the stimulation which they greatly need, so that they eat and sleep well. It has been Dr. Gregory's experience that if alcoholics be kept in the open air they will recover much sooner than if kept in the wards. The tremulousness and anorexia and mental depression disappear very quickly. In functional nervous diseases the value of the open air treatment is generally recognized. It induces sleep,

improves the appetite, and supplies the general stimulation which patients of that class require.

Patients after severe operations gain rapidly when taken out of doors. In critical cases the stimulus of the fresh air often seems to turn the tide. The patients themselves are prompt to show their gratification, especially the women, using the words "fine," "lovely," "splendid," and "very nice," in expressing their appreciation. One woman, one of the group on the lawn shown in picture, when I asked her how she liked being in the open air, replied with much feeling that "it made her sleep all night and took away all her pain."

Fig. 13.—Showing child before and after eight months in open-air class in Public School No. 21.

Passing on to the consideration of the open-air

Fig. 14.—Heliotherapy at Leysin, Switzerland. Children with bone tuberculosis.

schools, we may divide them into three groups, first, those for children with pulmonary tuberculosis; second, those for children who are anemic, underweight, and ill-nourished, and hence consid-

Fig. 15.—Heliotherapy at Leysin. Child with a 32 foci of tuberculosis. Cure after 15 months of treatment.

ered to be especially predisposed to tuberculosis, and third, those for normal school children who are neither tuberculous nor predisposed to tuberculosis or any other disease.

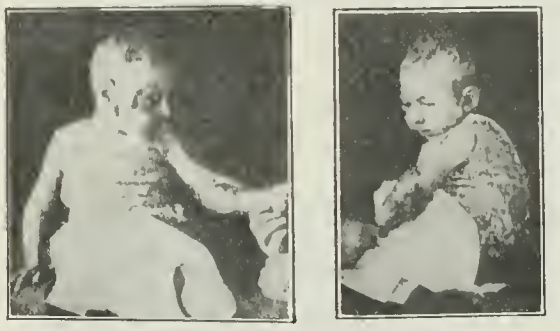

Fig. 16.—Results of heliotherapy at Leysin. Complete extension and flexion of diseased elbow joint after 13 months' treatment.

The open air school movement began in 1904 with the "Waldschule" at Charlottenburg, and was followed in 1907 by the outdoor school at Bostall Wood in the outskirts of London under the auspices of the London County Council. Other schools were soon established in various parts of England, of which those at Bradford and Sheffield are per-

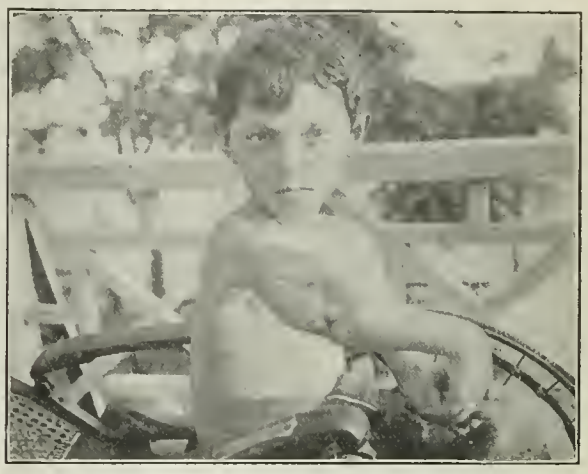

Fig. 17.—Heliotherapy at Seebreeze Hospital, June, 1912—boy with tuberculosis of elbow, shoulder and axillary glands—open sinuses.

haps the best known. In January, 1908, the movement spread to the United States and with the opening of the school term this autumn there will be in operation over 200 fresh air schools and classes for tuberculous, anemic or normal children, according to a statement of the National Association for the Study and Prevention of Tuberculosis. In Germany and in England structures especially designed for the purpose were erected for the children. In this country we have been content as a rule to make use of buildings already in use, either by selecting a room facing the south and altering the windows or by covering and partially enclosing a portion of the space on the roof.

The first school in the United States, with the exception of the hospital school at Sea Breeze already referred to, was opened in Providence. This was followed closely by the Franklin Park School in Boston. The Providence school is in an abandoned school house from which a portion of the south wall was removed and replaced by windows which can be trussed up to the ceiling. The class in Boston is on the roof of a building built for a

Fig. 18.—Heliotherapy at Seabreeze Hospital, June, 1912—same boy Other children with tuberculosis of hip (7 open sinuses), spine and ankle.

refectory in a public park. It is freely open on all sides; protection in stormy weather is secured by curtains which can be dropped as desired. The

results obtained in these schools were so satisfactory that they were soon followed by the establishment of similar classes in Hartford, Chicago, New York, and other cities. These schools vary greatly in their construction and arrangement, but they all agree in supplying fresh air in abundance to the pupils. In Hartford the class is held in a tent, in Chicago and in New York some of the classes are on the roofs of school or hospital buildings. In the Graham School in Chicago the fresh air is obtained simply by raising the windows of an ordinary school room. Two of the New York schools are of especial interest, being located on the upper deck of old municipal ferry boats.

Fig. 19.—Heliotherapy at Seabreeze Hospital, October, 1912. Children on beach. Cured cases of tuberculosis of elbow, wrist and ankle (open sinuses in each case).

Most of these classes are for tuberculous children who have been excluded from the public schools. The régime is the same in all—life in the open air, nourishing food, rest in bed after dinner, and the systematic use of gentle exercises. The results also are practically the same in all—gain in weight, disappearance of the physical signs, and improvement in general condition, both physical and mental. As an instance of these good results, the teacher of the class on the Gouverneur ferryboat reports that of 37 children who had been in the class for periods varying from six months to a year, 30 had been readmitted to the public schools by the physicians of the Board of Education. It should be added that the pupils have not only regained their health, but have also kept pace in their studies with the other children.

In the second group of open air schools belong the classes for anemic children established in the public schools of New York by the Board of Education. The children in these classes have no physical signs of disease, except enlarged glands in some cases, but they are anemic, under weight, ill-nourished, and many of them from tuberculous families. The first class was opened in April, 1910, in public school No. 21, in Mott Street, the center of the congested Italian quarter. Forty such classes have been authorized by the Board of Education and at the present time twenty are in successful operation in various parts of the city. The same routine is followed as in the schools for tuberculous children. The food is provided by the committee on tuberculosis of the Charity Organization Society, a private association, all other expenses being met by the city, through the Department of Education.

The results in all the fresh air classes are excellent. During the first winter the children in the Mott Street school gained on an average of 6 pounds apiece, with a corresponding improvement in all other respects. The increase in hemoglobin is especially interesting. Starting at an average for the class of 71 per cent. in the autumn, the figures reached 85 per cent. in the spring, whereas a control class of normal children in the same school, declined from 87 per cent. to 81 per cent. during the same period of time. At the end of the school year, the twenty-one children had so improved that they were returned to their former classes and a new group of anemic children took their places. Dr. Doty, the superintendent, reports that practically all the children in the school are anxious to join the fresh air class.

As the cost of the extra food is considerable and seemed likely to limit the number of open air classes, it was decided to lessen the amount of food in the new classes, and in some instances no extra feeding at all has been furnished, the children having only the usual dinner provided at home. As far as can be judged by a few months' trial, the children in these later classes are doing nearly as well as in the original class of school 21.

The third group of open air schools, those for normal children in the public schools, is in some respects the most interesting, and full of promise for the future. Having demonstrated that pure air fresh from outdoors can be given not only with safety but with great benefit to school children who are tuberculous or whose health is otherwise impaired, the next step is to give fresh air to all school children. A fresh air class was opened last winter in public school No. 9, at the request of a number of parents of the children. With the permission of the Board of Education the room was

Fig. 20.—Heliotherapy at Seabreeze Hospital, March 18, 1913. Cured case of tuberculusis of knee. No sinus.

cut off from the ventilating and heating system of the school building and the windows were kept open as in the anemic classes. The children receive no extra food, as the parents are well able to provide for them at home. Classes have also been opened—ten in all—in various private schools in different parts of the city, including the Ethical Culture School, the Horace Mann School, the Friends' School in Brooklyn, the Packer Institute, and the Brooklyn High School. There is no statistical record of the results of the schools, but the teachers all feel that much good has been accomplished and the parents are very much pleased. The chief interest, however, attached to the schools of this group lies in the evidence they afford that the public, and parents in particular, are beginning to appreciate the value of fresh air for their children during school hours and are preparing to demand it of the school authorities. In Boston, Chicago and other cities the movement for fresh air schools for normal children is also making progress, so that it would seem to be only a question of time when all children will be taught in the open air.

In conclusion, I should like to say a few words about heliotherapy, limiting myself to its use in surgical tuberculosis, especially as practised by Rollier, at Leysin, in the Vaudois Alps, Switzerland. Rollier established his hospital for the treatment of tuberculosis of the bones and joints as long ago as 1903, and has presented papers on the subject at at least three international congresses, but it is particularly during the last two years that his work has attracted attention. Other physicians had made use of the sun cure on the shores of the Mediterranean, joining it to the "cure marine," and Bernard had practised it in the pure mountain air of the Engadine. It was the work of Bernard that led Rollier to select an elevated site for his hospital. I shall speak but briefly of his methods and his results as the lantern slides present both so clearly that but little word description is necessary.

Leysin is situated at an altitude of about 4500 feet above sea level. The hospital buildings face the south and are protected by mountain ranges from the cold winds of the north and west. Rollier states that even in midwinter the temperature on the sunny balconies is often as high as 45° to 50° Fahrenheit. Owing to the purity of the atmosphere and the absence of moisture, there is no loss of the luminous and caloric radiation of the sun. The exposure to the sun is gradual, beginning with five minutes three times a day. This is steadily increased as pigmentation of the skin appears until finally the entire surface of the body is exposed from sunrise to sunset. The head is protected as shown in the illustrations. With the development of the pigmentation the cure progresses until the recovery is complete; how complete it is may be seen from the pictures of the two boys, the first of whom had 32 foci of tuberculosis, even the lungs being involved, the second, multiple lesions including a badly disorganized ankylosed elbow with seven sinuses and a history of three resections of the joint and forearm. Fever was present in both cases. After one year's treatment both boys are well, with complete return of function—full flexion and full extension—in the elbow of the second boy. I am not an orthopedic surgeon, but I know what is considered as a cure of a tuberculous joint. I have seen many such cures at Sea Breeze. Arrest of the disease with ankylosis of the joint in as useful a position as possible is accepted as a satisfactory result. Rollier regards the pigmentation as an important element in the cure. It gives to the skin a remarkable resistance, favors the cicatrization of wounds and confers a local immunity to cutaneous microbic infections. On days when there is no sun, recourse is had to radiotherapy for the adults and the Bier treatment for the children, and at all times, whether the sun shines or not, the skin has its bath of air and light, as it is put by Rollier.

During the past two years Rollier's methods have been followed by several surgeons at lower levels, where they did not have the advantage of the intense sunlight of Leysin nor the actinic action of the sun's rays at the seashore. The experience of Bardenhauer of Cologne is referred to in a recent number of *La Presse Médicale*. During the spring, summer and autumn of 1911, the season was unusually favorable at Cologne, and Bardenhauer exposed his cases of surgical tuberculosis to the sun in the manner prescribed by Rollier and reports results approximately the same as those obtained at Leysin. Other surgeons have had a similar experience.

The work of Rollier was brought to my attention some two years ago but it was not until last spring that it was decided to add the sun cure to the "cure marine" at Sea Breeze. In April treatment was begun with the first case and we now have fifteen patients exposed for several hours a day. In each case the joint or bone most affected was selected for the first exposure. In only two cases, both of long standing and of highly nervous temperament, did we have to interrupt the treatment. It is of course too early to claim permanent results so far as concerns the local lesion, but there can be no question as to the effect on the general condition and the spirits of the patients. The children themselves are perfectly delighted to get rid of their clothing and probably wonder why we never thought of it before.

The writings and demonstrations of Rollier and other surgeons practising in the mountains of Switzerland have tended to create the impression that heliotherapy and the cure d'altitude are synonymous, a view which is vigorously disputed by Calvé of Berck in the August number of *Archives de Médecine des Enfants*. Calvé and Ménard claim that the actinic action of the sun's rays is at least as powerful at the seashore as in mountain regions. Since the construction of the new open pavilions at Berck facing the sea, all sinuses and suppurative lesions are left uncovered and exposed directly to the sea air throughout the day and are but lightly covered at night. Under this treatment healing progresses more rapidly than formerly, according to Ménard. This practice is now followed at Sea Breeze, with the addition of sunlight. At last the skin of the child, at least the child with surgical tuberculosis, is coming into its own, the free enjoyment of its natural elements, air, light, and sunshine. Let us hope the day is at hand or not far distant when all children may share in this health-giving and life-saving privilege.

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# THE ROB.

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NEW YORK.

VOLTAIRE once said to the Margravine of Baireuth, sister of Frederick the Great, "Often an air of truth mingles itself with the biggest lie."

The "rob" or "robb" played a prominent part in one of the most curious episodes in the history of medicine. This secret so-called antisyphilitic specific has had a more or less extensive sale not only in France but in other countries from 1761 to 1910, and, so far as I know, is still on the market.

The mysterious exotic word "rob," which is Arabic in origin, meaning "a confection of fruit juices," was well selected for this secret remedy, which received not only the sanction of the Royal Medical Society of Paris, the approbation of Louis XVI, and of the French government during the revolution, but also the approval of Napoleon, who later offered the inventor 1,000,000 francs for the secret. During Napoleon's sojourn at Elba his sister, the beautiful Pauline, Princess Borghese, sent to Paris for two bottles of 'The Rob-Laffecteur," but history does not state whether they were for her august brother or herself.

At one time, large quantities of all kinds of mercury, especially the bichloride of mercury, were given for the treatment of syphilis and salivation was considered necessary in order to make a cure. The lesions caused by syphilis and those produced by mercury were confounded and not infrequently the dose of mercury was increased when the use of the drug should have been stopped. Because mercury appeared at times to aggravate the manifestations of syphilis it was considered by some untrustworthy, inefficacious, and even dangerous. Those who "cured" what they called syphilis, without mercury, and the inventors or projectors of antisyphilitic remedies made much use of the fear of "that terrible metal which often produces grave conditions and often leaves obstinate and painful sequelæ at times resulting in death," and their advertisements always stated that they "cured syphilis without mercury."

Boyveau, or as he later called himself, Boyveau-Laffecteur, the inventor of the rob, says, in his "Traité des maladies vénériennes et méthode de leur guérison par le rob antisyphilitique" (Paris, 1814, pages 192 and 193): "A fortunate chance put me in the way of it. I have cured patients who have been 'given up' and I have saved the lives of many unfortunates. I employed all the means possible to perfect a remedy which would heal the cruel wounds which have afflicted humanity during four centuries. It is not sufficient to find the most efficacious herbs, but it is also necessary to know how to combine them, and to vary the doses, following the intensity of their virtues, and to unite them in a vehicle proper to develop their energy for destroying and expelling the morbific material. . . . The principle of my theory was that herbs do not change the constitution of the patients, do not disturb the play of organs, aid the action of the animal economy and are to be preferred, on all occasions, to mercury, which acts only as an element of fire and destroys all that surrounds it. If one places mercury in a copper, silver or golden vessel this terrible agent destroys it. . . . I do not know why physicians advise, with so much ostentation, the internal and external use of mercury, since they cannot control its fatal effects. The French revolution has fewer victims than the sublimé—known in the new chemical nomenclature under the less appalling name of bichloride of mercury—advised by Van Swieten. When will the people of the art be sufficiently wise and humane to renounce this poison?"

Everything favored the sale of "Le Rob-Anti-Syphilitique"—the odd name, the fear of mercury, that it had the sanction of a government, a king, an emperor, a Royal Medical Society; that the royal edict of Louis XVI, September 12, 1778, punished anyone imitating it with a fine of 1,000 livres (one-half going to the king and the other to Laffecteur the inventor); that it was made of herbs and contained no mercury and, the most important fact of all, the magic of it—it was a secret preparation "Every secret remedy performs miracles because it is secret; disclose the secret it becomes inert."

Boyveau further states in his "Traité des maladies vénériennes," etc., page 195: "It was in 1776, with a consciousness which applauds itself for working only for the good of humanity that I presented myself to the commissary of Paris, M. Berthier, who refused to grant his protection to a remedy whose worth had not been proved but who permitted me at my expense to prove it."

On the back of the title page of Boyveau's work just quoted the following can be found: "At first I announced I would present my remedy to the medical society for special reasons, under the name of Laffecteur; but the law to-day requires one to use his own name. I therefore take that of my father, and I will sign it in the future, Boyveau-Laffecteur."

Payenneville in his work ("Histoire d'un spécifique de la vérole au XVIIIieme siecle Le rob de Boyveau-Laffecteur," Laval, 1910) says: "In August, 1810, a document was addressed to the Minister of the Interior at Paris by the commission on secret remedies stating that the 'Rob-Laffecteur' was more or less derived from a depurative syrup invented by Vergely de Velnos which had been authorized by the Royal Medical Society in 1761 and that several persons not connected with medicine, had addressed themselves, through an individual assuming the name of Denis Laffecteur, to the commissary of Paris, M. Berthier, for permission to try their antisyphilitic remedy at the hospital in the barracks at Saint Denis."

From this document, cited by Payenneville and the two statements quoted above, made by Boyveau himself, Boyveau appears to have been the "Denis Laffecteur" who assumed the name of Laffecteur when the request was made to try the antisyphilitic remedy at Saint Denis, and that is how this name became connected and identified with the rob, for it was first exploited under the name of "Rob-Laffecteur." On pages 195, 196, 197 of his work, Boyveau, describing the proving of the worth of his remedy at the barracks at Saint Denis in 1776 on three recruits of the pioneer corps, says: "Dr. Poissonier des Perriers, a physician, and M. le Breton, a surgeon and obstetrician, who is very celebrated to-day, were selected to supervise the experiments. As it was important to avoid any shadow of doubt, I obtained permission from the commissary to have the three patients placed in a reserved room, having three separate locks on the door, the key of one being given to me, the other two kept by the commandant so that I was prevented from entering the room alone. They also had a sentinel outside the door and a guard in the room.

My specific was also placed in a closet having three different locks, of which I kept one key, the other two also being held by the commandant. The specific was sealed in a vessel with the seal of the

Fig. 1.—Dr. Pierre Boyveau.

commissary, of the physician who watched the experiments, and my own. These three seals were broken and the vessel containing my remedy was resealed with three new seals each time the remedy was administered. I did not prepare the tisanes, or have anything to do with the preparation of food for the three soldiers, so that there could be no suspicion of my placing mercury in either. The patients were in a deplorable condition. I treated them, and at the time predicted they were entirely cured. This proof obtained the sanction of the government for my rob." (By an edict of Louis XVI September 12, 1778.)

Dr. Pierre Boyveau and Raffart de Marsilly, a nobleman, were the first to exploit the rob, which they called the "Rob-Laffecteur"; Boyveau probably was the inventor while de Marsilly furnished the funds. It is estimated that they made 150,000 francs a year by selling the rob. The cause of the dissolution of this partnership, which occurred in 1792, is unknown. However, they both continued in the rob business, de Marsilly calling his rob the "Rob-Laffecteur" and Boyveau naming his rob "Rob-Boyveau-Laffecteur."

Boyveau-Laffecteur, as Boyveau now called himself, insisted that he was the inventor of the true rob—the "Rob-Boyveau-Laffecteur"—and the house selling the "Rob-Laffecteur" claimed they had the original rob with the original name "Rob-Laffecteur" and that Boyveau was an impostor. This wrangle served only to advertise both robs.

Raffart de Marsilly and Hoffmann, his son-in-law, and successor, continued the sale of the "Rob-Laffecteur." From Hoffmann the business passed to his son, Alphonse Hoffmann, and was conducted by him until 1849. What became of de Marsilly is not known, but certain manuscripts show that the committee of safety, during the revolution, requested him or his agents to deliver his "Rob-Laffecteur" to the hospitals.

Doctor Pierre Boyveau, who was born at Rochelle in 1750, doubtless came to Paris to study medicine. He married his niece, Jeanne Boyveau, and she bore him fourteen children, seven of whom survived him. Boyveau died at Paris in 1812, leaving an estate valued at 3,000,000 francs. Of the seven surviving children of Boyveau only one, the eldest, Dr. Charles Boyveau, who obtained his degree in medicine in 1820, continued in the rob business.

For the reader who is curious to know what Boyveau, Sr., looked like, I have inserted a copy of an engraving of him made in 1795. He is said to have been prepossessing with considerable bonhomie. Not a few persons were jealous of him, and he had many enemies, but he also had many influential friends, and some partisans in the medical profession, one of the latter, Joseph Devaux, in 1808, dedicated a thesis to Boyveau, entitled "Optimo nec non dilectissimo Boyveau, Doctori medico."

After the death of his father, Dr. Charles Boyveau managed the business of the "Rob-Boyveau-Laffecteur" until 1842, when it was sold to Giraudeau de Saint Gervais for 20,000 francs, and in 1849 the other "only true and original, rob" the "Rob-Laffecteur," was also acquired by the same person for 70,000 francs.

I am inserting a picture taken from Payenneville's work, of a bust made in 1837 and now in the Musée Carnavalet, Paris, of Dr. Charles Boyveau. Some may regard it as evidence that history repeats itself in the fine arts as well as in other walks of life, or that the jest of yesterday may be repeated as sound philosophy to-day.

And now Giraudeau de Saint Gervais plays his part. His name was Jean Giraudeau, he was born at Saint Gervais in 1802, studied law at Poitiers, but giving up this career, came to Paris, studied medicine, and received his doctor's degree in medicine at the age of twenty-three.

"The therapeutics of syphilitic affections without

Fig. 2.—A caricature bust of Dr. Charles Boyveau.

the use of mercury" was the title of his graduation thesis. Toward the end of his term at the medical school he made the acquaintance of one Mme. Jullemier, a midwife, whose interesting memoirs ap-

peared in 1835, and who conducted a much frequented house for accouchements in the neighborhood of the Odéon. Their intimacy favored the fortune of Giraudeau but not that of Mme. Jullemier. Mme. Jullemier had a "purely vegetable rob" of her own composition, and it was to dethrone the "Rob-Laffecteur" which the midwife was "astounded to see still used in a century in which medicine was enriched by so many discoveries." After a time Giraudeau left Mme. Jullemier, but took the midwife's rob along with him and called it the "Rob of Giraudeau."

Here is the formula of Mme. Jullemier's rob, as given in her memoirs—where she alludes to it as follows: "Have confidence, gentle clients. Here is the heroic remedy which M. Giraudeau sells you at 12 francs the bottle. What a wonder of savoir faire":

| | |
|---|---|
| Gentian root | 20 c.c |
| Jalap | 10 c.c. |
| Molasses | 35 c.c. |
| Essence of cinnamon or peppermint | 2 c.c. |

But the two older and better known robs interfered with the sale of Giraudeau's rob, and he therefore bought them both, as we have seen, one in 1842, and the other in 1849. He then exploited all three robs, pretending through his advertisements that a rivalry and competition existed between all three. It is estimated that his advertising in newspapers, almanacs, and by posters cost him 200,000 francs a year.

Giraudeau rapidly amassed a fortune of several million francs. He died at his chateau at Bonffemont on June 2, 1861. It is not known how he obtained the cross of Chevalier of the Legion of Honor or the Greek Order of the Saviour, but he ennobled himself by attaching the name of his birthplace (Saint Gervais) to his own name, calling himself Giraudeau de Saint Gervais.

In "Les Médecins de Paris jugés par leurs œuvres" (Sachaile, 1845), we read: "Alas, we know M. Giraudeau de Saint Gervais, whose name and address are in all the newspapers, he is the chief of those commercial physicians who consider a patient as an object for exploitation only."

The following is an abstract from an article which appeared in a medical journal at the time of Giraudeau's death, 1861: "At twenty-three years of age he became a doctor. Without loss of time, he took his century at its word and imprinted upon its forehead the deep stigma of shame. He introduced into the practice of medicine the shamelessness and power of impudent and lying advertising."

After Giraudeau's death, his sons conducted the business, which in 1882 was sold for some several 100,000 francs.

Payenneville says in his work mentioned above: "The records of the Royal Society of Medicine at Paris make no mention of the composition of the rob; becuse it was understood that the remedy was a secret preparation and also because this society was requested simply to say whether or no the rob contained mercury."

It is certain that the members of the society selected to make this inquiry knew the exact composition of the rob, since it is said, somewhere in their reports, that Boyveau had furnished them all the constituents of his mixture which they made and gave to patients. One of these experts, Bucquet, who had a great reputation as a chemist, said he found no mercury in the mixture made by the committee of the Royal Medical Society, but he did not conclude that it was absent from the mixture. This reserve on Bucquet's part was based upon the fact that after he had introduced a small quantity of mercury in the rob, he was unable to find it in his analysis."

The following is quoted from Boyveau's work, pages 215 to 216, cited above: "On April 19, 1780, this committee of savants declared the radical cure of twelve of the most desperate cases in the hospitals of the capital by means of the rob which the committee themselves had made. Their conclusions contain four articles which I (Boyveau) embody. (1) The Society thinks that the rob of M. Laffecteur, as it has been prepared, does not contain mercury. (2) That the remedy and method of Laffecteur may cure confirmed and desperate cases of venereal diseases. (3) That this method did not exclude special accessory forms of treatment—precautions and modifications depending upon circumstances impossible to define, which must be left to the discretion of the physician. (4) That this remedy containing no mercury may be useful in the cases where either the internal or external use of mercury is feared, such as, for example, when there is a complication of the syphilitic and scorbutic virus."

On the conclusions of the Royal Medical Society at Paris, Boyveau writes as follows (page 216): "After so thorough an investigation of the rob, so many chemical analyses having been made previous to the prodigious cures which were affected before the eyes of, and by the hands of, prejudiced men, I can now announce that I have found a specific, purely vegetable, and much superior to all the preparations of mercury, because it produces a radical cure of desperate venereal diseases."

Payenneville says: "Naturally a great number of authors have pretended to know the composition of the rob (*i. e.* Rob-Laffecteur) and have given the so-called formula but none of these seem to be the true one."

Payenneville thought that the following given by a contemporary of Boyveau approached nearest the formula actually used.

Sarsaparilla, guiacum, cumin, flowers of borage, senna, rose leaves, musk, sugar, and honey. These were boiled down in water to the consistency of a syrup. However, many physicians claimed that the rob contained mercury, as several of their patients who took no other remedy became salivated.

After the firm producing the "Rob-Laffecteur" had sold their business to Giraudeau, they published a list of formulæ which were supposed to contain the true constituents of their rob. Here is one of these which I have copied verbatim from Payenneville:

| | | |
|---|---|---|
| Salseparille | 40 | parties |
| Saponaire | 50 | " |
| Squine, Saxafras, Gaïac | 8 | " |
| Santal citrain, Ecorce de buis, Ecorce de garou | 10 | " |
| Broux de noix sèche | 9 | " |
| Mercuriale | 25 | " |
| Cynoglosse | 30 | " |
| Buglosse | 10 | " |
| Bourrache | 30 | " |
| Chardon bénit | 10 | " |
| Fumeterre, Cones de houblon | 5 | " |

| | | |
|---|---|---|
| Feuilles de scolopendre | 5 | parties |
| Racines de chien dent | 10 | " |
| Racines de taraxacum | 10 | " |
| Racines de chicorée | 10 | " |
| Racines de séné | 40 | " |
| Racines de roses blanches | 40 | " |
| Racines de bécatunga | 10 | " |
| Racines d'agaric blanc | 10 | " |
| Semences d'anis, Semences de persil, Semences de fenouil, Semences de cumin, Semences de carvi, Semences de carotte, Semences de myrthe | aa 5 | " |
| Eau de pluie | q.s. | |

The "Annonces de Normandie," 1778, page 180, says of the rob: "Such a remedy is a beautiful present to humanity."

In 1910 the robs were (and probably they still are), sold in France, each with its distinctive bottle and prospectus, but the price is the same for one or the other. According to Payenneville "the present proprietors of the robs declare that none of them contain mercury, and numerous chemical analyses verify this statement."

It was not, it seems, sufficient for the patient to take a number of bottles of the rob in order to be cured of syphilis, but much caution and a certain ceremonial was necessary before, during, and after the absorption of the divine rob in order to obtain its marvelous effects. "The patient must be prepared by taking a tisane laxative and an emetic, and if he had a tendency to congestion he must be bled. This was followed by a purgative (senna). Sarsaparilla must be added to the rob, notwithstanding the fact that it contained a large amount of this substance. The patient must be placed upon a diet, and because the rob is a depurative and sudorific, the clothes should be frequently changed. He should wear a calico shirt, cotton, or better still, linen, socks" (but it is to be noted that no particular make or quality of linen sock is specified) "and his underclothes should be warmed in winter." They condescended to explain how the cure takes place. "The rob cures syphilis in three ways simultaneously, by dividing, neutralizing, and expelling the dense humors."

The prospectus impressed the fact that the best remedies did not act at first, and therefore the purchaser must not lose patience after taking one or two bottles. It was sufficient if the remedy brought out only symptoms of the disease. The age of the disease had much to do with the number of bottles of the remedy which was necessary for a cure. The climate was of great importance, as it required eight to twelve bottles to effect a cure in France, but in Italy only four to eight.

"One assisted the cure by giving the disease to another person, or at least it was well to treat one's-self among strangers."

Several brochures on venereal diseases were written between 1778 and 1789 signed Laffecteur. In 1789 the following work appeared, "Recherches sur la méthode la plus propre a guérir les maladies vénériennes soit récentes, soit invétérées, par le Dr. Boyveau, médecin à Paris, 1789." In this work Boyveau simply alludes to the rob as a remedy which has given good results in his practice.

Many second-hand copies of works on the rob can be found in Paris to-day. Some are signed Laffecteur, others Boyveau-Laffecteur. These books which treat of the rob are well written, printed on good paper, and are unusually well bound. My copy has the following title, "Traité des maladies vénériennes et méthode de leur guérison par le rob antisyphilitique, par M. Boyveau-Laffecteur, médecin, Paris, 1814," and its subject matter is divided into six parts: The first part treats of the history of venereal diseases; the second part treats of the different methods used to cure syphilis; the third contains the history of the rob; the fourth treats of gonorrhea; the fifth gives the proofs of cures as made by the rob, and the sixth contains petitions, letters on various documents pertaining to the rob, including an ode on the "Rob-Boyveau-Laffecteur."

The following extracts are made from the aforementioned work of Boyveau-Laffecteur: "There are men of the art who have attacked me more or less adroitly. Their attacks are the more perfidious because they solemnly announce that they have analyzed my remedy and have the hardihood to publish a pretended analysis of it in order to increase the number of formulas in their works. Thus Dr. Desbois of Rochefort, who has compiled 'An Elementary Course in Medicine,' affirms that my rob is only another name for the 'syrup of cuisinier.' This in itself is absurd. Swediaur pretends that the rob is a syrup made from the marsh reed, the arundophragmites of Deleschamp, and with good reason adds that this herb has no great virtue in healing venereal diseases. It does not concern me that Swediaur pretends to have my secret, which I surely have not given him, and which will contribute nothing to his art or fortune."

And to Swediaur's statement: "But I believe there are few patients who are radically cured by using this remedy without the previous use of mercury," Boyveau-Laffecteur responds on page 222, "One understands from this that the English doctor (Swediaur) says to his patients: 'First pay me to give you mercury, which will not cure you, then take the rob which will cure you.'" After devoting five pages to attacking Swediaur, he closes his chapter on the history of the rob as follows: "I do not attach much importance to this critic. This writer shines but little in medicine and his book does not show that he had great success in the art of healing."

Boyveau further states: "On April 1, 1781, I was commissioned to furnish my rob to the ships and the marine hospital. This commission was renewed on August 8, 1788. On December 1, 1793, the government commissioned me to deliver my rob to all the ports during the war. On September 29, 1794, the committee of safety gave me the right to export my remedy wherever the interests of humanity demanded and ordered the custom authorities to allow the cases of my rob to pass without a permit. This proof of confidence on the part of the government has continued without interruption from April 1, 1781, to this day. Our august Emperor, to whom humanity is dear, has not withdrawn to this day the confidence with which I have been honored. The report of the medical society, April 19, 1780, of which I have given an extract, accepts the confidence with which I am honored not only in France, but in foreign countries. I have invited the health officials in the capitol and provinces to test a specific that thirteen physicians pronounce harmless and efficacious, and which has the approbation of the medical society and the sanction of the government. The papers report what has taken place—the happy results of the first treatments. Confi-

dence has been established by the cures which multiply; and on all sides demands are made for stations for the distribution of my remedy."

What the rob was, whether or not it contained mercury, are conjectures. Time proved that it did not cure syphilis, and its vogue gradually fell off. But the exploitation of this remedy did much harm in inculating false ideas in the minds of the layman regarding the treatment of syphilis which are not entirely eradicated to-day.

The reproach against Boyveau is that he exploited, through the credulity of the suffering poor and an ignorant public, a secret so-called specific which he sold at the exorbitant price of twenty-four francs a bottle, and the therapeutic value of which has not been proved after a century's use.

Was the rob altogether a fraud? Was it a big lie with a little truth? Does the secrecy which surrounds it wholly damn it? "In science," says the physiologist Bunge, "we are fully justified in not accepting a conclusion until the grounds upon which that conclusion is based are laid before us."

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## THE ACID TEST IN THERAPEUTICS.

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In selecting this topic for discussion at the fourth annual meeting of the American Association of Clinical Research, held in New York on November 9, 1912, I was guided by a desire to establish certain fundamental principles as a basis or foundation for clinical research, believing that the chemical problem in nutrition overshadows in importance all other questions. Hence, *the significance of the acid test*—to determine the physiological equilibrium as well as the chemical status of the body fluids and tissues. Although every physician is supposed to be thoroughly familiar with the scientific facts relating to acids and alkalies, as laid down in our text-books on physiology and chemistry, there is a dearth of information concerning *the effects* attending chemical deviations in the body fluids, blood and lymph. Thus, special attention has been given to the stomach in the case of hyperchlorhydria, without any efforts being made to correct or remove the effects—in the form of obscure nervous phenomena—directly traceable to the "habit" of the system which has given rise to the acid excess.

The original paper on this subject was submitted to a friendly critic for comment, in the expectation that any "unreasonable" claims would be pointed out—and I should evade the charge of "fictitious abstraction." In replying to the criticisms I have rewritten the article for the purpose of showing that we have to deal with demonstrable facts, scientific and clinical, susceptible of analysis and synthesis.

The importance of the chemical problem in nutrition depends upon the absolute necessity of inorganic matter to promote function—we should have no physiology without chemical stimulus. All vital phenomena in animals and plants are regulated, modified or governed by the chemical reactions of the nutritive pabulum—and the correlation is complete.

While plants take up carbon dioxide and throw off an equivalent of oxygen, and in animals the process is reversed, the protoplasmic cells are indistinguishable. Besides, the cell-sap, or nutritive pabulum in growing plants, is alkaline in reaction—just like the human blood under normal conditions, and oxygen is essential to their growth. Moreover, when plants are "cut" and placed in water the stems "swell" and become firm, and the chemical reaction of the cell-sap is changed to acid—like the blood-serum in the frog's leg when a ligature is applied at the thigh and the animal is allowed to remain in water; the tissues are swollen and tense. The counterpart of this phenomena is seen in nephritis—and it is believed to be due to colloid-chemical changes, the increased hydration capacity being caused by an abnormal production or accumulation of acid. Chemical deviations in the body fluids, therefore, may give rise to what might be termed a "habit," a self-perpetuating disorder, such as hyperchlorhydria.

*The obscurity connected with kidney disorders* supplies an apt illustration—while they have been differentiated and studied in detail, we still have no definite or demonstrable data to offer in the matter of treatment, simply because we have not yet fathomed the mystery of the causative factors responsible for their appearance. Indeed, the present outlook is rather discouraging—when it is claimed that kidney disease itself is the cause of the coincident or consecutive arteriosclerosis, whereas the kidney disease is but a local manifestation of constitutional derangement. A critical study of the chemical relations must convince the impartial student that Bright's disease is curable, in the sense that neuritis and neuralgia are curable. That is to say, a diminished alkalinity of the blood passing through the kidney tissues has interfered with function and destroyed structure—in other words, an excess of acid has produced organic disease.

Clinical observation shows that this increased hydration capacity or edema may be measurably controlled by the normal salt solution, and also that it can be permanently relieved by the employment of chemicals (lime salts), which restore to protoplasmic cells the inorganic proximate principles, the lack of which interferes with function. In addition should be mentioned the important clinical fact that recovery will be hastened by the conjoint administration of alkalies—to neutralize acid excess. Hence, the significance of the acid test—to determine the physiological and chemical status of the nutritive pabulum.

That *obscure nervous phenomena* may be due to acid excess is readily susceptible of proof, because the plan of treatment advocated causes them to disappear—a clinical fact and not a mere coincidence, since the results may be calculated with a certainty approaching mathematical precision, provided degeneration has not produced structural changes in the cells.

*An acid salivary reaction is* a short-cut in making a diagnosis, and might be misleading, unless corroborated and confirmed by other evidences. We have the acid mucus from the labial, buccal, palatine, molar, and lingual glands; also the alkaline or neutral saliva from the parotid gland, through Steno's duct, from the submaxillary gland, through Wharton's duct, and from the sublingual gland, which is supplied with from ten to twenty ducts (ducts of Revini), under the tongue. All told, the salivary glands produce approximately three pints daily—and a reliable test can be made by placing the moistened litmus paper directly *under* the tongue. In the case of severe attacks of typhoid, diphtheria, scarlet fever, and other serious illness, this method should be adopted, *after* the buccal cavity has been

rendered aseptic—to guard against the local effect of bacteria.

When it is stated as a clinical fact that an acid salivary reaction is a constant and persistent factor in disease, and that it is due to diminished alkalinity of the blood, and *not* to the presence of mucus or bacteria, nothing is assumed, because it can be demonstrated. Further, it is not necessary to prove that the saliva is not acid in perfect health, because it is admitted in text-books on physiology and by experimental investigators that under normal conditions the saliva is alkaline or neutral.

While hyperchlorhydria and so-called Bright's disease are chronic ailments, they represent essential conditions common to all disorders, acute, subacute, and chronic, functional and organic, and the complication incident to bacterial invasion requires no special line of demarcation, since the acid test still retains its ascendency.

The acid salivary reaction of hyperchlorhydria and Bright's disease (nephritis) represents essential conditions common to all disorders, but it does not follow that this is a primary condition, since it precludes the possibility of constitutional reaction—as in the incipient stage of tuberculosis, and perhaps in other diseases, such as cancer, where the reaction of hydrochloric acid is diminished or arrested—it disappears.

*The nature and significance of acid excess* will be readily understood by a brief recapitulation of certain well-known chemical changes incident to metabolism, as follows: The blood, under normal conditions, is alkaline in reaction; the lymph, together with the chyle, which unites with it in the thoracic duct, is also alkaline; likewise the products of glandular activity, except the kidneys, so that the upbuilding processes (metabolism), are constantly alkaline. Additional evidence in support of the proposition is to be found in the tissues—alkalescence is their normal status.

That anabolism, the up-building process, is an alkaline process must be patent when we observe the effects attending chemical deviation in the body fluids, blood and lymph, the evidences of malnutrition, as in chronic diseases. Indeed, they are conspicuous and multitudinous — chronic intestinal catarrh, with an increased output of acid mucus, bronchial catarrh, with atrophy or thickening, nasal catarrh with deafness, eye troubles, headaches and neuralgia, all are due to the same condition; and in the case of membranes and tissues dependent directly upon the normal alkalinity of the blood for their integrity, the rule still holds good—stiffness of the joints arising from a diminished alkalinity of the synovial fluid, muscular rheumatism, consecutive to involvement of the fibrous sheath; a low grade of inflammation attacks fibrous and serous structures throughout the body, from which the nerves do not escape, shown by neuritis and neuralgia, together with all the various forms of degeneration. Even the ductless glands, which exercise such an important influence upon the vital activities, do not escape. Bone structure also suffers; there is softening or "wasting" and condensing ostitis, shown by a multiplicity of deformities and deviations from normal.

Thus, we might proceed indefinitely to recount isolated and correlated scientific and clinical facts to establish principles, even laws—and this is analysis or induction. But the converse of this proposition also has alvantages—having a complete and satisfactory explanation of all the phenomena, the process is reversed and the facts stated from known principles—by deduction or synthesis. The following succinct and comprehensive exposition of analysis and synthesis is to the point:

"Induction in physical science . . . calls in the aid of deduction when hypotheses are formed to explain certain phenomena, and then it is tested by tracing them downwards to what would be their results whether they are true or not. On the other hand, geometric demonstration seeks the aid of analysis as a guide to the solution of its problems. And not only in subordinate points, but as wholes, the two methods supplement each other. There can be no concrete science which does not begin with induction, and there is no complete science unless it ends in deduction."

With a single exception, the gastric fluid, all retrograde changes (catabolism) are characterized by acid reaction, acid urine, acid perspiration, and acid mucus. Therefore, the deduction is warranted that the normal condition incident to anabolism is alkalescence, while acidity is normal as regards catabolism. Not only in the cases mentioned, but in every case the presence of acid in excess must lead to impairment of function, and ultimately to changes in structure. In all such instances, therefore, the therapeutic diagnosis points clearly to the employment of remedies for the purpose of neutralizing acid excess.

This one notable exception, the acid reaction of the gastric juice, by no means invalidates the rule relating to the incidence of alkalescence and anabolism. Rather, it is a factor tending to strengthen the rule, because it is in fact *complementary and conservatory* in maintaining the chemical equilibrium, and besides, the stomach is directly responsible for the formation or development of new chemical compounds by oxidation, deoxidation, or other reactions. In other words, the reaction of the gastric juice supplements acid elimination by utilizing it and at the same time performing important functions in the process of metabolism which could not be accomplished as well by any other or all the other facilities connected with the primary assimilation.

The significance of this chemical deviation, however, cannot be appreciated from the mere didactic statement of its existence, although it is no longer an academic question, awaiting the decision of a jury selected to determine the weight of the argument, pro and con, because the effects are definite and demonstrable by clinical evidence, confirmed by instruments of precision. The clinical as well as the scientific evidence completely supports the hypothesis, so that the conclusion or final decision may be reached by either induction or deduction.

Here we enter an unexplored region. The landmarks outlining the vast territory, as already mentioned, have been standing for generations, yet no one has had the temerity to venture beyond its borders, unless we except Sylvius and his followers of the iatro-chemical sect, who made some tentative discoveries, little understood, nearly two hundred and fifty years ago. Viewed in the light afforded by modern scientific research, this "find" gives promise of rich rewards to the clinician—through its direct influence upon health maintenance. Besides, in the treatment of disease two factors of paramount importance have been added to our therapeutic armentarium—simplicity and efficiency.

Sylvius was an enthusiastic investigator in both anatomy and chemistry. It was he who demon-

strated the fissure separating the parietal from the temporosphenoidal lobes, since known as the fissure of Sylvius. As a chemist he founded the iatrochemical sect, teaching that health depended upon the relation of the fluids, acid and alkaline, their union producing a neutral and milder substance; two kinds of disease were recognized, the result of either acid or alkaline acridity.

Among the followers of Sylvius should be mentioned Glauber, the discoverer of sodium sulphate (Glauber's salt), and Willis, the celebrated English anatomist. To the latter belongs the honor of demonstrating "the remarkable arterial anastomosis at the base of the brain," known as the "circle of Willis"; in addition, he described and named the cranial nerves, and was probably the first to outline the characteristic features of diabetes, so that "Willis' disease" was long used as a synonym.

The latter half of the seventeenth century was notable for the number and character of its medical devotees, and it seems almost incredible that they failed to distinguish the normal alkalescence of the building-up from the normal acidity incident to the breaking-down processes in both animal and plant life.

Having now pointed out the relative functions of acids and alkalies in the human economy and advanced the hypothesis of acid excess leading to injurious effects, even organic changes, it remains to show the practical application of the acid test as a guide in therapeutics; in other words, it is a question of adaptability.

The problem in nutrition, as previously intimated, is a chemical problem, and when a chemical deviation leads to derangement of function and ultimately to changes in structure we must or should endeavor to trace *the effects* by a study of the cause or causes responsible for their appearance, and for this purpose the acid test is immediately available because of its adaptability. Moreover, from a therapeutic viewpoint it is the only reliable test supplying a legitimate and logical basis for medication and treatment. Any other basis, except as expedients for emergencies, must be relegated to the mechanical aspect of treatment, like strychnine, digitalis, and nitroglycerin for heart disease, along with the associated degenerations.

When impairment of the primary assimilation (indigestion) has given rise to lime depletion through acid excess, together with a surplus accumulation of magnesia, there is ample warrant for the hypothesis of *substitution*. And since we *know* that magnesium nucleoproteins lack the property of imbibition (absorption) it is a logical deduction that the "substitution" interferes with function. Here we have induction and deduction in juxtaposition, to show the folly of mechanical treatment in the cases mentioned, the proof being found in the fatalities.

A word should be added here relative to *the effects of chemical deviation*, and again we see the advantages of analysis and synthesis—induction and deduction. While no free magnesium salts are found in the body fluids and tissues, we *do* have carbonates and phosphates; why not magnesium oxide, due to the action of oxidase, a constant product of cellular activity? Tracing this hypothesis downwards—with the known scientific fact that magnesium oxide (calcined magnesia) combines chemically with organic colloids—the complete solution of the question is simplified. That is to say, the abnormal deposits of magnesium involving the nerve structures and interfering with function may be dispersed or caused to disappear, provided the integrity of the colloid structures has *not* been destroyed and the "irritation" has *not* resulted in new tissue formation. To promote magnesium dissociation, treatment must be regulated to meet the special condition presenting. In the class of cases mentioned we have to deal with chemical transformation, the second division of the classification adopted, "The Chemic Problem in Nutrition," Philadelphia, 1912, an alterative being demanded (iodine), together with an appropriate lime salt (carbonate, phosphate, or sulphate), to restore the lacking inorganic proximate principle, but we must also at the same time adopt suitable measures to eliminate or neutralize acid excess. Neither of these measures alone would afford more than temporary relief, but taken together they complete the chemical circle and produce the desired results. Incidentally, it may be remarked, the successful management of this class of cases not only emphasizes the advantages of induction and deduction, but also confirms in no uncertain manner the paramount importance of the acid test in therapeutics.

As a preliminary it will be the part of wisdom to state definitely the effects arising from acid excess, a convenient term to designate a diminished alkalinity of the blood. Taking intestinal indigestion for the purpose of illustration, we know that it means fermentation of the undigested starchy foodstuffs, together with decomposition (probably) of nitrogeneous material which has escaped from the stomach, leading to the production of nitrites, so that to the acid incident to fermentation we have added the acid arising from microbic invasion (multiplication). As a consequence the urinary acidity is increased, the perspiration is more acid than normal and may be augmented, while the output of mucus is greater, along with hyperchlorhydria, all going to show the conservatism of Nature in her efforts to relieve the intestinal embarrassment, an alkaline or neutral medium being essential. Testing the blood under these conditions will show diminished alkalinity, which lessens its oxygen-carrying capacity and interferes with oxidation. Consecutively, we have diminished alkalinity of the lymph, the lymph-glanular apparatus being impaired, which seriously deranges the leucocytic function and permits multiplication and distribution of bacteria and their toxins, not to mention the dangers from cytotoxins.

A critical study of intestinal indigestion as related to magnesium infiltration would be intensely interesting if we could impress upon physicians the deleterious action of magnesium on function and structure by establishing a continuous and complete chain of clinical and scientific facts in support of the hypothesis. The phenomena embraced under the head of fermentation of starchy foodstuffs with decomposition of nitrogenous material escaping from the stomach in a partially digested form and introducing an additional bacterial flora are scarcely sufficient. Clinical observation shows diminished alkalinity of the blood, increased acidity of the urine and perspiration, and also an augmented output of mucus, and coincidently we observe evidences of suboxidation, impaired glandular activity or lymphstasis; leucocytic action is in abeyance and consecutively the multiplication and distribution of bacteria and their toxins direct attention to the fluctuations in temperature, when antiseptics are demanded. The "*missing link*" is to be found in the derangement of

function, due to the presence of magnesium deposits which impede, hinder, or destroy the capacity for the uninterrupted transmission of nerve impulses.

This hypothesis is susceptible of clinical demonstration, for example, in the case of children suffering from intestinal disorders incident to the summer season. After complete failure to secure *permanent* improvement by the routine methods in vogue, Pasteurized milk, intestinal antiseptics, and colonic flushing, the employment of calcium salts (lime) will establish convalescence almost immediately, a few hours being quite sufficient to effect a marvelous change. In this class of cases we *assume* that the acid excess has depleted the lime content, and that it has been replaced by magnesia, so that we have to deal with simple replacement—a deduction. To remedy this chemical deviation we administer lime in sufficient dosage to promote magnesium dissociation according to the law of mass action, first proposed by Guldburg, a Norwegian physicist, confirmed later by Van't Hoff (Studies in Chemical Dynamics), the celebrated Rotterdam chemist, who established it upon a scientifis basis.

*The demonstrable effects of acid excess* are to be found by a study of metabolism—in respect to the absorption, transportation, and elimination of certain inorganic proximate principles, especially lime and magnesium. Thus, the acid excess incident to intestinal indigestion depletes the lime content of the tissues, leading to various nervous symptoms, including anemia and lack of bone-making material. In convalescence, for example, a diet composed largely of crackers is responsible for delayed recovery, and not infrequently relapses may be traced to an unsuitable dietary, which favors or permits lime depletion.

When we understand *the importance of lime salts in promoting function* and maintaining structure, the deleterious effects of lime depletion are patent, even without the coincident or consecutive derangements arising from magnesium infiltration. A demonstration of the injurious effects of magnesia, when replacement or substitution takes place, would add strength to the hypothesis—a question which has to deal with physiological chemistry and relates to the absorption, transportation, and elimination of both calcium and magnesium.

A critical examination will solve the mystery in part at least, but laboratory research must complete the work.

Bone structure consists principally of lime, as does also that of the teeth. Let children subsist upon a dietary deficient in lime, the evidences of impaired nutrition soon become apparent, not only in the lack of bone-making material, but also in the retarded growth and mental development, and the distended abdomen places them in the strumous class.

The fetus has been described as a calcium parasite, and we know something about the peculiar nervous symptoms incident to the vomiting of pregnancy—although clinical observation shows that an appropriate lime salt will cause their complete disappearance in a few days or a week.

When we place this clinical data side by side with the scientific fact that the maintenance of rhythm is dependent upon the presence of calcium salts, reacting with potassium and sodium, we get a slight conception of the important function performed by mineral salts, but the clinical evidence advanced rather upsets the theory that disease is due to "mineral starvation."

As will be shown presently, the chemical deviation in the body fluids interferes with the mineral equilibrium or adjustment. For example, muscular tissue in man contains 1 part calcium to 3 parts magnesium, while the human brain contains but 1 part calcium to 10 parts magnesium. Should this chemical deviation cause depletion of the lime content as claimed, then we should find exactly what our text-books on physiology teach us, namely, that a deficiency of lime in the blood-stream leads to a lack of muscular tonicity and nervous excitability, a symptom-complex which is characteristic of neurasthenia. By deduction, therefore, the corollary follows that calcium is curative in neurasthenia, although it does not cover the vital facts relating to substitution or replacement by magnesium which impedes, hinders, or destroys the capacity of the nerves for the uninterrupted transmission of impulses.

*Calcium depletion involves also the integrity of ferments.* Physiologists tell us that without a proper supply of calcium the fibrin ferment is defective, which interferes with the coagulation of the blood; other unorganized ferments (digestive ferments) suffer in like manner. We notice these clinical effects in the treatment of various disorders, anemia, and diathetic disorders, and notably during convalescence from acute diseases. The defective leucocytosis in all diseases, and particularly in general debility, supplies additional evidence that lime depletion inhibits function. The absence of lime, therefore, becomes the pivotal factor in anemia with deficiency of hydrochloric acid—and may be the "missing link" in the case of cancer. And here should be mentioned the reports emanating from London, relating to the antidotal action of potassium salts in cancer, as reported by Dr. Forbes Ross. A theory is advanced that cancer is due to diminution of potassium salts, "an exhaustion of a natural quality of the body possessed by epithelial cells." Potassium citrate or bicarbonate is employed internally, and a solution of the phosphate locally, by means of the electric current. My impression is that this method, while it develops certain favorable points, is still incomplete. The internal medication, the well-known "neutral mixture" (liquor potassii citratis) is effective in promoting alkalescence of the body fluids; the local use of potassium phosphate possesses distinct advantages, owing to the fact that all potassium salts act as protoplasmic poisons at the points of elimination (Bartholow). (According to Beneke, potassium phosphate is *essential* to the formation of blood corpuscles.) We can understand how the liberation of potassium in the tissues may act as a protoplasmic *stimulus*, while the acid radicle unites with calcium, and it is not necessary to dwell upon the peculiar advantages of calcium phosphate. In addition to its nutrient properties, if given in sufficient quantity, it promotes magnesium dissociation, so that this new treatment of cancer hinges upon two of the three cardinal principles of the proposed classification—it aims to neutralize acid excess and promote magnesium dissociation.

It should be added that the presence of lime exercises an important influence upon fat metabolism, because it promotes function, while the substitution of magnesia hinders the transportation of starch, and besides, we have clinical evidence that it seriously interferes with the glycogenic function of the liver.

Finally, it will be in order to note the association of calcium and phosphorus; although acting in com-

bination as well as separately, they must be regarded as complementary, and with an unsuitable dietary there is loss of phosphorus as well as lime depletion. Thus, in the case of the experiment with the cracker diet *the daily loss of lime* incident to the intestinal indigestion set up was 17.87 grains, the *daily loss of phosphorus* 11.51 grains, while the *loss of magnesium* was but 2.16 grains. The proportionate loss of magnesium is 11.23 grains; hence, there is substitution.. Interpreted, this means that intestinal indigestion so interferes with function that there is depletion of certain inorganic principles (lime and phosphorus) out of proportion to magnesium depletion; and assuming that this is due to an excess of acid, the logical deduction follows that the chemical deviation is responsible. Hence, rational treatment should aim to restore the chemical and also the mineral equilibrium.

*Mineral depletion* is well illustrated in the accompanying tabulation, covering an experiment in metabolism, the dietary being limited to crackers and water. In the adaptation, grains have been added to show the metric equivalent, taking 15.43 grains as the equivalent of one gram; the explanatory details follow:

"This experiment was begun at 7 A.M., June 3, 1906, and continued three days. In order that the bodily condition of the subject should be as nearly as possible the same as in the second experiment, the diet of the three days preceding the third experiment was the same as in the first experiment, viz., 450 grams of crackers and 1,500 grams of milk per day.

"The weight of the subject (without clothing) was approximately 62.7 kilograms (138 pounds), at the beginning, and 61.8 kilograms (136 pounds), at the end of the experiment. The initial weight was therefore practically the same in this as in the second experiment, and the loss of 0.9 kilogram during the three days was probably due as largely to the hot weather as to the deficient fuel value of the diet.

"The daily diet consisted of 450 grams of the same lot of soda crackers as were used in the first and second experiments, with an average of 1200 grams of distilled water per day. The crackers supplied 43.9 grams protein, 44.7 grams fat, and 339 grams carbohydrates, the total fuel value being 1930 calories."

The average daily income and outgo of mineral constituents an dnitrogen are shown in the accompanying table.

By way of comment, the authors say: "During this experiment the food did not become so distasteful as during the second, but there was some lack of appetite and at times a slight feeling of fullness and thirst after meals. There was also in this, as in the second experiment, a slight tendency toward looseness of the bowels."

Special attention is directed to the evidences of intestinal indigestion, "lack of appetite," with "a feeling of fullness and thirst after meals;" but the effects, in the form of lime depletion, were "conspicuous," simply because the lime being the stronger base, it combines more readily with the acid than magnesia. Hence, the preponderance of lime depletion signifies the substitution of magnesium, and since magnesium nucleoproteins lack the property of imbibition, it follows that magnesium infiltration hinders tissue change and tends to impairment of function. In other words, lime depletion incident to acid excess results in chemical transformation, the organized nucleoproteins being changed into magnesium nucleoproteins, which interferes with function and may produce or give rise to death of the cells.

TABLE SHOWING MINERAL DEPLETION—CRACKER DIET*

| Kind of Material | CALCIUM OXIDE | | MAGNESIUM OXIDE | | PHOSPHORUS | | NITROGEN | |
|---|---|---|---|---|---|---|---|---|
| | Grams | Grains | Grms | Grains | Grams | Grains | Grams | Grains |
| Food per day: | | | | | | | | |
| Bread (crackers)... | .126 | 1.94 | .079 | 1.22 | .401 | 6.19 | 7.02 | 108.32 |
| Distilled water..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total daily income. | .126 | 1.94 | .079 | 1.22 | .401 | 6.19 | 7.02 | 108.32 |
| FECES: | | | | | | | | |
| Total for three days. | 3.690 | 56.94 | .379 | 5.86 | 1.355 | 20.91 | ..... | ..... |
| Average per day... | 1.230 | 18.98 | .126 | 1.94 | .452 | 6.97 | (.70) | (10.80) |
| URINE: | | | | | | | | |
| First day (June 3-4) | .062 | .96 | .086 | 1.33 | .986 | 15.21 | 10.64 | 164.17 |
| Second day (June 4-5)..... | .044 | .68 | .095 | 1.47 | .622 | 9.60 | 10.46 | 161.40 |
| Third day(June 5-6) | .056 | .86 | .098 | 1.51 | .476 | 7.34 | 9.77 | 150.75 |
| Total for three days. | .162 | 2.50 | .279 | 4.40 | 2.084 | 32.16 | 30.87 | 476.32 |
| Average per day... | .054 | .83 | .093 | 1.44 | .695 | 10.72 | 10.29 | 158.77 |
| TOTAL OUTGO per day | 1.284 | 19.81 | .219 | 3.38 | 1.147 | 17.70 | 10.99 | 169.57 |
| Loss per day..... | 1.158 | 17.87 | .140 | 2.16 | .746 | 11.51 | 3.97 | 61.26 |

*Adapted from the Monograph, "Calcium, Magnesium, and Phosphorus in Food and Nutrition," by Henry C. Sherman, Arthur J. Mettler, and J. Edwin Sinclair, Department of Chemistry, Columbia University, New York. Washington, D. C., 1910.

In the case of intestinal indigestion, therefore, we are confronted with *three distinct conditions or deviations from normal*, namely, (1) Impairment of the digestive capacity; (2) Acid excess, shown by the "tendency to looseness of the bowels;" and (3) Magnesium infiltration.

The corollary relating to treatment then is a logical sequence: (1) Restore the digestive capacity; (2) neutralize acid excess; (3) promote magnesium disassociation.

A convenient and reliable method for determining excessive acidity is to be found by testing the salivary secretion with blue litmus paper, or by testing the reflexes, the knee-jerk, for example.

It will not be out place in this connection to point out the serious disadvantages attending medical treatment, and particularly convalescence, when the dietary is not properly "balanced" as regards lime and magnesia. At the same time, it is pertinent to mention that the "sloppy" dietary so popular at the present time, may be responsible in a measure for much of the prevalent illness—especially diseases of the nervous system, the goal in disorders of nutrition.

*Other factors intimately connected with this study* relate to the daily average intake of acids, sulphuric and phosphoric, in the food eaten; the daily intake of chlorine, and also the daily average intake of lime and magnesia, together with the variations according to the food selected, but I have elsewhere ("The Chemic Problem in Nutrition," Philadelphia, 1912) discussed these questions in detail, covering substantially all the ailments in which this chemical deviation is the essential element, the line of demarcation between health and disease. When it is stated that these chemical changes or transformations illuminate and make plain and comprehensible the pathology of arteriosclerosis, neuritis, neuralgia, and neurasthenia, the intrinsic value of the acid test in therapeutics must be apparent. Add to this, diseases of children, in-

fectious and non-infectious, and we begin to grasp the significance of its importance in solving the chemical problem in nutrition—because *it makes for simplicity and efficiency.*

1305 Arch Street.

## PRELIMINARY REPORT OF PERSONAL EXPERIENCES WITH THE FRIEDMANN TREATMENT OF TUBERCULOSIS.*

By GEORGE MANNHEIMER, M.D.,

NEW YORK.

In making this preliminary report I am prompted by the following reasons: (1) I believe that every one who has had experience should publish the facts. (2) I believe that some colleagues might need information on the subject, coming through the accredited channels, to guide them when asked by patients as to the advisability of taking this treatment. (3) In some of my cases the treatment with the Friedmann vaccine is finished. (4) Innumerable premature misleading statements have been given out to the press from the Friedmann camp for advertising purposes, and the man has so conducted himself as time has gone on that he forced every one who has come in contact with him to assume the defensive.

You will remember that they succeeded, by their newspaper campaign, in creating the impression among the public, that he was not given a fair trial on account of professional jealousy. Our tuberculous patients furthermore were made restless and wanted information as to this much vaunted "sure cure"—information to which they were certainly entitled. A number of well-known phthisiotherapists came from distant parts of the country to gather this information at first hand for the benefit of their patients. They and all of us who took the matter seriously were guided by the knowledge that the idea on which this treatment is based is perfectly sound, comparable to the active immunization against smallpox by cowpox, or to the hydrophobia treatment. To quote Theobald Smith, "The use of living virus is the most certain and most economical way of calling for a maximum output of antibodies." This idea had been elaborated and carried out long before Friedmann, and by men of infinitely greater attainments. Of American investigators I mention Trudeau, de Schweinitz, Pearson and Gilliland, Webb, Williams, Barber and Dixon. We had sincerely hoped for a decided progress in the treatment of tuberculosis, which we sorely needed. Judge for yourself, from what I am going to say, whether this has been vouchsafed us by Friedmann.

Eighteen patients were injected by him under my supervision; one on March 6, and 17 on March 8—that is, now about eleven or twelve weeks ago. Twelve have tuberculosis of the lungs, one has tuberculosis of the lymphnodes, two have tuberculosis of kidney and bladder, and all these were injected intramuscularly; two have tuberculosis of the joints, and one has tuberculosis of lung and joint, and all three were injected both intravenously and intramuscularly.

Case I. Married woman, 40 years of age; 5 feet 4 inches in height; weight 156 pounds; under observation 4 years; sick 14 years; tuberculosis in family; climatic treatment; 2 courses of tuberculin; has the usual symptoms, but never suffered much; never hemorrhages; practically afebrile. Marked shrinkage of left upper lobe, with cavity, and very marked pleuritic thickening over left lobe posteriorly. Feels and looks well; attends to household duties; sputum very scanty but positive in summer, 1911; not since. Selected because stationary. Had a slight stich reaction at the site of injection; very little local infiltration, which has disappeared long ago. Friedmann thinks she has improved so much that she needs no further injection for an indefinite period.

Even granted that there were an improvement, that is not sufficient. Since the inventor has called his remedy "curative and protective," we had a right to expect at least apparent cures such as we have accomplished in a fair proportion of cases right along. We are justified furthermore in expecting permanent cures, *e.g.* absence of relapses. But for that, in any of the cases reported so far, the time is too short.

Result of this case: There has been no change either way. She has had periods when she also felt perfectly well and weighed 7 pounds more. Lately has occasional uneasiness and fluttering in the heart region and tachycardia, no doubt on account of the proximity of the lesion to the pericardium.

Case II. Man, 34 years of age; under observation 9½ years. Pulmonary tuberculosis 12 years or more. In December, 1903, weighed 123½ pounds; 5 feet 3 inches; broad chest; had infiltration of right apex with bacilli in sputum, and slight subjective symptoms; improved promptly under hygienic medicinal treatment, always keeping at his work. Received injections of tuberculin from January to March, 1904, his weight increasing 13 pounds. Not seen again until May, 1908, when he developed vasomotor rhinitis, diffuse asthmatic bronchitis, fever, loss of flesh, and dry left basal pleurisy. Had regained his former good condition by December, 1908. Passed by life insurance in 1909. In 1910 weighed 155 pounds. In 1912 much chest pains off and on; always at work in a cigar store; infiltration and shrinkage of right upper lobe and apex of lower lobe, difficult to detect on account of compensatory emphysema; no bacilli. Injected to help along natural healing. Slight stich reaction; local infiltrate, size of a cherry, still persisting after eleven weeks; skin pointing red. Punctured on May 25, and about 5 drops of thick pus evacuated; on staining cells mostly polynuclear, few lymphocytes; no organisms of any kind. Cultures on ordinary laboratory media, at 37 degrees C. after 48 hours sterile.

Friedmann says: Second injection indicated probably in 4 weeks. Result: No change.

Case III. Married woman, 37 years of age; 5 feet 1 inch; 154 pounds. Came from out-of-town for this treatment, beginning of March, since which time I know her. Pulmonary tuberculosis for 8 years. One aunt died of tuberculosis. Was always thin, and subject to colds. Probably acquired the disease by sleeping in a room formerly occupied by a consumptive in a summer resort where she went to recuperate from strain of caring for her troublesome baby. Had the usual signs, fever, sweats, cough, expectoration, hemoptysis, and went down to 87 pounds. Much climatic treatment, and repeated courses of tuberculin. Best weight 175 pounds; March 4, 154 pounds.

Consolidation, massive shrinkage and pleuritic thickening of left upper lobe and left base; induration of right apex; has the best medical care and enjoys all comforts of life; looks and feels well, but still coughs and expectorates about 2 ounces of sputum daily, with bacilli; temperature labile. Injected March 6, and advised by Friedmann to drink a pint of cream a day to facilitate the work of the vaccine. This is the only instance in which he gave advice of any kind. I consider it bad advice in this particular case, because the patient had the limit of adipose commensurate with her well-being. She tried cream for a week, but had to give it up of her own accord. Two days after injection an extravasation appeared at the point of injection, and a slight induration the size of a lima bean. Two weeks later this increased to the size of a plum, soft in the center and tender; the skin red. Patient elated and buoyant; left town. April 25 (7 weeks after the injection), report from her family physician, "Infiltrate broke down and discharged large quantities of pus." Report of May 14. "There is a sinus about one inch deep, leading into a pocket or cavity, which formerly contained pus.

*Read before the Metropolitan Medical Society May 27, 1913.

Opening in skin is oval, ½ by ⅛ inch, and is in the center of a slight depression. Skin around opening has a bluish tint. Both the sinus and abscess cavity are clean and practically free from secretion at this time. About ⅛ inch from the sinus there is a soft spot on a slightly hardened base, with skin slightly blue, which has the appearance of going to suppurate. Inguinal lymphnodes on that side not enlarged. Bacteriological and pathological report has not yet been received. Patient has lost her buoyancy, and is in the same condition as before.

What is the cause of this unusually large abscess? Have the previous frequent administrations of tuberculin anything to do with it? Was it due to puncturing of a vein and admixture of blood with the vaccine? Friedmann does not take precautions to avoid the veins in giving his so-called intramuscular injection. Was the dose too large? All acid-fast bacteria produce abscesses at the site of injection when a certain dose is reached, due to the irritation of their waxy substances which prevent absorption of the bacterial proteids. As I understand, Friedmann uses sterile water as a menstruum, with certain additions. He scrapes off loopfuls of his culture and weighs the scrapings. These he adds to the diluent, and then he filters, using the first portion of the filtrate for intravenous, and the second, the less concentrated, for intramuscular injections. We standardize our vaccines by counting the number of organisms to the cubic millimeter. I doubt whether his method of standardization is more accurate. Résumé: No improvement, but troublesome inuses and infiltration in gluteal region.

Case IV. Girl, 21 years of age, a patient of Dr. Junger. Pulmonary tuberculosis for 8 years. Was then in a sanatorium; improved, went back to factory work, and kept at it with short interruptions. Far advanced, principally left-sided process, which has been stationary for years. 114 pounds; 5 feet. Injected March 8. On the 13th, local induration, size of a silver dollar, red and tender. This broke down April 4 (one month after injection), and discharged pus, which was sterile, on staining; closed on the next and reopened on the following day. April 7, deep induration, the size of a small apple; skin red to the circumference of a 50-cent piece, containing a small sharply cut round hole discharging pus. Patient feels well, coughs little, and expectorates less than half an ounce of sputum. Early in May, when the abscess had closed, but infiltrate still existed, more cough and expectoration, which is difficult to raise, fever, chest pains, loss of weight. Result: Patient is worse. I would not advise a second injection by the Friedmann method.

Case V. Man, 40 years of age, bookkeeper. Pulmonary tuberculosis for over 4 years; under observation since March; 5 feet 8 inches in height; 170 pounds in weight; good chest. Very moderately advanced left-sided lesion. Had tuberculous cervical lymphnodes removed two years ago. Otherwise never sick much; good eater; heavy smoker. No subjective change after injection. Five weeks later had first hemoptysis of his life. Local infiltrate, then the size of a pea; weight slightly decreased. Not examined since April 15. Result: Absolutely negative. Process certainly not checked.

Case VI. Farmer, 38 years of age, came to see me with his family physician for this treatment early in March; youngest of ten children; 6 feet in height; weight 125½ pounds; thorax poorly developed. Pulmonary tuberculosis over 3 years; much climatic treatment, also tuberculin. Left lung shows moderately advanced, right apex beginning disease. Temperature 101°; pulse 116; faint trace of albumin and few hyalogranular casts; slight infiltration of epiglottis. Injected March 8. The same night—without the knowledge of myself and his physician—he traveled approximately 2,000 miles, got married, and returned with his wife. Expressed himself as feeling better, but developed a small periprocitic abscess. After his family physician left he was put to bed and received proper care and medication. Process in lungs progressed under the form of caseous pneumonia, infiltration of epiglottis increasing and left arytenoid became swollen. Had a good infiltrate at site of injection which had long disappeared, when Friedmann examined him again on May 14 and deferred the second injection for two weeks.

This patient has had such confidence in the Friedmann vaccine, that he married on the strength of the first injection. The matrimonial excursion did him some harm, but this was in a way counterbalanced by the faithful care which he received from his bride. Much more was he harmed by the dilatory tactics of Friedmann, who repeatedly postponed seeing him and others, to determine whether a second injection was indicated. The patient was thereby kept in constant suspense and unrest. Friedmann, to my repeated promptings, always replied that he had not taken any money from these patients and would see them in time. He had indeed refused the fee offered, and that fact alone seemed to him sufficient to relieve him from all further duty and responsibility. When he at last was prevailed upon to see the patients, this particular one was found to be ready for the second injection, which was, however, arbitrarily postponed for two weeks. He immediately left the city, greatly disgusted with Friedmann's ways. The patient was ripe for a second injection at least two weeks before he was seen by Friedmann and put off. The local infiltrate had completely disappeared, and he was getting worse. Friedmann says, Reinject under such conditions. Do not reinject as long as infiltrate remains unabsorbed, for fear of setting up anaphylaxis. When the infiltrate has disappeared, but the patient keeps on improving, you can reinject or wait; there is no hurry. The disregard of his own indications makes the neglect in this case the more flagrant.

Now I relate four cases of pulmonary tuberculosis which came under observation in March, and which gave about identical results.

Case VII. A showman, 28 years of age; the youngest of ten children; sick much; 6 feet 2 inches in height; weight 157¼ pounds. Three years ago rectal fistula; then the usual pulmonary signs; short sanatorium treatment; many hemoptyses; sub-febrile, continuous tachycardia. Three and one-half weeks after injection hemoptysis lasting ten days. When reexamined May 10 had lost 7 pounds, but felt fairly well. Friedmann found deep infiltrate, the size of a small cherry, and postponed second injection for four weeks. I took my time and examined patient in various positions for remnants of infiltrate, but found none. Other physicians had found none some time before. The patient, whose funds had become exhausted while waiting, took matters into his own hands, procured the second injection in some other quarter, and left town.

Case VIII. Man, 30 years of age; height 5 feet 9½ inches; weight 139¾ pounds; the youngest of eight children. Formerly excessive smoker and moderate drinker; heart inclined to be rapid; frequent tonsillitis; sick three years; at first not diagnosed. Main symptom dyspnea; fingers clubbed; liver slightly enlarged; trace of albumen. Ten days after injection expressed himself enthusiastically improved; buoyant, breathing freer, expectorating more and easier; subscapular pain gone; appetite much better. But improvement did not last. When reexamined, subjective condition fair, but disease advanced and still spreading. Although no infiltrate present was put off. Received second injection May 26. To-day, 26 hours after injection, infiltrate size of marble, very tender, skin bright red; looks as if it were going to suppurate. Was told to come for third injection in five weeks.

Case IX. Man, 26 years of age; height 5 feet 9¼ inches; weight 130 pounds; the youngest of five children. Always thin and much sick; chronic nasal catarrh; large perforation of septum; a few cervical and both epitrochlear lymphnodes enlarged; Wassermann negative. Disease apparently began 1909, while drumming in the Gulf States; diagnosed as malaria. Some amateur climatic treatment. Perirectal abscess last year. Advanced left-sided process. Ten days after injection no local infiltrate, but coughs looser and more spread out over the day. Four weeks after injection old peri-rectal abscess opened again. Sub-febrile. May 14 reports to Friedmann as feeling fairly well; infiltrate, the size of a marble; to be reinjected in two or three weeks. Was, however, reinjected

on the 24th, ahead of time, although he coughed up a little blood on the 22d.

I had heard Friedmann say that he would not inject any one who had a hemoptysis within a week. But either his statements have to be taken with a large grain of salt, or he does not lay much stress on that particular point—or else this patient was a special favorite. As he himself tells me, he is the brother of a newspaper correspondent who had written up Friedmann before the latter came to this country.

These three patients were up and about as they pleased. They tried to manage their own cases, and being of the erethic or hyperthyroid type, do not offer a good prognosis, unless they submit to strict régime.

Case X. Man, 28 years of age; teacher; sick 4½ years; a wanderer in search of proper climate; height 6 feet; weight 148¾ pounds; highest 188 pounds; clubbed fingers; intestinal disturbances, formerly constipation, now tendency is diarrhea. Very amenable. Put to bed in hospital; continuous slight fever. Although lung condition did not progress, attacks of diarrhea reduced his weight by 6 pounds. May 14 Friedmann felt infiltrate, the size of a pea, and put him off for five weeks. I am positive that Friedmann felt something in a place that was not the site of the first injection. The patient, whose funds were running low, took a second injection in another quarter, on his own responsibility, and left town. He stood the trip to his home in Wisconsin badly; had high temperatures and night sweats. The result in these four cases is so far unfavorable.

Case XI. Physician, 46 years of age; sick since 1907. Tuberculosis of left apex. Careful climatic and tuberculin treatment. In active practice since 1908. Last year fresh cold; feels well; occasional pleuritic pain. Wanted the injection to prevent relapses. After injection chest pain gone, cough less; gain of 2 pounds. At the end of April caught cold again; coughs and expectorates more and does not look as well as before. But objectively process is latent. Result: Negative; is disgusted with Friedmann's methods.

Case XII. Man, 27 years of age, lawyer; height 5 feet 11½ inches; weight 136 pounds on November 21, 1912. Subject to colds the last three years; losing weight and strength. First definite sign, hemoptysis in winter of 1912, repeated several times since. Mild infiltration of both apices, active. Put to bed, and under strict hygienic-dietetic medicinal régime; gained 8½ pounds and lost all signs of activity. After two weeks in Lakewood, N. J., where he gained two additional pounds, was allowed to go to the office. Caught cold February 21, had more cough and expectoration, pain in right chest, fever and sweats, all of which disappeared within three days. March 2d, slight oppression in chest and occasional night sweats; sputum scanty, no bacilli. Injected March 8. On March 11 again the short, sharp pain in right lower chest. March 18 reports himself feeling stronger. March 25 pain in right lower chest and distinct pleuritic friction over right lower lobe posteriorly; 147¾ pounds, the highest weight since beginning of illness. April 21 reports by letter. Laid up in bed since end of March with what his physician called bronchopneumonia, with severe hemorrhages, fever, and appearance of bacilli. Not examined by me since March 25. Apparently does not want the second injection. Résumé. The spread of the disease cannot be attributed to the vaccine, but it certainly was not checked by it.

Case XIII. Man, 30 years of age, collector; tall and well nourished; weight 178 pounds. Tuberculosis of kidney and bladder. Sick since 1905; difficult to diagnose at first. Many operations. July, 1908, left kidney removed; but old symptoms of burning, frequent micturition, pus, shreds and tubercle bacilli in the urine returned and keep up in varying intensity. At work. Cystoscope shows region of left ureter ulcerated. January 8, 1913, left ureter removed. Injected March 8; no improvement; infiltrate broke down and discharged a little pus.

Case XIV. Man, 23 years of age, hospital orderly. Tuberculosis of kidney and bladder; left kidney removed four years ago; still burning, pollakiuria, and mycturia in varying intensity; at work. Had good infiltrate, which still persists slightly; no improvement; tubercle bacilli still in urine.

Both of these patients are supposed to receive another injection in a few weeks.

Case XV. Boy, 4¼ years of age, a patient of Dr. Sam Kutscher. Tuberculosis of cervical lymphnodes since three years. One group had broken down and been extirpated; also adenoids and tonsils removed; chain of lymphnodes along left sternomastoid, largest the size of a small marble; discrete, moderately hard. Ten days after intramuscular injection, infiltrate the size of a walnut, bluish-red, soft in the center. This opened on April 15 and discharged pus; closed and opened again. Boy's general condition always good; no change in lymphnodes. Friedmann calls them fibrous and does not think they can be further influenced by his vaccine.

Case XVI. Boy, 9 years of age, a patient of Dr. E. Oppenheimer; under treatment two years for tuberculous coxitis with dislocation. Began three years ago gradually with pain in hip and limping; six months later dislocation already present. Traction for six months; then short Lorenz plaster-spica, with which he walks around; lungs clear; 45 pounds. *X*-ray shows marked destruction of acetabulum and ileum; head and neck of femur gone; greater trochanter 2 inches higher than on the healthy side; little motion; only slightly sensitive; no abscess. Marked general reaction from intravenous injection; no change in joint condition. Friedmann wanted the plaster-spica removed because according to his notion it would interfere with the circulation of the antibodies. But as the femur will not stay in place without support, this was out of the question.

Case XVII. Man, 24 years of age, butcher; a patient of Dr. Sam Kutscher. Slight kyphoscoliosis. One sister died of tuberculosis. Pulmonary tuberculosis for seven years. Had three large hemorrhages. After the last one, in June, 1912, went to Liberty, N. Y., and improved very much, gaining 15 pounds in three weeks. Advanced left-sided lung process. Since November, 1912, gradual development of pain, disability and swelling of right knee. Circumference of right knee larger that of thigh and calf smaller than the other side. *X*-ray shows marked atrophy of bones of knee-joint, particularly tibia, fibula, and partella; joint surfaces intact; no distinct bone focus. This lesion is due to toxin action, not actual tuberculous deposit. After simultaneous injection had very severe general reaction. Then felt better for a while. But it is natural that after recovery from a sharp, feverish illness a feeling of well-being should prevail. So far, no improvement in either lung or knee. This is disappointing because in fresh bone lesions prompt improvement was looked for.

Case XVIII. Boy, 16 years of age; tuberculosis of right ankle nine years ago; operated, healed. Since seven years tuberculosis of right knee, treated by fixation, aspiration, hyperemia. Typical case; shortening of right extremity; all measurements on the right side, including the knee, smaller than the left; flexion limited; pronounced tenderness in circumscribed area. *X*-ray marked atrophy of all bones of knee-joint; marked bone erosions of femur and tibia, particularly the outer condyles. After injection sharp, general reaction, followed by less pain and freeer motion. But soon the old condition returned. Second injection May 26. Result: No improvement so far. Subsequent note: May 31, site of last injection painful and tender, infiltrate size of marble. Skin red. Site of first injection, made 12 weeks ago, also red and tender—comparable to the flaring up of a previous cutaneous or intracutaneous tuberculin reaction.

To summarize: In not a single one of these 18 cases was there definite improvement to date, attributable to the vaccine. In some the disease progressed evidently unchecked. In no instance did the temperature return to normal. Five of the 18 developed abscesses, 4 of them small, and one large, as above cited in detail. Excepting this case I could not say that any distinct injury has been done by the vaccine. I cannot determine whether the vaccine hastened the progress of the disease where it has occurred.

I should prefer not to make mention of the man himself, but we cannot dissociate him from his remedy. He is so imbued with the efficiency of the latter that he ignores all other well-established and tried measures. This may be due to an inventor's over-enthusiasm, or to lack of knowledge along clinical lines, a natural result of a career spent principally in laboratories. He does not seem to realize that consumption is a complex disease, in the pro-

duction of which many factors enter, not alone the tubercle bacillus, but also mixed infection, and furthermore also, heredity, environment, occupation, habits, character, financial condition, etc. It is at once evident that a vaccine directed against the harmful effects of the original invader cannot possibly effect a cure unaided.

Friedmann's reexamination of patients consisted in palpating the site of injection and inquiries as to subjective symptoms. He never asked me as to the objective changes. Is that the method of a scientist? I emphasize here again, the underlying idea of the treatment is sound. There may be merit in this or similar vaccines. But for the purpose of applying them to individual cases and utilizing to the fullest extent whatever such merit may be requires a high degree of clinical and special training as well as sound, impartial judgment on the part of the physician who is to administer them or teach others to administer them.

The ambulatory treatment as carried on by the Friedmann institute can never be a satisfactory test.

In conclusion, I cannot do better than to quote the sentiments expressed in a recent paper by one of the foremost immunologists of this country, Theobald Smith: "The medical profession should see to it that vaccine therapy does not degenerate into inconsiderate and reckless experiments on human beings, that it does not create false hopes in hosts of patients, and that it does not originate and end in commercialism and the desire to exploit the weak and unfortunate."

For myself, I will say that it is with profound regret, for the sake of mankind as well as for the sake of medical science, that I have reached these conclusions.

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# THE RELATION OF SYPHILIS TO PROGRESSIVE MUSCULAR DYSTROPHY.

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The actual cause of progressive muscular dystrophy has not been determined; yet the evidence so far accumulated seems to indicate that congenital influences play the most important part in its development. How it is transmitted from parents to children, or why it appears in children without the same disease being present in the parents still remains to be explained.

Having had the opportunity of studying a number of patients afflicted with this peculiar malady, and having found that the blood serums frequently reacted positively to the Wassermann and Noguchi tests, it appeared as if syphilis might have an important etiological relationship, therefore the notes of these cases are recorded.

The dull details of long physical examinations were purposely omitted, for it seemed quite sufficient for our purposes merely to state that we believe the diagnoses were as correct as clinical observations could be, each case was a typical one, without complications.

In the cases examined, the original Wassermann technique was employed with all of its controls, using as the standard antigen an alcoholic extract of syphilitic fetal liver obtained from Laboratorium für biologische Untersuchungen Wissenschaftliche Abt. des Medic. Waarenhauses A. G., Berlin N. W. 6.

To further control the result, each serum was tested out again, using four different antigens with all the controls: (1) Extract of ox-heart plus 1 per cent. cholesterin, Sachs-Rondini; (2) the McKenzie Browning lecithin-cholesterin emulsion; (3) Lipoid from human heart; (4) Lipoid derived from ox-heart; and by a Noguchi test, using again another antigen, the acetone-insoluble, ether-soluble, lipoid from syphilitic fetal liver.

In *no* case was a dystrophy considered positive unless the test with each different antigen gave a clear cut positive result and the same care was exercised in the results with the families of these patients.

Case I. G. M. Male: aged 18: father alcoholic; mother died, cause unknown. One young sister insane. Patient has typical pseudo muscular hypertrophy and positive Wassermann and Noguchi reactions.

Case II. S. Z. Male: aged 15 years: father said to be well; one older brother, two younger brothers and one sister healthy. One older brother and one younger sister died during infancy, cause unknown. Mother was said to have been healthy but at the time patient was four years old she developed right peripheral facial paralysis. Patient has typical pseudo muscular hypertrophy and positive Wassermann and Noguchi reactions. Mother also has positive Wassermann and Noguchi reactions, and still has facial paralysis (Neurorezidive).

Case III. C. R. Male: aged 12: father died of paralysis (character unknown) but before death diagnosis of optic atrophy had been made. Mother was treated for eye trouble, said to have been iritis. Two older sisters healthy; and two younger brothers healthy. Patient has typical pseudo muscular hypertrophy and positive Wassermann and Noguchi reactions.

Case IV. A. P. Female: aged 8: father died of typhoid fever; mother healthy, but did have two miscarriages preceding birth of patient. One younger brother healthy. Patient has pseudo muscular hypertrophy and positive Wassermann and Noguchi reactions.

Case V. K. W. Female: aged 10: paternal grandfather and grandmother living and well; maternal grandmother died at 46 of pneumonia; maternal grandfather died at 76 of nephritis; father was only child and seemed healthy until 39 years of age when he had a breakdown, cause unknown to wife, who ascribed it to overwork; was ill for two years. First three children were strong and vigorous; fourth pregnancy arising during illness of husband ended in miscarriage at sixth month; fifth pregnancy terminated at term in patient. She was healthy until 3 years old and then developed pseudo muscular hypertrophy with positive Wassermann and Noguchi reactions. Subsequent to birth of patient mother had three successive miscarriages.

Case VI. P. S. male: age 9: maternal grandfather died at 41 years of apoplexy; maternal grandmother died at 49 years, cause unknown; father apparently well and mother delicate in appearance, but she has positive Wassermann and Noguchi reactions though clinical evidences of syphilis were absent. Patient had one older brother who died, cause unknown; one younger sister has positive evidence of syphilis (Hutchinson teeth), and positive Wassermann and Noguchi reactions. One younger sister is frail and backward mentally, but her Wassermann and Noguchi reactions are negative. Patient has pseudo muscular hypertrophy and negative Wassermann and Noguchi reactions.

Case VII. G. S. Age 21: parents and two older brothers and four younger said to be healthy. Patient has pseudo muscular hypertrophy and positive Wassermann and Noguchi reactions.

Case VIII. Father died, aged 39, of hemiplegia; mother apparently normal, died, aged 52 years, of heart disease; first daughter positive Wassermann and Noguchi reactions without symptoms; second child, dystrophy, Wassermann and Noguchi reactions positive; third child, positive

Wassermann and Noguchi reactions without symptoms; subsequently mother had two miscarriages.

Case IX. Father positive Wassermann and Noguchi reactions without symptoms; mother had one miscarriage; first child, girl, died age one month; second child, girl, died of meningitis; third child, boy, died of diphtheria, aged one and a half years; fourth child (patient) dystrophy, Wassermann and Noguchi reactions negative.

Case X. Father not examined; mother not examined; first child, boy, positive Wassermann and Noguchi reactions without symptoms; second child, boy (patient), dystrophy, Wassermann and Noguchi reactions negative; third child, boy, positive Wassermann and Noguchi reactions without symptoms.

Case XI. Father alcoholic and insane; mother, history unknown; first child, girl, insane; second child, girl, insane; third child, boy, alcoholic and insane; fourth child, dystrophy, Wassermann and Noguchi reactions not obtained.

Case XII. Father, some venereal disease; mother died young, cause unknown; first child, girl, frail; second child, boy, dystrophy, Wassermann and Noguchi reactions not obtained.

Case XIII. Father, cause of death unknown; mother normal but had five miscarriages preceding birth of patient who has pseudo muscular hypertrophy. Wassermann and Noguchi reactions could not be obtained.

Fourteen additional cases of dystrophy were examined and in each the Wassermann and Noguchi reactions were negative. No information could be obtained about other members of their families.

Of twenty-seven cases investigated, seven (Cases 1, 2, 3, 4, 5, 7 and 8) gave positive serum reactions. In three instances one of the parents (Cases 2, 6, 9) also had positive reactions, and one (Case 2) of these had facial paralysis which might have been due to syphilis. Unaffected brothers or sisters of patients gave positive reactions in three families (Cases 6, 8, 10). Miscarriages were said to have occurred in five families (Cases 4, 5, 8, 9, 13). Boas,[1] Plaut and Rehem,[2] Noguchi,[3] Nonne,[4] and others incline to the belief that the mere presence of a positive and persistent Wassermann reaction in the blood is in itself sufficient evidence of existing syphilis even though signs of disease are lacking. Latent syphilis has become well known, and only recently Longcope[5] has shown that in some apparently latent cases, syphilitic aortitis may subsequently develop. We do not, however, know of an instance in which syphilitic aortitis has been observed in association with progressive muscular dystrophy.

In drawing conclusions from the foregoing facts we feel justified in assuming that six of our cases of myopathy were infected with syphilis, and that it was hereditary, and was therefore existent before any evidences of myopathy had developed. Whether the presence of syphilis is essential for the subsequent development of pseudomuscular hypertrophy or whether in our cases it was merely a coincidence that two distinct and separate diseases were observed we do not attempt to offer any opinion.

We wish to thank each member of the Neurological Staff of the Philadelphia General Hospital and the Medical Staff of the Orthopædic Hospital and Infirmary for Nervous Diseases for permitting us to use the records of their cases, and also the Social Service Department of the Orthopædic Hospital for their invaluable assistance in locating the patients and in completing our records.

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## A NEW CONTAGIOUS GANGRENE IN WHITE RATS.

PRELIMINARY NOTE.

By LEONARD KEENE HIRSHBERG, M.A., M.D.,

BALTIMORE, MD.

The white rats used in the psychological laboratory of the Johns Hopkins University in February, March, April, and May, 1913, have suddenly developed a highly contagious infection that attacks only the feet and legs of the animals. The disease appeared spontaneously in one litter of white rats in January, and soon extended to adjacent cages one at a time by contact until rigid disinfection cut the epidemic down to sporadic outbreaks which are still occurring—May 23, 1913.

This disease—which Dr. J. R. Mohler, Chief of the Division of Animal Pathology of the Department of Agriculture, Washington, tells me is new to him and has never before been described—is characterized by a swelling of the feet and hoofs, which become black and gangrenous and then in many cases drop off. The general health of the rats becomes somewhat affected, they are unable to go through their learning performances, and usually must be killed.

None of them has died and another peculiarity is that the gangrene attacks the hind legs of the rats. Indeed, only in one instance so far has one foreleg become infected with this rat gangrene.

The process begins evidently between the soft tissue of the toes of the rats and spreads thence up into the toes, feet, and legs. It is a typical gangerene with distinct lines of demarkation, but there is an abundance of white fluid pus.

I have isolated the organism which seems to be specific, for when vaccinated into the feet of well rats, the specific gangrene appears. Complete details of the disease and a study of this organism which has been tentatively named gangrenofaciens Hirshbergii, will appear very soon.

1937 Madison Avenue.

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**High Altitudes and Diabetes.**—Dutoit mentions the clinical fact that high altitudes exert a favorable influence on diabetes and adds that thus far no satisfactory explanation of this sequence has been forthcoming. One authority attributed the benefit to chalybeate waters (at St. Moritz), while others give the credit simply to physical exercise and out-of-door life. The assertion has been advanced that mountain dwellers do not suffer from diabetes, and statistics show that in the mountain cantons of Switzerland the number of deaths from diabetes is much below the average. Recently Hoessli and Wanner have each seen in this phenomenon evidence that the rarefied air is a stimulant of carbohydrate oxidation. Hoessli saw a complete recovery of a patient with chronic diabetes. It does not appear that any diabetics have yet been submitted to calorimetric tests, but high altitudes are known to bring about increased oxygen consumption and carbon dioxide elimination.—*Deutsche medizinische Wochenschrift.*

**Diphtheritic Hemiplegia.**—J. D. Rolleston states that diphtheritic hemiplegia is usually of embolic origin; in twelve out of eighteen autopsies embolism has been found. Embolism is probably more common in diphtheria than in any other acute contagious disease, being due, as Marfan has pointed out, to an apical endocarditis. The embolism may be found not only in the cerebral circulation, but in the kidneys, spleen, lungs, and even the abdominal aorta, as in Marfan's case.—*Proceedings of the Royal Society of Medicine.*

# MEDICAL RECORD.

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## THE EARLY DAYS OF MUNICIPAL SANITATION.

IT is reserved for few men to take a leading part in a great reform movement and to witness fifty years later the extraordinary developments of their pioneer labors. The millions of people who enjoy the blessings of modern sanitation and who are frequently too prone to chafe under some of its apparently arbitrary restrictions, never take time to think of the huge difficulties that beset the beginnings of public health work. Almost half a century following the organization of an effective sanitary control of New York City, the citizens of the latter may well pause to take an inventory of its signal achievements in public sanitation and to honor one who laid the broad foundations of its present structure. The people of New York now have the rare opportunity of paying their tribute of gratitude to Dr. Stephen Smith. In the twilight of his years he has written an invaluable narrative* of the health conditions that prevailed in the western metropolis a half century ago. "The City That Was" is an important document in municipal history, an impressive record of the days when grim pestilence stalked unmolested through the streets.

We of the present time can hardly conceive that as late as 1866, the insanitary conditions in New York City were the same as those that had prevailed for two hundred and forty-four years. There was no drainage; the water-supply came from shallow wells contaminated by street, stable, privy, and other filth; the sewerage was primitive; garbage accumulated in the streets; offensive trades such as slaughter-houses were located in close proximity to dwellings; and stagnant pools were scattered throughout the city. To the ravages of the domestic pestilences of smallpox, scarlet fever, measles, and diphtheria, there were added the calamities of typhus fever, cholera, and yellow fever, which came with the high tide of an unchecked immigration. The death rate in New York for the five years preceding 1866 was 38 per 1,000 inhabitants, as compared with only 15 per 1,000 of the present day.

The modern awakening in public sanitation came with the cholera epidemic that devastated England in 1849. The only preventive measures that had been taught up to that time were "flight, fasting, and prayer." The Prime Minister of England when petitioned by the clergy to proclaim a day of "fasting and prayer," replied: "Do works meet for repentance. First make your homes and their surroundings clean and wholesome; then you may with propriety ask Almighty God to bless your efforts at protection against the approaching epidemic."

No heed was paid to this admonition except in one town in the interior of England which reported not a single case of cholera although the latter epidemic ravaged the surrounding communities. The watchword "cleanliness" spoken not by a scientist but by a layman in authority, now became the popular slogan in England, but was not echoed by the people of America until 1866. The decade and a half prior to that date were the years during which Dr. Smith exerted his pioneer efforts in New York City. Typhus brought over by the famine-stricken Irish immigrants brooded in the tenements. There was no Health Department in those days. By the threat of publicity Dr. Smith succeeded in compelling one tenement house owner to clean out a particularly bad focus of disease. The successful outcome of this unprecedented effort, which was backed by the editorial influence of William Cullen Bryant of the *Evening Post*, began the era of reform. The "Citizens Association" appointed a Committee on Public Health. A "Health Bill" was introduced in the Legislature in 1864, but like previous bills of a similar nature this met with defeat through the political influence of the City Inspector who at that time exercised all the health powers in New York. In order to demonstrate to the Legislature the urgent need of efficient municipal health laws, the Citizens Association provided for a thorough sanitary survey of the city. This was organized and supervised by Dr. Smith. The city was divided up into districts, to each one of which a young physician was assigned. House to house visits were made. The results were carefully recorded on maps. In the meantime the Committee on Law drafted a bill. The epoch-making and apparently unprecedented feature of this bill was that the Metropolitan Board of Health was given the autocratic power of creating ordinances without being interrupted by review proceedings or judicial injunctions. This bill was introduced in the Legislature in 1865 and Dr. Smith was detailed to explain its sanitary measures. In a chapter entitled "New York the Unclean," Dr. Smith presents his eloquent plea made before the lawmakers of nearly a half-century ago. This plea consisted of a detailed presentation of the facts recorded and sworn to by the medical inspectors employed by the Citizens Association, together with photographic illustrations which were made by them. The portrayal of the absolute lack of sanitary supervision in a city in which thousands of wretched inhabitants dwelt in the squalor of damp cellars, near which undrained cesspools invited the ravages of pestilence, could not fail deeply to impress the Legislature. But political opposition brought to bear by the City Inspector, whose office would have been abolished by the above law,

*"The City That Was," by Stephen Smith, A.M., M.D., LL.D., Commissioner of the Metropolitan Board of Health, 1868-1870; Commissioner of the Board of Health of New York, 1870-1875. Price $1.25. New York: Frank Allaben, 1913.

again caused its defeat. However, the public were awakened to the need of reform. Health legislation became the prominent issue in the next political campaign, and the following year the "Metropolitan Health Law" became a statute.

Thus triumphed one of the most important movements in modern municipal history. Those of the present generation need not be told of the later outcome of this movement. The volume in which Dr. Stephen Smith has modestly set forth the birth of municipal sanitation in the United States, for New York became an example which other cities soon followed, is a book which all who are interested in public welfare may read with interest and profit.

## CAMPHOR IN THE TREATMENT OF PNEUMONIA.

Pneumonia, called by Osler a self-limited disease against which no method of treatment is of any avail, is, in the experience of very many able and observant practitioners, one of the most amenable to proper treatment, except in the rare cases of massive infection, of all the infectious diseases. Forty years ago James R. Leaming proclaimed the curability of pneumonia by a massive dose, twenty grains and more, of calomel—an early and empirical application of Ehrlich's theory of therapia magna sterilisans. He practised what he preached, for when he himself was attacked with the disease he took calomel—and recovered. Ten or fifteen years later Andrew H. Smith and others demonstrated the value of the salicylates and of creosote carbonate in the specific treatment of pneumonia.

Some years ago August Seibert of this city published a report of a number of cases of pneumonia treated by hypodermic injections of large doses of 20 per cent. camphorated oil, and also gave the results of a number of experiments with camphor injections in rabbits previously inoculated with cultures of the pneumococci. These reports were published in the *Münchener medizinische Wochenschrift*, No. 36, 1909, and in the Medical Record, April 20, 1912. Seibert's observations have been confirmed recently by Leo of Bonn in two communications to the *Deutsche medizinische Wochenschrift*, Nos. 13 and 15, 1913. In the first of these the author says that the experiments thus far made in cases of pneumococcus infection indicate that "camphor has a specific action against pneumonia," and in the second he quotes from Ehrlich to the effect that Böhnke, experimenting on mice in the Institute at Frankfort, had succeeded in curing pneumococcus infection by subcutaneous injections of camphor oil. Iverson also, writing in *Vratch* of January, 1912, reported good results with injections of 20 per cent. camphor oil, and noted that the toxemic symptoms were markedly ameliorated in all cases, even in the alcoholics and in those who finally succumbed. These observations of Seibert, confirmed by workers in Bonn, Frankfort, and St. Petersburg, the favorable results obtained by Wright in the use of mercury succinimide (Medical Record, June 1, 1912) and the earlier successes with creosote carbonate, the salicylates, and calomel should suffice to down the pessimism which so long dominated the therapeutics of pneumonia and other infectious diseases, but which is now disappearing along with the dying school of therapeutic nihilists.

## THE ILL EFFECTS OF SMOKE.

Smoke has been indicted many times since coal as a fuel first came into use, but since manufacturing on a large scale has arisen, the evil effects of a smoke laden atmosphere have become evident. The distressing, dirty, choking fogs which are the bane of London at certain periods of the year are mainly due to the burning of soft coal for domestic use, and conditions almost as bad arising from the same cause exist in most of the cities of the Middle West.

In the *Military Surgeon*, April, 1913, Surgeon J. W. Stoner, U. S. Public Health Service, writes concerning the ill effects of smoke, and as he has lived in Pittsburgh for a year, he knows whereof he speaks. He points out that we are creatures of sunshine by nature and inheritance, and that to be deprived of sunlight is to be denied natural rights. He also traces a connection between a smoky atmosphere and drinking habits, for as he plausibly puts the case, women living in sunless, gloomy homes and attired in somber clothes are also prone to be irritable, to scold and whip their children and to greet their husbands with caustic speech, to become, in short, nagging wives. Now it is well known that no behavior is better calculated to drive a man to a saloon than nagging. Children, too, reared in a depressing atmosphere are dull, apathetic, and even criminally inclined. Not only does smoke injuriously affect the temperament of persons, but by destroying the beauties of nature, it aids in destroying the health and happiness of man.

Stoner adduces numerous statistics to prove that smoke is hurtful to health. Among these the evidence of Dr. Tatham, Medical Officer of Health for Manchester, that the working life of the Manchester people was curtailed ten years owing to the acids in smoke and its carbon particles which injure the lungs. Furthermore, in addition to destroying grass, flowers, and trees, smoke corrodes stone and tarnishes metal. However, there is little need to emphasize the point that smoke is hurtful and disagreeable from all aspects. As Stoner shows, two methods have been suggested for bringing about smoke abolition; first, by using new kinds of fuel, and, second, by improving appliances for burning bituminous coal. He advises that investigations should be made by scientists concerning the feasibility of using various proposed fuels, and in the meantime, while bituminous coal must be burned, laws should be enacted compelling more careful stoking and proper air admission to better equipped furnaces, and in some instances the introduction of smoke-consuming devices.

After all the prevention of the nuisance occasioned by smoke should rest with the health authorities, who everywhere should have power to compel manufacturers and householders alike so to restrict the output of smoke that it will be neither hurtful to health nor a source of discomfort to the public. The abatement of smoke is an important municipal problem.

### Chronic Farcy

This affection in man is notably obscure in character. A patient suffers with chronic invalidism and the frequent appearance of superficial purulent affections along with disease of the osseous and muscular system. The specific *cachet* is very elusive, and one would say at first sight that the man was a chance victim of several coincident affections, based upon a greatly diminished resistance to disease. The subject may or may not have been exposed to horses, and a search for the *Bacillus mallei* may end with negative results. At a recent session of the Royal Imperial Society of Physicians of Vienna (*Berliner klinische Wochenschrift,* May 5) Stein reported one of these mysterious cases. The patient was from Constantinople, and presented at first only serpiginous ulcers on the legs, chronic in course. Along the borders of these sores small pustules were visible. From these pus could be squeezed, but under the microscope none of the familiar pus exciters were seen. The ulcers all healed under ordinary local treatment, after which some of the bones and joints became involved. One of the knee joints filled with pus, which, however, revealed no pus-exciting germs. Some of the bones showed subperiosteal abscesses. Fever was pronounced, diazo reaction was positive. The urinary finds suggested amyloid degeneration of the kidneys. The patient succumbed, and all that autopsy showed was comprehended under ordinary septicopyemia. However, cultures revealed the presence of the *Bacillus mallei,* and the diagnosis was confirmed by animal experiment. Farcy thus considered shows a notable parallelism with swine erysipelas which behaves either as a general sepsis or a local joint affection.

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### Orthodontia and Orthopedia.

More than a few thinkers must have been struck with the resemblance between these two disciplines, and with the propriety of studying them side by side. Yet in book and periodical literature we discover no evidence of such a tendency. The United States is the cradle of both of these sciences, yet what comity has ever existed here between our orthopedic and dental sciences? This omission has been rectified in Germany, for at a recent session of the Berlin Orthopedic Society (*Berliner klinische Wochenschrift,* May 5) a paper was read on orthodontia and was discussed freely by the membership. What, if any, relations exist between poorly implanted teeth and skeletal subdevelopment? The author of the paper, having heard the discussion, closed the latter as follows: The relationship between rickets and dental anomalies has never been finally determined. Patients reach the dentist as a rule much too late for an analysis of the relationship. The common opinion is that "open dentition" is an expression of rickets. The orthopedists and orthodontists should get together to solve the problem. Correct alignment of the teeth, considered as a rule only in connection with youth, is in reality indicated at all ages. The author has endeavored to straighten the teeth of a woman aged sixty. The main point to consider is whether the jaw is still capable of modification. If it be not, the age to cease efforts is about twenty-two or twenty-three. Modern orthodontia has reached such a high state of development that improvement in the alignment of the teeth may be effected at any age.

## News of the Week.

**Bar Friedmann Treatment.**—The Board of Health of New York City, at a meeting held on May 29, adopted a resolution constituting an amendment to the Sanitary Code, the immediate effect of which was the closing of the Friedmann Institute in this city. The adoption of the amendment followed a meeting of the Advisory Board of the Board of Health at which the latter was recommended to take action. The resolution and its preamble read in part as follows: "*Whereas* certain tests of the efficiency and safety of an alleged cure for tuberculosis now being made in this city are now being rendered unsatisfactory, unscientific and practically futile through the insistence of the originator of the alleged remedy on conditions which involve inadequate observations, inaccurate methods of administration and the insistence on secrecy regarding the substances employed in some phases of the treatment, and *Whereas* evidence is already at hand to show that the so-called remedy not only does not fulfil the promises of efficiency and safety under which its use was at first permitted in this city, but on the contrary during its administration many patients have suffered serious and unduly rapid progress of their disease, therefore be it *Resolved,* That the use of living bacterial organisms in the inoculation of human beings for the prevention or treatment of disease shall be and hereby is prohibited in New York city until after full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dosage and administration shall have been submitted to the Board of Health and until permission shall have been granted in writing for the use of the same."

Another of Friedmann's patients died recently, making the sixth to succumb.

**Cartwright Prize.**—Announcement is made of the awarding of the Cartwright Prize of the Association of the Alumni of the College of Physicians and Surgeons, New York, for 1913 to Capt. Edward Bright Vedder, Medical Corps, United States Army, stationed at Manila, for his essay on "Beri-beri." Capt. Vedder is a graduate of the Medical Department of the University of Pennsylvania, Class of 1902.

**Pensions for Rockefeller Institute Workers.**—Pensions for its Members and Associate Members have been provided by the governing boards of The Rockefeller Institute for Medical Research, and have been financially secured by the generosity of Mr. John D. Rockefeller, who has, with this purpose in view, increased the endowment of the Institute by a gift to it of securities amounting to about $500,000 in value. The pension rules which have been adopted provide three-quarters-pay pensions for Members of the Institute retiring at the age of 65 after 15 or more years of service, and pensions of from one-half to three-quarters of full pay, according to the length of service, for Members and Associate Members who retire at 60 years of age. There is also a provision for total disability after ten years of service, and for widows and orphaned children, at one-half the scale upon which Members of the staff are pensioned.

**Honors to Medical Men.**—The list of King's birthday honors, published June 2, contains the names of two prominent medical men. Dr. W.

Arbuthnot Lane, who recently performed two operations on the Duchess of Connaught, is made a baronet; and Professor Edward A. Schaefer, President of the British Association for the Advancement of Science, and well known for his researches in physiology, is knighted.

**New Health Society.**—The Urania Preventorium Society of New York City, organized to work for the prevention and suppression of tuberculosis, was incorporated at Albany, on May 29. The society aims to supply healthful employment to persons with tuberculous tendencies or conditions.

**New Flower Hospital.**—The cornerstone of the new building for the Flower Hospital, New York, was laid on May 29, at Eastern Boulevard and Sixty-third Street. When the building plans are completed the structure just begun will form the north wing of a three-sided quadrangle. It will be a six-story, brick building, and will be used entirely for private patients.

**Typhoid Vaccination Ordered.**—At a recent meeting of the Board of Directors of the Mount Sinai Hospital it was decided that all members of the house staff, nurses, orderlies, laundresses, and attendants, must submit to immunization by means of typhoid vaccine. For the last few years the nurses have been asked to submit to the procedure voluntarily, but only few have done so. It is now compulsory for all the hospital attendants.

**Smallpox on Battleship.**—The discovery of a case of smallpox on board the battleship *Wisconsin* on May 30, while the vessel was at the Philadelphia navy yard, made it necessary to quarantine and vaccinate all the three hundred men of the crew.

**Hospital Addition.**—The new four-story building which has just been added to the Beth Israel Hospital, New York, at a cost of $125,000, was formally opened on June 1. The building has accommodation for eighty patients, and contains operating rooms, an *x*-ray room and a laboratory.

**Medical Graduates.**—Thirty-one young men received diplomas and the degree of doctor of medicine from the Medical Department of the University of Arkansas at the thirty-fourth annual commencement exercises of the university on May 15.

**Faculty Changes.**—The Boston University School of Medicine announces a number of changes in its Faculty. After many years of service, Dr. John H. Payne, professor of ophthalmology, and Dr. Nathaniel W. Emerson, professor of gynecology, have resigned their chairs and have been made professors emeritus. Dr. David W. Wells will succeed Dr. Payne, and Dr. R. Southwick will take the place of Dr. Emerson. Mr. Everett W. Burdett, for some years lecturer on medical jurisprudence, has been made professor of that subject, and the Faculty will be further increased by the addition of the following associate professors: Pathology, Dr. Howard W. Nowell; Diseases of the Chest, Dr. Percy G. Browne; Diseases of the Nose and Throat, Dr. N. H. Houghton; Venereal Diseases, Dr. O. B. Sanders. The postgraduate summer school will be directed for the coming session by Dr. David W. Wells.

**For Medical Education.**—The Trustees of Vanderbilt University of Nashville, Tenn., have recently received from Mr. Andrew Carnegie an offer of a gift of $1,000,000 for the benefit of the Medical Department of the University. Of this sum, $200,000 will be given outright immediately to provide for the erection and equipment of new laboratories for the school, while the remainder will form a fund, the income of which will be used for its maintenance. The only condition of the offer, it is said, is that the direction of the Medical Department be committed to a board of seven members, three of whom must be eminent in medical and scientific work or research.

**Membership in the College of Surgeons of America.**—Since the organization meeting of the College of Surgeons of America, many inquiries have been received as to the method of procedure required to attain fellowship in this organization.

To the fifteen surgeons comprising the Board of Regents, representing territorially all sections of the North American continent, has been entrusted the delicate task of formulating a membership plan, to include the reception of applications for membership and the final election to fellowship in the College of those fulfilling the standard of requirements. The founders of the College conferred upon the Board of Regents almost unlimited freedom of action in carrying out this preliminary work.

While it is true that three classes of surgeons were declared eligible to election to fellowship in the College immediately, the resolutions dealing with each of these classes provided that each individual thus named shall be confirmed by the Regents before he can be formally declared a Fellow of the College.

These three groups include the surgeons and men practicing surgical specialties who have been in the practice of their specialty for a considerable length of time and who are recognized as surgeons of established reputation. They are divided for convenience into three classes: Class A, men who were chosen to organize the College by the Committee on Foundation; Class B, surgeons who are members of one of the fifteen national organizations of surgeons and surgical specialties which are designated as constituent societies; Class C, surgeons of prominence not included in Class A and not affiliated with any of the societies represented in Class B.

For Class D, which will include all other candidates, namely, young men recently graduated in medicine who wish to practice surgery as a specialty, and men who have been in the practice of medicine for a longer period and are desirous of developing a surgical specialty, a special committee of the Board of Regents is carefully preparing a standard of requirements for admission, and this plan will be presented for the approval of the Governors at the November meeting.

Of the A, B, C and D classes of members, the first three classes will be subject to consideration during the next six months, and while the men in these classes have been declared eligible to immediate membership, the Board of Regents has taken measures to subject these names to the same careful scrutiny that will be employed in the selection of members from Class D.

No man will come before the Board of Regents for final election to fellowship until the applicant has made a formal statement in writing that he is desirous of becoming a member, such application to be accompanied by the membership fee.

Surgeons representing Classes A, B and C will receive notice that they are eligible under the by-laws, and on request will be sent blanks upon which they can make their applications.

Surgeons who come under Class D, and in this class is included all legalized practitioners who are desirous of becoming members, will be furnished blanks by the Secretary upon which they may make their applications, which in due time will be carefully considered by the Board of Regents.

It is the desire of the present Board of Regents to establish the precedent that any applicant for fellowship in the College will receive the fullest consideration.

Finally, when a surgeon's original application has been passed upon favorably by the Committee on Credentials, he will be sent a fellowship blank upon which he may make his declaration of acceptance of the principles of the College, together with such other data and information as the Regents may require as a matter of record. The applicant will then be duly elected by the Board of Regents a Fellow of the College of Surgeons of America.

**English Birth Rate.**—During the first quarter of 1913, there occurred in England and Wales, 216,330 births. This total corresponds to an annual rate of 23.8 per thousand of population, which is the lowest on record for any first quarter of the year.

**Gifts to Charities.**—By the will of the late Mrs. Caroline Neustadter of New York, a large number of charities are benefited. Mount Sinai Hospital receives $100,000; the Jewish Children's Sanitarium, $50,000; the Montefiore Home and the New York Infirmary for Women and Children, $10,000 each; and St. John's Guild and the Ladies' Auxiliaries of the Monefiore Home and Mount Sinai Hospital, $5,000 each. The Children's Hospital and the Women's Hospital of San Francisco also receive $5,000 each. In addition to these bequests the sum of $1,000,000 is set aside for the foundation and maintenance of a vacation home for the poor, convalescents, and persons in delicate health, to be known as the Henry Neustadter Home.

**Obituary Notes.**—Dr. Eugene F. Hoyt of New York, a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1870, and a member of the American Institute of Homeopathy and of the New York State Homeopathic Medical Society, died, after a short illness, in Newark, N. J., on May 26, aged 66 years.

Dr. John A. Conrad of Robesonia, Penn., a graduate of the Long Island College Hospital, Brooklyn, in 1867, and formerly a member of the Pennsylvania State Legislature, died at his home on May 12, aged 70 years.

Dr. Abel S. Cloud of Kiowa, Kan., a graduate of the University of Louisville Medical Department, in 1868, died at Cherokee, Okla., on May 10.

Dr. Peter A. Sheley of Louisville, Ky., a graduate of the Medical College of Ohio, Cincinnati, in 1876, died at his home, after a long illness, on May 12, aged 62 years.

Dr. George W. McElvern of Detroit, Mich., a graduate of the Baltimore University School of Medicine in 1885, died at his home on May 11, aged 53 years.

Dr. Solomon Wexler Laub of Las Cruces, N. M., a graduate of the Medical Department of the Tulane University of Louisiana in 1906, and a member of the New Mexico State and Dona Ana County Medical Societies, died at Natchez, Miss., after a long illness on May 11, aged 34 years.

Dr. Joseph Tomlinson of Bridgeton, N. J., died at Philadelphia, on May 19 at the age of 58 years. He was graduated from Williams College in the Class of 1875 and from the College of Physicians and Surgeons of New York in the Class of 1878. He was surgeon to the Bridgeton Hospital and a member of the Board of Education. He was a member of the Cumberland County Medical Society, the New Jersey State Medical Society and the American Medical Association.

Dr. Reuben H. Huddleston of Miami, Fla., a graduate of the Rush Medical College, Chicago, in 1872, and a member of the Florida State and Dade County Medical Societies, died suddenly at his home on May 16, aged 74 years.

Dr. George De W. Green of Holt, Mich., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1885, died at his home after a short illness, on May 24, aged 65 years.

## Obituary.

### FREDERICK FORCHHEIMER, M.D.

CINCINNATI.

Dr. Forchheimer, who died in Cincinnati on Sunday of this week, was widely and well known as an acute diagnostician and skilful medical practitioner. He was born in Cincinnati, September 25, 1853, and studied at the Universities of Strassburg and Würzburg. His medical education was obtained at the College of Physicians and Surgeons, New York, where he was graduated in the class of 1873, when less than 20 years old. He was for twenty years Professor of the Theory and Practice of Medicine in the Medical Department of the University of Cincinnati. He was a prominent member of the Association of American Physicians and served as its president in 1910-11. He was the author of many books and contributions to periodical literature and had just completed editing a new work on the Treatment of Disease.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

ARTERIOSCLEROSIS—NEW PSYCHOLOGICAL LABORATORY—DUCTLESS GLANDS—HEALTH INSURANCE CIRCULAR—SIR C. TUPPER—SIR J. PORTER—OBITUARY.

London, May 16, 1913.

The treatment of arteriosclerosis and high tension was discussed at the Medical Society of London on April 28, when a number of different opinions were elicited and remedies recommended. The subject was opened by Dr. de Haviland Hall, who referred to the conditions of modern life increasing its strain. In diet, tea, coffee, tobacco, and alcohol were implicated and autointoxication held to play an important part. Quantity as well as quality of food ought to be considered. In advanced cases meat and soups from stock should be replaced by a milk and vegetable diet. Special directions should be given to the obese. Abstinence from alcohol, "if possible," said Dr. Hall, but surely he knows that the possibility to no slight extent depends on the decisive character of the advice given. Plenty of water, preferably distilled, consumed whether hot or cold would go far to aid the exclusion of improper drinks and supersede a resort to foreign spas. But to return to Dr.

Hall's treatment, exercise in the open air, massage, an occasional dose of blue pill or calomel and the regular employment of iodides in small doses might be necessary for years. If these were contraindicated by low tension and failing compensation, digitalis and strophanthus would be useful. Thyroid extract in small quantities had helped obese patients with high tension. Dr. Hall thought that powerful vasodilators had been too freely resorted to in forgetfulness that high pressure was nature's effort to maintain the balance of the circulation. It was refreshing to hear in these days leeches or even venesection commended in suitable cases.

Sir L. Brunton approved this and said he had regarded arterial tension too exclusively as depending on the contraction of the arterioles or capillaries, neglecting too much the viscosity of the blood as a factor in raising the pressure. In a recent case he had met with such viscosity that even on venesection scarcely any flow could be obtained, so oxygen, which was standing near, was given, and after a few inhalations a full stream was obtained—the venous condition of the blood being always more viscous than the arterial no doubt was the reason of the success.

Dr. A. P. Luff remarked that very high pressure might be present with but moderate sclerosis. The treatment was to lessen the toxins in the gastrointestinal tract by free action of the bowels and reduction of meat and alcohol. Iodides of course—no vasodilators in advanced cases.

Dr. Bezly Thorne recognized two types (1) atonic and atrophic (with low diastolic and relatively high maximal pressure); (2) hypertrophic and obliterative (with relatively high diastolic pressure and comparatively small rise of the maximal). Toxemia was a cause of both and treatment should be directed to that. Dr. T. B. Scott said there was not a normal point of pressure and a double-barreled treatment was best directed toward bracing the heart and dilating the vessels. Overwork and worry were as bad as too much food and drink. Mr. Armstrong of Buxton favored spa treatment and exercise. He urged early detection of vascular change. Dr. O. K. Williamson also urged early recognition, an occasional mercurial and iodides. He found sajodin and iodopin better borne when the potash salt disagreed. As a dilator he preferred erythrol tetranitrite. Dr. Mantle said we need try to reduce pressure solely because of a rise. Cases did best when attention was directed to the alimentary tract. Dr. Hawthorne preferred the term degeneration to sclerosis. Nitrites lessened the pressure for only very brief periods. The best drug was cream of tartar—4 to 6 doses per diem. Dr. Walter Broadbent referred to one point that had not been mentioned—heredity. Some were born with high tension, he thought, while in others the pressure could not be raised. Dr. Carr thought too much was made of high pressure—much was compensatory. Failure to reduce it was often fortunate for on a fall the patient often felt worse until it rose again. As to exercise, hill climbing was better than walking on a level or even on a gradual ascent.

In the new Psychological Laboratory, formally opened yesterday, Cambridge possesses probably the finest and most complete institution of the kind. So complete is it that a description would require more than the space at my disposal to do it justice. As one illustration I may mention that in the workshop there is a small organ bellows which is noiselessly driven by water power, and can be used in the various rooms to supply air at constant pressures for blowing wind instruments for acoustic experiments. The need of a psychological laboratory had long been felt, but it was not until 1909 that a site was offered by the university and the lecturer in experimental psychology, Dr. C. S. Myers, collected among his personal friends nearly £4,000 towards the cost of building. The university association also made grants towards its equipment. It should, however, be said that the ground had been prepared by earlier workers. In 1877 Drs. Venn and James Ward had urged the need of a psychological laboratory and the idea gradually grew and was partially met by the allotment of a small room in Sir M. Foster's physiological laboratory to Dr. W. H. R. Rivers, who was appointed lecturer in experimental psychology and the physiology of the senses. A little later larger premises were obtained until after protests against their insufficiency a site for a special building was obtained, as stated above, and the new institution, worthy of the university, erected, possessing every necessity for study and research.

Professor W. Stirling has given three lectures to to the Royal Institution on "Recent Physiological Inquiries." In the last, on Tuesday, he spoke of the dominating influence of the ductless glands. These, he said, though they affected the system more slowly than the nerves, acted on the blood through their secretions, stimulating several organs. Such was the action of the internal secretions of the pituitary body, the thyroid, parathyroid, thymus and the suprarenal glands. Disaster followed any interruption of their various functions. Suppression of these was followed by diseases, *e.g.* cretinism, dwarfism, gigantism, or other changes, while the supply of their products to the blood resulted in the reciprocity of function between different parts being maintained and harmonized.

Last week the Health Insurance Commission issued a circular dealing with the representation of insured persons, laying down the mode of election by approved societies, associations of deposit contributors and when none such society exists that the local authority and medical profession may act. Other papers and memoranda have been issued by the commissioners as to bookkeeping and other matters relating to insured persons.

Sir Charles Tupper, the distinguished ex-Premier of Canada, arrived here on the 9th inst., this being his sixty-fourth time of crossing, for he is in his 92d year. You may remember that he belongs to the profession, having taken his degree at Edinburgh in 1840. He is now probably the senior graduate of the university.

Sir James Porter, K. C. B., the Director-General of the medical department of the navy, is retiring from that office. He has only held it five years and is only 61 years old. He has a very strenuous life and these five years have been very full—seven days' hard work a week, he says. But then he enjoys hard work and what he will next do is not known to many, but it will certainly not be anything easy—nor will it be rest. He tells his friends live men must go on working—it is only the dead who rest. Well, all who know what he has done wish him just what he may enjoy. Surgeon-General A. W. May succeeds to the Director-Generalship.

Mr. William James Shone, M. R. C. S., late Royal Navy, died on the 13th inst., in his 85th year. He entered the navy in 1854, served through the Crimean war, and later in the Chinese war. During the Indian mutiny he had medical charge of the

naval brigade from his ship and was under fire on thirteen occasions. He retired from the service in 1862 and practised in Bucks, becoming brigade surgeon to the Home Counties Rifles and receiving the long service decoration.

Sir J. W. Tyler, C. I. E., late Inspector-General of Prisons in the Northwest Provinces of India, died on the 12th inst. in London at the age of 73. He went to India in 1863 as civil surgeon and was for many years in charge of different divisions. He retired in 1896 after a most successful career. He was M. D. St. Andrews 1862, F. R. C. S. Edinburgh 1863.

Lieutenant-Colonel R. Manifold Craig, R. A. M. C., died on the 5th inst. in London in his 69th year. He served in the Burmese expedition, 1886-8, as senior medical officer of the Third Brigade and was awarded the medal with clasp.

Lieutenant-Colonel A. W. Mackenzie, of the Indian medical service, retired, was found dead in his bed on Sunday morning. He was staying at Plymouth and was in his 51st year. He was in the march from Kabul to Kandahar. He served in the Mahsrod Wazeri expedition in 1881 and the Waziristan of 1894. He received the Afghan medal with clasp and bronze star, and also decorations for the above named expeditions.

## OUR BERLIN LETTER.

(From Our Regular Correspondent.)

BOVINE AND HUMAN TUBERCULOSIS—BOVINE TUBERCLE BACILLI IN CHILDREN—MUTATION FORMS OF TUBERCLE BACILLI—DIFFERENCE OF OPINION.

BERLIN, April 15, 1913.

THE old question of whether the bovine type of tubercle bacillus is as pathogenic for man as the human type has been taken up anew for discussion by the Berlin Medical Society. The debate followed the reading of a paper on this subject by von Orth on February 19. The discussion became so comprehensive that two additional meetings of the society were necessary before the discussion could be completed. Orth introduced his paper with a description of the methods of differentiating the bovine from the human type of bacilli. The most important of these methods depends upon the fact that the bovine bacilli are decidely more virulent for the rabbit. Ten per cent. of all cases of tuberculosis in children are caused by the bovine type of bacillus. Similar results on this point have been obtained in New York. Of extraordinary interest are the figures obtained by Fraser of Edinburgh, according to whom there is a distinct difference between the tuberculosis of the child and that of the adult. Among sixty-seven cases of bone and joint tuberculosis this observer found in the first five years of life the bovine type of bacillus thirty-two times out of forty-seven cases, and indeed in the first year four times in four cases, and in the second year nine times out of twelve cases. In tuberculosis in the family of the children the bovine type of bacilli was found in 29 per cent. of the cases, and in 83 per cent. of the individuals of these families there was no tuberculosis. In nurslings the bovine type of bacillus was found in seven out of twenty-seven cases of tuberculosis, while of forty-one tuberculous children that had fed upon cow's milk thirty-five had the bovine bacillus. Even though Neufeld was not able to demonstrate the undoubted presence of tuberculosis in 131 children that had been fed upon the milk of tuberculous cattle, nevertheless in 8.3 per cent. of the cases there were manifestations that could be attributed to the bovine type of bacilli. It may be concluded that these microorganisms may be dangerous to human beings, and that the negative conclusions of Kirchner and Klemperer in this respect are not justified. The entire question is complicated by the fact that there are strains of tubercle bacilli which cannot be identified as belonging to either group. These strains have assumed mutation forms. Thus Ebert found three times among seventeen children and four times among fourteen adults bacilli that could not at first be identified but that after repeated passages were found to belong to the bovine group. Animal experiments have shown that human tuberculosis may originate on the basis of a bovine tuberculosis. Orth concluded that the campaign against tuberculosis in cattle should be waged with redoubled energy.

In the discussion there took part the newly chosen municipal health officer and former director of the national health bureau, Weber, who said that the bovine bacillus is not harmless to human beings, but that this microorganism is not capable of evoking widespread human epidemics. A collective investigation was made among 687 individuals, of whom 280 were children. Among these a pure bovine infection was exceedingly rare. Of those children whose cervical glands harbored the bovine bacilli, not one developed open tuberculosis even after a period of seven years. The mutation of the one type of bacillus into the other is regarded by Weber as possible, but not as proved. In one case of surgical tuberculosis the speaker had observed the presence of the bovine bacillus unchanged for ten years. Ebert's investigations were tested in the Imperial Health Office and were not confirmed.

In reply Ebert said that the researches carried out in the Imperial Health Office were not conducted according to his directions. He regarded it as proved that there are strains of tubercle bacilli that are neither human nor bovine. In twenty cases of lupus he found such strains seventeen times. In eight cases the bovine type was apparently present but the characteristic virulence of this type was absent. In nine cases the human type was present, but without virulence. It might be concluded that there are strains that grow as human strains but that possess a bovine virulence. Eckert applied the von Pirquet test to ninety-two children. Of these, seventy reacted to both types of bacilli; twelve reacted only to the bovine type, and ten only to the human type. Orth concluded that in Germany there die annually from tuberculosis 27,200 children. If only 10 per cent. of these be estimated as having a bovine infection, this furnishes a valid basis for carrying on a strenuous campaign against the tuberculosis of cattle.

**Medical Men and Morals.**—G. Pernet points out that it is not the doctor's duty to investigate reputations; he has to investigate and treat disease. In a recent case the Lord Chief Justice pointed out that a court of law was not a court of morals. Clergymen and priests seem to be ambitious to treat disease, but that, of course, is not their function—*ne sutor*. It is well to understand that syphilis is no more sinful than measles, typhoid fever, or smallpox, and to remember that it is of vital importance to the community that syphilis should be treated quickly and adequately.—*Clinical Journal*.

# Progress of Medical Science.

## Boston Medical and Surgical Journal.

*May 22, 1913.*

1. Treatment of Laryngeal Stenosis Following Diphtheria. D. L. Richardson.
2. The Treatment of Chronic Stenosis of the Larynx and Trachea. H. L. Lynah.
3. The Dietetic Treatment of Constipation. L. H. Newburgh.
4. The Favorable Influence of Periods of a Protein-Free Diet in Chronic Nephritis. H. W. Goodall.
5. Jackson Membrane. H. W. Baker.
6. A Case of Empyema Due to Bacillus Coli. A. L. Grover.

**1. Treatment of Laryngeal Stenosis Following Diphtheria.**—D. L. Richardson delineates a method of treatment which differs from the one usually prescribed. He believes that the presence of the intubation tube in the larynx acts as a foreign body and is capable of doing much damage, as shown by post-mortem studies. It is considered rational to do a very low tracheotomy so as to keep the tracheotomy tube as far as possible away from the larynx, especially the subglottic region. The object of these two procedures is to give the larynx rest by removing the tube and diverting the air through another channel. That is what is done in almost any other surgical procedure. Another fact also impressed the author. If the presence of the tube does injure the larynx, the sooner it is out the better, after one is satisfied by a few reintubations that there is trouble ahead. The author believes that intubation should not be prolonged more than a month unless one is satisfied that one or two more extubations will find the child able to get along without the tube. There should then be performed intermittent dilatation under direct vision until the larynx reaches about normal size and then only when stenosis develops. Dilatation is accomplished by two methods: (1) By an Otis or a Kollman straight urethral dilator. (2) By successively larger intubation tubes introduced directly and which are not left in the larynx but are taken out after a few minutes. The former method furnishes more rapid dilatation, and one can pass a stenosis that cannot be passed by a one-year tube. The Kollman dilator has the advantage of being a four-branch dilator. The intervals may be two weeks or a month. After the larynx has reached about normal size, that is, will admit a tube suitable for the child's age, the patient should be left alone unless subsequent contraction supervenes.

**2. Treatment of Chronic Stenosis of the Larynx and Trachea.**—H. L. Lynah classifies the different types of chronic stenosis of the larynx and trachea as follows: (1) The nervous type, in which fear induces a violent adductor spasm. (2) Spasm type without nervous element due to the long continued wearing of the tube. (3) The polypoid type in which there is a marked outgrowth of polypoid connective tissue at the base of the epiglottis and ventricular bands. (4) The hypertrophic subglottic type, in which the stenosis is slow and gradual, accompanied by both the inspiratory and expiratory dyspnea. (5) The cicatricial type due to traumatic pathological and surgical influence. (6) The atrophic type which occurs after long continued pressure by the dilating tubes. (7) Obstruction of the upper respiratory tract by neoplasms and the resulting contraction after their removal. In discussing the treatment the author states that the different types seldom occur singly and all require prolonged intubation to effect a cure. For the nervous and spasm types an extremely narrow-necked tube should be used, but it must have a sufficiently large lumen for the patient to get air. The purpose of this tube is to allow for play of the abductor muscles. When polypoid growths are present an extremely large head and neck tube is necessary to press out these mushy masses. For the hypertrophic type gradual dilatation with the special tubes measured in millimeters with increasing diameter should be used. The tube should dilate anteroposteriorly as well as laterally, and the author's tube of cigar shape accomplishes this purpose. The best control of telling how a case is progressing when treated by dilatation is by the absence of hemorrhage at intubation and extubation. The treatment of the cicatricial type is the same as in the case of the hypertrophic type, namely, by dilatation, though when the tracheal fistula is low a special tube, with the greatest diameter from the retention swell downward, should be used. When the case is one of chronic stenosis from long wearing of a tracheal cannula with closure of the larynx above, it should be dilated from the tracheal fistula upward by means of sounds and then a suitable dilating tube should be introduced. The atrophic types with the thick sticky mucocrusts, which obstruct the larynx after a cure has been effected, should be treated by intralaryngeal medication, internal administration of the iodides, and steam inhalations. For the persistent cough-up case, which invariably becomes a chronic one if the patient does not die of bronchopneumonia, and upon which high tracheotomy is usually performed, the author has devised a tube with the same diameter as the neck extending to the end of the tube, at which site there is a bulbous extremity which rests in the lower trachea. The only danger of these tubes is that they should not be left in longer than four days before they are changed, for the contraction about them at the cricoid level will be so great that extubation will be extremely difficult.

**4. Periodical Protein-Free Diet in Chronic Nephritis.**—H. W. Goodall has found that a protein-free diet for a continuous period of from five to ten days can be maintained without harm to the individual. With such a restriction the accumulated end products of protein metabolism in the blood are promptly eliminated, the nitrogen content of the blood falls to normal, and the kidneys and heart are given an opportunity to rest. Such a restriction may be followed by a low protein diet for a considerable period of time, even in advanced cases, without a return of the disagreeable symptoms. The following procedure, which was followed in the cases reported by the author, is advised as the dietetic treatment of chronic diseases in which there is a retention of nitrogenous end products. A protein-free diet should be given for a period of from five to ten days, according to the severity of the disease. At the end of this period amounts of protein not exceeding 60 grams daily should be added and maintained until the resulting improvement of the patient will permit of a further protein increase (up to 90 or 100 grams as a maximum) or until the signs and symptoms indicate that there is a reaccumulation of waste products. In the latter event the protein free diet should be repeated. This same procedure may be employed at intervals of not less than six or eight weeks, or a single protein-free diet may be given as often as once in seven days, without injurious effects. As a caution it is advised that the diet be given under supervision, or controlled by the urinary nitrogen.

**5. Jackson Membrane.**—H. W. Baker states that this condition is of embryonic origin. All cases showing intestinal stasis due to obstruction should be treated surgically. The membrane should be severed and all raw surfaces covered with peritoneum or omentum. In cases in which this cannot be done Lane's ileosigmoidostomy should be performed.

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## New York Medical Journal.

*May 24, 1913.*

1. Nitrous Oxide Gas, Essence of Orange Ether, and Sequestration in General Anesthesia for Operations in the Upright Position. T. R. French.
2. Recovery in a Case of Influenzal Meningitis Complicated by Pneumonia. T. E. Satterthwaite.
3. Should an Interneship Be Required? I. Dyer.
4. The Meniere Symptom Complex. S. J. Kopetzky.
5. Direct Laryngeal Examination. J. A. Pratt, M.D.
6. The Enhancing of Auditory Acuity by Psychological Methods. W. J. W. A. Maloney.
7. The Treatment of Tuberculosis. A. B. Jackson.
8. Sexual Problems of Today. B. S. Talmey.

9 A Case of Total Deafness Following a Dose of Quinine. M. J. Ballin.
10. Gastroptosis and Coloptosis Transversa as Seen from Post Mortem Examinations. K. M. Lynch.

1. **Sequestration in General Anesthesia in the Upright Position.**—T. R. French finds that operative work in the nose and throat with the patient in the upright position can be done with more skill, with less loss of blood, and with less anesthesia than when the patient is in the recumbent position. The method consists in placing the patient upon the table for anesthetization in the recumbent position, and when the stage of excitement has passed, in converting the table into a chair and bringing the body to a sitting position. In the induction of anesthesia the use of essence of orange as a preliminary to the use of ether, makes the administration of the latter less disagreeable and greatly assists in the reduction of shock by bridging the state of excitement. The closed method of administering ether is of great value in maintaining anesthesia in long operations. In addition to this sequence and method of anesthesia the author also employs Dawbarn's method of sequestration of the limbs. This is effected by causing a congestive hyperemia of the limbs by means of inflated blood pressure cuffs about the thighs and arms, or thighs. The sequestration method in association with the upright position reduces still further the amount of the anesthetic required and the amount of blood lost.

2. **Influenzal Meningitis and Pneumonia.**—T. E. Satterthwaite reports a case of pneumonia in a male aged twenty-five years. For a week previous to the onset of pneumonia the patient had been suffering from a mild influenza. The pneumonia was ushered in with a chill and violent headache. When first seen by the author the patient was unconscious with pupils irregularly dilated and unresponsive. Large doses of bromides were given to relieve the nervous symptoms. On the second day the signs of pneumonia were easily recognized. The temperature followed the characteristic curve of lobar pneumonia. Crisis occurred on the seventh day and the patient recovered. The author states that he made the diagnosis of influenzal meningitis with pneumonia on the first day the patient was seen. It is difficult to conceive the validity of the diagnosis of influenzal meningitis in this case, inasmuch as no lumbar puncture was made. This diagnosis at best was only a presumptive one, being based entirely upon the clinical picture. The author notes that influenzal meningitis is usually ushered in by violent pain in the head, especially in the frontal region and back of the neck, facial neuralgia, and photophobia. There are apt to be also irregular contractions of the pupils, muscular spasms, hallucinations, delusions, unconsciousness, perhaps mania. At first there is a high pulse rate, perhaps with arrhythmia. In the early stages patellar or ankle reflexes are apt to be exaggerated. Later, if there is effusion into the ventricles or at the base, there are loss of these reflexes, relaxation of the pupils, stupor, and a slow pulse.

3. **The Interne Year.**—I. Dyer believes that the interne year is desirable for license if it can be made systematic, which at the present time is not probable. Therefore, any rule requiring an interne year is inexpedient, and if adopted would work a hardship on all but the graduates of a few colleges owning or controlling hospital services. There should be an attempt at the gradual standardization of hospitals to educational purposes, with the future expectation of correlating hospitals and colleges of medicine in each State. This will require extensive education of the lay community. Until such time, a fifth, practical, clinical year should be required of medical graduates, and therefore should be required by State boards of examiners. To make such a clinical year efficient, State boards of examiners should stipulate the detail and amount of practical clinical work in each branch to be certified as a part of the application for a license before the candidate is admitted to examination. Such stipulation should specify each branch of medical and surgical practice and the scope of training required.

6. **Enhancing Auditory Acuity by Psychological Methods.**—W. J. W. A. Maloney states that every case of deafness should be carefully and thoroughly examined in order to ascertain if any tones are still audible. If there are no audible tones, lip reading must be taught. If there are audible tones, a tone chart should be made. The patient should be blindfolded while the audible tones are reiterated in his ear. At first these tones must be made as loud as is necessary to make them perceptible, and later diminished in intensity according to the success of the educator. Ultimately the patient will perceive them, even when they are uttered with an intensity scarcely perceptible to the normal ear. Then when these tones are thoroughly taught, training in sound pictures, vowels, etc., of which these tones are an element, should be begun. Thenceforward it will be merely a matter of time and patience until a serviceable degree of hearing can be reestablished.

9. **Total Deafness Following a Dose of Quinine.**—M. J. Ballin reports the case of a girl sixteen years old who in the course of fifteen minutes took thirty grains of quinine. Two hours later she complained of an intense headache and severe tinnitus in both ears. There was no disturbance in coordination, but she noticed a marked diminution in her hearing which steadily grew worse, so that perception for all sounds was completely lost by the following morning. She did not seek medical aid immediately, hoping that her lost function would in time reestablish itself. Finding that she remained deaf in both ears, she consulted different aurists with the hope that something could be done for her, and finally Professor Politzer of Vienna, who, after a careful examination, pronounced her case hopeless.

10. **Gastroptosis and Coloptosis Transversa.**—K. N. Lynch concludes that gastroptosis and coloptosis are secondary conditions and not primary. The underlying cause in both conditions is a weakening and relaxation of supporting structures consequent to some wasting disease, supplemented materially in the case of the colon, and to a less extent in that of the stomach, by an actual myasthenia of their walls allowing an accumulation of their contents. The emaciation is primarily the cause of the conditions, but the establishment of a vicious cycle is likely if the prolapse interferes with the digestive function. The high percentage of the occurrence of these conditions frequently stated in the literature is not borne out by post-mortem examination.

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## Journal of the American Medical Association.

*May 24, 1913.*

1. An Attempt to Interpret Present-Day Uses of Vaccines. Theobald Smith.
2. A Plea for an Institute of Human Embryology. F. P. Mall.
3. Speech Without a Larynx. E. W. Scripture.
4. The Germicidal Efficiency of Commercial Preparations of Hydrogen Peroxide. P. G. Heinemann.
5. A Method of Performing External Urethrotomy in Impassable Stricture. A. B. Cecil.
6. Acute Rheumatic Orchitis. Report of a Case Associated with Erythema Nodosum and Acute Torticollis in a Child Aged Two and One-Half Years. M. H. Bass.
7. Venereal Prophylaxis: Why It Sometimes Fails. R. A. Bachmann.
8. Transmission Experiments with the Virus of Poliomyelitis. Finding the Virus in the Nasal Secretion of a Human Carrier Four Months After the Acute Stage of a Second Attack of Poliomyelitis. W. P. Lucas and R. B. Osgood.
9. The Mode of Transmission of Poliomyelitis. M. J. Rosenau.
10. A Method for Standardizing Bacterial Vaccines. J. G. Hopkins.
11. Report of a Group of Infants Infected by a Tuberculous Attendant. A. F. Hess.
12. Oily Injections of Salvarsan—A Warning. H. H. Hazen.
13. New Ether Pad and Cone. E. M. Jones.
14. A Method of Controlling Rectal Hemorrhages. B. L. Myers.
15. A Plaster-of-Paris Splint. M. D. Touart.
16. A New Tonsillectome. J. E. Jennings.
17. An Original Method of Testing for Potassium Iodide in the Urine. H. Power.

1. **The Uses of Vaccines.**—Theobald Smith emphasizes the following points: All parasites tend to increase

the resistance of the host in which they live and multiply. Out of this universal fact a number of practical problems arise. In any given disease is it worth while to try to raise this immunity, and how much energy will it cost the patient? If worth while, what is the best and most sparing way of raising such immunity artificially? In any localized infection one must ask: Is this a beginning process without attendant immunity, or is it a residual process associated with general immunity? If the latter, vaccines may be considered safe. In processes associated with fever and bacteriemia, science says, hands off until we know whether we have a progressive disease with gradual undermining of the resistance or a more localized affection in which the excursions into the blood are secondary. In any event, the use of vaccines in these cases must be regarded as experimental, and should not be undertaken without the aid of one trained in immunological problems. Judged from this point of view, as well as from the work of the laboratory as a whole, the author concludes that vaccines applied during disease will be rarely, if ever, life-saving, but they may hurry a stationary or languid process which tends toward recovery, by bringing into play the unused reserves of various tissues.

3. **Speech without a Larynx.**—E. W. Scripture states that audible speech can be taught to persons without communication between the organs of speech and the lungs and he has had opportunity recently to carry speech development in such cases much further than has heretofore been reported. The patient came to him three months after the removal of the larynx for cancer. Breathing was performed through a tracheal cannula. The method of producing the sounds of the different letters is described in detail, the principal one being the use of air taken into the mouth and expelled by the different organs, tongue, lips, teeth, etc., in different positions. For example, to produce the explosive "p." the patient was taught to close his lips and compress the air in his mouth and pharynx by tension on the cheeks and in the back of the throat. On opening the lips there was a puff and explosion of the air, producing an audible "p." For "t" he placed the point of the tongue against the palate and compressed the air in the mouth and pharynx: on releasing the tongue a distinct "t" was produced, etc. The use of the air from the tracheal cannula, which when expelled made a rushing sound, was also employed in differentiating the surds and sonants and distinguishing the vowel sounds.

9. **Transmission of Poliomyelitis.**—M. J. Rosenau notes that the chief theories to account for the spread of the disease are: (1) That it is a "contagious" disease passed directly from person to person through the secretions from the mouth and nose. (2) That it is an insect-borne disease. (3) That it is dust-borne. (4) That it is an alimentary infection, the virus being taken in with food and drink and absorbed from the digestive tract. There is evidence from the field and laboratory to support each of these theories. Infantile paralysis as an intestinal infection has not received the attention it deserves. There has been a suspicion that the disease is contracted from the lower animals, horses, dogs, etc. Its resemblance to rabies has been noted by many observers. The dust-borne theory has been given rather scant credit, as it does not have the characteristic of even air-borne infection. The insect theory, especially the part played by the stable fly, explains some peculiarities, but further experimental evidence is needed to assure one that it is the main or only source of the disorder. Among other insects the most positive evidence has been obtained from the bedbug. But a definite answer cannot be made to any of the queries suggested, and the public must be given the benefit of the doubt and the infection combated along all possible lines.

11. **Infection from a Tuberculous Attendant.**—A. F. Hess reports the instance of ten children two to three years old, in one ward of a large infant asylum, all of whom became infected with tuberculosis from an attendant who had charge of them for six weeks. The children had been subjected to a routine von Pirquet test. This was carried out throughout the hospital every six months. Three of the ten children had been found to give a positive reaction, which was accounted for in one case by the mother being tuberculous. When the nurse was found to be diseased she was discharged and the children were retested with the same results as before. Three months later all the children gave a positive reaction and three months later still the same was true. The children's health has on the whole not suffered. The author concludes that they were all infected by the attendant during a period of exposure of six weeks. A contributing cause was stomatitis, from which all the children suffered while they were under her care.

## The Lancet.

*May 17, 1913.*

1. Some Points in Determining the Signification of Albuminuria in Pregnancy. H. Williamson.
2. Alimentary Toxemia. Sir James F. Goodhart.
3. The Influence of Chronic Sepsis upon Eye Disease. W. Lang.
4. The Relationship of the Thyroid Gland to Alimentary Toxemia. F. Langmead.
5. Indications of Nerve Lesion in Certain Pathological Conditions of Blood-Vessels. T. Wingate Todd.
6. Remarks on Abnormal Intraabdominal Developmental Adhesions. H. M. W. Gray and W. Anderson.
7. Chloretone Overdosage. W. Essex Wynter.
8. The Bacteriology of Cholera and Its Relation to the Spread of the Disease from the Point of View of the Health Officer. J. A. Turner.
9. A Contribution to the Etiology of Rheumatoid Arthritis. H. W. Crowe.
10. A Note on the Use of Vaccines in the Treatment of Rheumatoid Arthritis. A. B. Soltau.
11. A Case of Volkmann's Ischemic Contracture of the Hand. G. de Swietochowski.
12. A Case of Gonorrheal Warts on the Face Successfully Treated by a Vaccine. W. E. M. Armstrong.
13. The Futility of the Coroner's Inquest. W. A. Brend.
14. Man's Mental Evolution, Past and Future. H. Campbell.

1. **Significance of Albuminuria in Pregnancy.**—H. Williamson concludes that a condition of acidosis is found constantly in cases of pregnancy toxemia when the lesions are of a certain grade of severity, and is not found in cases of chronic nephritis even when the symptoms are severe; and, further, that the onset of an acidosis in the course of a chronic nephritis in pregnancy may be interpreted to mean that toxemia has been added to the existing lesions. The author has been disappointed to find that these tests have failed in the earlier and slighter cases; in a number of instances he could find no evidence of acidosis, and in several instances in which the symptoms passed away under treatment the ammonia-urea coefficients remained normal, and acetone and diacetic acid were never demonstrated in the urine. In spite of this, however, the tests are of real clinical value. The author does not believe that the symptoms are due to the acidosis; indeed, these results definitely disprove this theory, because the symptoms are often present in a mild form before one can find any evidence of acidosis, but the results of treatment indicate that if one diminish the acidosis the severity of the symptoms will be alleviated. In severe cases of eclampsia improvement follows an intravenous infusion of solutions of sodium acetate and sodium bicarbonate. Some important points in treatment are emphasized: (1) In cases of pregnancy toxemia chloroform should never be administered, because the action of chloroform is to render more grave the lesions which already exist and to increase the acidosis. Ether administered by the open method is in every way preferable as an anesthetic. (2) Calomel should not be used as an aperient, for the lesions in the liver and kidney produced by mercurial poisoning are of the same nature as those of pregnancy toxemia, and it is probable that mercury even in small doses will increase the gravity of the lesions already existing. (3) For a similar reason douches of mercurial antiseptics should never be employed. (4) In all cases in which an acidosis is present an intravenous

infusion with a solution of sodium bicarbonate or sodium acetate should be practised. (5) The fat metabolism should be spared as far as possible by the administration of glucose. The author's practice has been to administer it by the rectum when vomiting is present and to give it by the mouth in the form of glucose lemonade where the digestive functions are not deranged. (6) When a pregnant woman suffering from chronic nephritis shows evidence of the existence of acidosis, the uterine contents should be evacuated without delay, for with a kidney previously damaged the prognosis of pregancy toxemia is very grave.

4. **The Thyroid and Alimentary Toxemia.**—F. Langmead states that an important function of the thyroid is to counteract intoxication. One of the sources of this intoxication is probably the bowel. If the intoxication be proportionately great for the gland, it undergoes hyperplasia and visible enlargement. If the amount of intoxication can be lessened the extra burden is removed and the gland diminishes. This lessening of intoxication can be effected by the use of thymol and of vaccines, especially those prepared from cultures of the coliform organisms obtained from the patient's own intestinal flora.

5. **Nerve Lesions and Pathological Conditions of Blood Vessels.**—T. Wingate Todd states that the vascular symptoms so frequently associated with the sensorimotor syndrome of the affection often laconically designated "cervical rib" are probably produced by a lesion of the nerves supplying the blood-vessels of the arm. It is then obvious that the same explanation might afford a clue to the elucidation of many other obscure conditions. The mechanism of production of vascular changes in the lower limb is likely to be similar to that found in the upper limb. In view of the probable causation of vascular changes in "cervical rib" by a nerve lesion, it is possible that a similar explanation may be found to hold good for certain other diseases exhibiting pathological changes of obscure origin in the blood-vessels. No explantion will be found satisfactory if it depends on the unproven and improbable hypothesis that sympathetic fibers for peripheral vessels pass to their distribution along the trunks of the main vessels.

## British Medical Journal.

*May* 17, 1913.

1. The Internal Secretions in Relation to Dermatology. Sir Malcolm Morris.
2. Some Points in the Early Diagnosis of Cancer of the Stomach. T. J. Horder.
3. An Instance of Large Ureteral Calculus and Some other Cases of Calculi. G. Wherry.
4. Treatment of Congenital Dislocation of the Hip. A. S. Blundell Bankart.
5. A Series of Cases of Parotid Tumor. A. Street.
6. Chronic Arthritis: Therapeutic Evidence of the Incidence of Streptococcal Infection. D. W. Carmalt Jones.
7. Sequel of a Case of Cardiolysis. Sir Robert Simon.
8. An Analysis of a Series of Cases of Hypertension and Hypotension Treated at Vittel. H. J. Johnston-Lavis.
9. *X*-Rays in the Treatment of Diseases of the Palm. H. Davis.

1. **The Internal Secretions in Relation to Dermatology.**—Sir Malcolm Morris has found that the administration of thyroid extract is often followed by improvement in psoriasis, alopecia, ichthyosis, and xerodermia. In patients suffering from chronic skin affections of which the causation is not known, if the thyroid appears on palpation to be smaller than normal, the use of thyroid extract is suggested. In no skin affection has thyroid mediation given better results than in psoriasis. Obstinate cases of pruritus have proved amenable to its influence. Other diseases in which thyroid is of benefit are cheloid, warts, acne vulgaris, rhinophyma, lupus vulgaris, affections of the nails, and pigmentary disturbances of the skin. Neither thymus nor pituitary nor supraneal preparations have yet been extensively used in dermatology. But the author has employed thymus gland extract with advantage in acne associated with enlarged thyroid and rapid heart, and has had encouraging results from pituitary gland extract, and also from suprarenal extract, in persistent urticaria and angioneurotic edema. He has also found benefit to follow the use of suprarenal extract in lupus erythematosus, possibly owing to its influence upon the vasomotor centers.

2. **The Early Diagnosis of Gastric Carcinoma.**—T. J. Horder emphasizes three points: (1) The incidence of this disease is high; (2) the question of curability is probably in large degree a matter of early diagnosis; (3) the differential diagnosis between cancer of the stomach and other important, but less serious, maladies is often extremely difficult. One important fact is frequently elicited from the history: dyspepsia has arisen, as it were, in the midst of health; the patient is not, as a rule, a chronic dyspeptic. Anorexia is an extremely common symptom. Flatulence and heartburn are symptoms common to various stomach disorders, and to some that are trivial in their nature. They help little in the diagnosis of the case. There is, however, one point worth mentioning—that the feeling of distention, in the case of cancer, is but little relieved by careful choice of food. Pain is a very variable feature, perhaps the most variable of all. Occasionally it is quite absent, even throughout the whole illness; it is sometimes a matter for surprise to see a patient with a large gastric tumor and extreme wasting quite free from pain. Unfortunately the contrary is the rule; cancer of the stomach is usually a very painful malady. Vomiting is a variable symptom but is more constantly present than in ulcer. The vomiting of a large quantity of recently clotted blood is distinctly uncommon in cancer of the stomach. When it occurs it is often a terminal event. Loss of weight and loss of strength are significant symptoms. Careful inspection of the abdomen reveals asymmetry, and the effect of respiration upon the lines of the abdomen. Pyloric cancer leads to dilatation of the stomach. Palpation is no less important than inspection. Palpation possibly discovers five things: (1) The position and size of the stomach if this is dilated; (2) the presence of a tumor; (3) rigidity of muscles; (4) tenderness; and (5) enlarged glands or secondary masses in other organs than the stomach. The general signs of gastric carcinoma include anemia, fever, and cachexia.

6. **Chronic Arthritis and Streptococcal Infection.**—D. W. Carmalt Jones makes a contribution to the bacteriological diagnosis of arthritis based on the results of empirical therapeutic measures. He presents the records of twenty consecutive cases in private practice suffering from arthritis of various types, in all of which a tentative clinical diagnosis of streptococcal infection was made, and which were treated with vaccines of streptococci derived from different sources. The cases were, in the majority of instances, of long standing, they had resisted general therapeutic measures, and no source of infection was clearly indicated. Effusion into joints was rare, and the fluid when removed by puncture was invariably sterile. Blood cultures were also sterile whenever investigated. For various reasons streptococcal infections were suspected, and the patients were accordingly treated with vaccines made from streptococci obtained either from the mouth, in cases of oral sepsis, from the urine, or from the feces. Eight out of twenty unselected cases gave strong therapeutic evidence that their arthritis was due to infection by streptococci chiefly derived from some part of the alimentary tract.

## Berliner klinische Wochenschrift.

*May* 5 *and* 12, 1913.

**Treatment of Epilepsy.**—Erlenmeyer who has a private sanatorium for nervous affections, enumerates the measures which he finds of most value in epilepsy. In general, the management is depressive in character. Of first value is rest—for all who have over two attacks

weekly. Patients lie abed or recline in open air. A slight amount of activity is permitted, such as walking up an incline for an hour. Work he does not much believe in for the young epileptic, however useful it may be in psychoses. The usual dietetic restrictions are practiced, but in one place the author speaks of most cures probably in undernourished bedfast patients. It is not so much the quality of the food as overeating which is injurious. If the bowels are filled with a mixture of ordinary foods generating great quantities of gases, an attack is invited. The small, oft-repeated meal does well along with daily evacuations, and the author has little to say of intestinal autointoxication. Much stress is laid on care of the teeth, even if attacks result from dental operations. Hydrotherapy is valuable when used for a depressing effect. Both trephining, alone or with puncture of the ventricles, added, accomplish much in relieving certain cases. In epilepsy in childhood with likelihood of acute focus in the brain, a seton in the neck often renders good results. For drugs he uses the inorganic bromides, backed up to some extent with opium and chloral. He accepts salt starvation only to a limited degree. Salted fish and meat, and the like, he excludes. Bromides may replace table salt as a season to some extent. He has considerable faith in iodides in the young when he suspects active lesions (encephalitis, meningitis).

**Acute Nonpurulent Thyroiditis.**—Lublinski reviews our recent knowledge of this subject. The condition may occur in an intact or a goitrous thyroid (strumitis) and the author confines himself chiefly to the first. The picture of this is almost unmistakable. The onset is marked by high fever, malaise, headache, and local, radiating pain perceived chiefly in the ear and occiput. Examination reveals local pain and tenderness. In some cases a tracheitis is associated and dysphagia is usually present. The sympathetic plexus is often involved so that remote symptoms like ptosis may develop. The acute attack lasts probably one week, after which the symptoms become less marked. A relapse may occur if a unilateral attack is followed by one on the other side. In searching for a cause of this affection rheumatism is mostly in evidence, and there appears to be a distinct rheumatic type associated with acute articular rheumatism. Influenza, especially during epidemics, causes many cases, and the same is true of measles, but in all statistics we cannot tell how much strumitis is represented. Thyroiditis is also seen now and then with the other infectious diseases. The majority of victims are women during the reproductive cycle. Strumitis is excluded chiefly by the absence of history of a goitrous enlargement, and by the superior dimensions. The course is very different, for strumitis often ends in suppuration. The prognosis of pure thyroiditis is good, no fatal cases having yet been recorded. This statement must be carefully qualified, for in the rheumatic type fatal endocarditis might coexist. In certain cases Graves' disease appears as a sequela. Life may seem threatened in certain cases of tracheal compression, and a resection may be indicated, but it is hardly likely that strangulation would develop in such cases.

**Present Status of Treatment of Ozena.**—Prof. Moure of Bordeaux contributes an article on this subject with the subtitle "ozenous atrophic coryza." The author is a unicist, who does not restrict the term ozena to the type associated with sunken nose, which is presumably congenital. There are numerous intranasal conditions which cause an offensive odor, which are not germane to the subject; but aside from these ozena means for him any atrophying rhinitis which from its locality tends to reduce the lower and middle turbinals to a mere framework upon which dried crusts form—to be expelled every second, third, or fourth day. The atrophic condition of the turbinals causes the nasal chambers to seem much more ample than normal. The occasional complications of sinusitis may aggravate the picture, but is not essential to it; and the same may be said of pharyngitis and laryngitis with fetid crusting. Ozena, thus imagined, is curable. The author has pressed into service nearly every modern therapeutic resource—hot air, serotherapy, respiratory movements, compression, massage (douching), vibration, the use of paraffin. The complicating sinusites receive special management. The author's measures for treating ozena increase in importance from first to last; and the greatest amount of space is devoted to massage of all kinds, and the use of paraffin. Both these forms require special apparatus and technique. Douching appears to be the principal form of massage. The submucous injection of paraffin tends to prevent atrophy of the turbinals.

**Formation and Excretion of Oxalic Acid in Mankind.** Lichtwitz and Thörner have come to some varied conclusions under this heading; in most cases of icterus we find an increased content of oxalic acid in the urine, and as the choledochus becomes more and more permeable the content sinks. It thus appears, not only from the author's work, but from that of others, that oxalic acid escapes in part in the bile. When glycocoll in from 2 to 5 gm. doses is ingested the urine shows no increase in oxalic acid. Gelatine, however, increases the formation of the latter. The intestinal flora stand in some relationship with the formation of oxalic acid. In the lungs *Aspergillus niger* tends to form the latter. Roast partridge does not increase the urinary oxalic acid.

**Corpus Luteum and Pregnancy.**—Miller sums up a prolonged study of this subject as follows: There is a fixed interdependence between menstruation and ovulation. The rupture of the follicle precedes the hemorrhage by about nine days (average). As the ovum migrates along the tube, the membrana granulosa becomes changed to the corpus luteum, the latter now having been proved to be an epithelial formation, which when recent contains no fat. During gestation the corpus luteum gives almost no fat reaction, while the positive identification tests rest upon the presence of colloid drops and concrements of lime. Not until the regression of the corpus luteum do we find fat present in any significant quantity. The "yellow body" constitutes a gland of internal secretion of periodic manifestation. It is responsible for the cyclical transformation of the uterine mucosa into decidua. The ovum itself is nonparticipating here. The formation of decidua both favors nidation and protects it afterwards. Lactation atrophy of the uterus is not a reflex trophoneurosis, but is due to the absence of a corpus luteum in the puerperium. Menstruation means only a natural relief of the surcharged uterus and has no actual significance in regard to conception, and menstruation in mankind and the rut in animals constitute two different processes.

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## Münchener medizinische Wochenschrift.

*May 6, 1913.*

**Diagnosis and Treatment of Chronic Pyloric Ulcer.**—Faulhaber sums up a long, comprehensive paper on this subject as follows: This lesion presents such a well-outlined symptom complex that in most cases diagnosis is self-made. Aside from the classical symptoms of gastric ulcer—cardialgia, hemorrhage (occult included), vomiting, etc., three other important symptoms are available, to wit, a periodicity in the symptoms, continuous hypersecretion and pylorospasm. The pylorospastic syndrome is not present in ulcers remote from the pylorus, and is pathognomonic of a lesion of the pylorus or immediately adjacent area. Pylorospasm is recognizable with certainty by the *x*-ray, as a result of the mild disturbances of motility present. Internal treatment is a failure in two-

thirds of all cases, so that surgical intervention must always be ranked among the relative indications. Elsewhere he mentions 75 per cent. of failures as the outside result of medical treatment.

**Erysipelas and Tattooing.**—Sehrwald's paper is based on the following case: A patient developed a severe erysipelas at the site of an active boil on the nape of the neck and the eruption spread rapidly over the entire trunk, head and neck, with severe constitutional symptoms. On the eleventh day it involved all at once the right shoulder, but did not extend itself continuously down the arm. Areas of skin were skipped and the disease seemed to select a tatooed patch. Now came the extraordinary manifestation. The tatooed area was made up of figures done respectively in red and blue ink. But while the latter were spared, the red ink areas were severely attacked and blebs even developed. In the meantime the continuous body of the erysipelas rash caught up with the outposts, which had pretty well faded. Unlike the latter, it showed no discrimination whatever, blue and red tattoo marks being involved alike. The main rash then subsided leaving the marks unchanged. The author's attempts to explain the initial immunity of the blue tattooed region lead to no permanent valid conclusions.

**Thyreogenous Etiology of Hemorrhagic Metropathies.**—Schrt writes exhaustively on this subject and adduces many disconnected data which seem to point to one conclusion as indicated by the title of the paper. Eclampsia is believed to be favored by hypothyroidism. Thyroid extract seems to have cured obligate sterility. Habitual abortion is common in cretinoids, and infantile uterus which also favors habitual abortion may be a phenomenon of hypothyroidism. An inference that tendency to abortion must of necessity suggest syphilis does not appear to be justified. The increased coagulability of the blood as connected with eclampsia has been attributed to thyroid insufficiency. The benefit from normal sera in the toxemia of pregnancy may be due to the thyroid secretion in the blood and not to any highly specific disintoxication. In the picture of hypothyroidism in pregnancy tetany is a feature, and this spasmophilia may stand in association with eclampsia. The two states have usually been radically separated because tetany does not affect the sensorium; but cases are now upon record which show that in the severest types of tetany consciousness is abolished. Passages are freely cited from Kocher, Jeandelize, Herthoge, Levide Rothschild, Seitz, Biedl, and other leading authorities on hypothyroidism which point clearly to a definite relationship between a great number of anomalies of the female reproductive organs and thyroid insufficiency which have commonly been connected with ovarian conditions. It will be the task of the future to reduce these relations to definite formulæ.

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## Deutsche medizinische Wochenschrift.

*May 1, 1913*

**Herpes Zoster Frontalis with Bacillary Find in the Gasserian Ganglion.**—Sunde reports this case which appears to support the contention of the remote past that zoster is an acute exanthematous infection, at least in certain forms. The discovery in 1863 by Bärensprung that it was due to some acute affection of the nervous apparatus naturally put an end to this view. Head and Campbell control records of 21 autopsies after zoster, and regard the latter as due to the presence in the blood of a neurotropic bacteriotoxin. They were unable to find any microorganisms in the lesions. Especially in the Scandinavian countries have attempts been made to find germ life in the cord, ganglia, nerve roots, etc., etc. Magnus found a diplococcus in the spinal ganglia, and this seems to have been the sole find up to the present time. The author now reports his case which came to light through an autopsy on a very old man who at the time of his death had a right herpes zoster frontalis in every way typical. There had been little time for post-mortem changes which are generally recognized as highly prejudicial to studies of bacteria in nervous tissues. The actual cause of death was double bronchopneumonia. An acute hemorrhagic gasseritis was present on the right side. Serial sections showed a multitude of Gram-positive cocci. The opposite ganglion was normal. In regard to earlier work it is a common experience to find germ life in lumbal punctates in herpes zoster, but apparently no attempts have been made to identify the bacteria.

**Anatomical Basis of Placenta Previa and Its Relationship to Therapy.**—Pankow states that we must differentiate between two forms of placenta previa, viz.: primary and secondary. In the first the ovum has been originally implanted in the lower uterine segment and in the second form very close to it. In certain cases the tissues of the isthmus uteri including the blood vessels become very friable, while there is a corresponding want of contractile power. The latter prevents the normal closure of the sinuses after delivery. From this viewpoint abdominal cesarean section is the indicated procedure. As this resource, as well as the performance of vaginal cesarean section, is coming more and more into use the child mortality is constantly falling until it is rated as 2.5 per cent.

**Hemoptysis from Perforated Aortic Aneurysm.**—Hampeln writes at length on this accident which he has witnessed some 15 times as the result of tracheal or bronchial perforation, all the cases necessarily fatal. This is, of course, one of the inevitable methods of termination of intrathoracic aortic aneurysm. But with the diagnosis established hemoptysis does not mean that the aneurysm has burst. The blood may proceed elsewhere than from the aneurysm, as an entirely independent affair, or the course of it may be a lesion due to a common cause, as etheroma of the pulmonary vessels, or the aneurysm itself still intact may cause a perforation into the pulmonary artery. In a word victims of aneurysm of the aorta may be subject to a variety of hemorrhages which do not involve perforation of the aneurysm. In ten of the fifteen cases the bleeding was protracted and of prodromal significance, and in the others copious and critical.

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**Congenital Membrane of the Larynx.**—G. W. Badgerow reports the case of a boy, aged 6, who was sent to the author complaining of weakness of voice. On examination of the larynx a membrane was seen situated at the anterior commissure stretching between the cords, an opening only left in the posterior part of the glottis. There did not seem to be any interference with respiration.—*Proceedings of the Royal Society of Medicine.*

**Relapse in Scarlet Fever.**—Clément, Rouèche, and Sorel report two cases of scarlet fever with relapse. The secondary eruption appeared 24 and 34 days respectively after the primary eruption. The same premonitory, febrile, buccal, and pharyngeal symptoms appeared in the relapse as in the primary attack. The eruption lasted two to three days and there were no complications.—*Journal de Médecine de Paris.*

**The Study of Purgatives with the Technique of Intestinal Perfusion.**—R. Glénard studied the movements of the small intestine in the cat and rabbit while this organ was perfused through its blood-vessels with Locke's solution. In this manner the effects of various purgatives were noted. The majority of the latter stimulate the movement of the small intestine. But magnesium sulphate has an immediate paralyzing action. The effect of purgatives may be obtained if these are injected by the vascular or by the intestinal route. Sulphate of sodium injected intravenously into the rabbit affects the intestine by way of the blood and not by way of the nervous system. The intestinal movements following perfusion are much stronger in an animal that has been previously purged. The blood serum and extracts of the organs of an animal recently purged have a markedly stimulating effect upon the perfused intestine of another animal.—*Bulletin Général de Thérapeutique.*

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

(Note.—In the previous article, May 24, 1913, on the Annual Statement of Policy Values, the insurance in force in the largest companies was erroneously stated as between $100,000,000 and $200,000,000, through the omission of a cipher. The correct figures are from $1,000,000,000 to $2,000,000,000.)

*The Surplus.*—An insurance company can not claim to be in a flourishing condition and able to stand up against any shock or calamity unless it has a larger amount constantly on hand than is actually required to meet its liabilities. The individual who lives up to his last dollar, is not regarded as financially sound and courts future trouble for himself and his family. A bank without a healthy surplus would never be regarded as a fit depository by men familiar with business principles. Likewise, a life insurance company is in no position to inspire confidence as an agent to carry out the most sacred of trusts, the protection of dependents, unless it has an ample surplus to insure its ability to fulfill all contracts even though they extend many years into the future and may have to face unexpected emergencies.

In the case of the company used as an illustration in the article entitled "Annual Statement of Policy Values," it was assumed that there was a legal reserve deficit of $4,000,000, and that the accumulated reserve should amount to at least that sum to balance the deficit. If the assets were shown, however, to be exactly that amount, and no more, the company would be on the verge of bankruptcy, into which it might be plunged by losses due to depreciation in the value of securities, excessive mortality, etc., and yet the company would be declared to be legally solvent on the strength of the annual statement. To prevent such misfortune, the additional fund in addition to the legal liabilities must be maintained as a margin of safety. This fund is variously termed "surplus," "indivisible surplus," "unassigned funds," and, according to the New York law, "contingency reserve."

While most, if not all, the well-known insurance companies are conducted on wise and conservative lines, it is true, also, that new companies are being formed with slender resources and that some of those established within recent years are none too firmly entrenched. If an examiner were asked for advice on the subject, he should counsel his inquirer to use the same good judgment in selecting a company that he would employ in buying a horse or a farm and to apply only to a company known to be well managed and established.

Agents, in exploiting the merits of their respective companies, occasionally allude to the ratio of assets to liabilities, and the uninitiated might easily be mislead by the statements made. It should be borne in mind that the strength of a company depends upon the *amount* of surplus funds which it holds in addition to the legal reserve as well as upon the *percentage* which such surplus holds over and above the total liabilities. For instance, according to official statistics, a certain well known company had a surplus at the end of a certain year of nearly $8,000,000 and a ratio of assets to liabilities of 108 per cent. At the same time, a smaller company showed a surplus of 129 per cent., and yet this total surplus fund of 29 per cent. over the liabilities was less than $130,000. A still smaller company showed a ratio of assets to liabilities of 592, whereas the surplus amounted to only $21,000. A single unfortunate transaction, sudden depreciation in values or excessive mortality rate might result in a serious impairment or loss of the surplus belonging to the two companies last referred to, whereas the larger surplus of $8,000,000 would stand many hard blows. The relative strength of companies, then, must be estimated by the amount of extra funds as well as the ratio of assets to liabilities.

The assets of a company are composed of the legal reserve and the so-called surplus. The surplus funds do not represent profits, as they are made up entirely of gains and savings from the premiums paid and the interest thereon, or, in other words, of that part of the excessive payments which is retained as a contingency fund, most of the excess having been returned to the policyholders in the form of dividends. The surplus or excess funds, therefore, are themselves liabilities in the mutual and mixed companies, in the sense that they belong solely to the policyholders. They are retained according to the discretion and conservative judgment of the managing officers, as the maintenance of a surplus is not demanded by law. Safety and security depend upon the amount of these funds, as a few hundred thousand or even several millions of dollars might be lost through some stroke of mismanagement or recklessness. It is not conceivable, however, that the sufficient surplus retained by most companies could be squandered or lost, considering the requirements in the different States for annual statements and publicity of accounts as well as the scrutiny of every step of a company by its competitors and their eagerness to expose every mistake made by rivals.

The assets held by large companies are often regarded by legislators and a few other individuals as unnecessary, an abuse of power or even a menace to the community, though it is difficult for reasoning people to imagine how the accumulation of savings can do harm. At all events, the sense of security and protection enjoyed by policyholders fully justifies the plan, and as every cent of the assets in the mutual companies and the great bulk in stock companies belong to the policyholders, it is a question as to whether they should be a source of concern to outsiders as long as the laws of the State and propriety are complied with.

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**Examiners' Fees in New Zealand.**—The New Zealand Branch of the British Medical Association, in accordance with its prescribed rules, has issued to its members a resolution to the effect that "throughout the Dominion the fee for a life insurance examination be not less than one guinea, but for the purpose of industrial assurance an ordinary certificate of health in place of the present printed form may be given for a fee of half a guinea."

**For the Medical Examiner.**—William J. Stapleton, Jr., offers the following points to medical life insurance examiners: (1) Answer all questions. (2) Give necessary details. (3) Look carefully into the habits of the applicant. (4) Show an interest in the interests of the company. (5) Answer all correspondence promptly. (6) Show as much skill as you can in diagnosing.—*Journal of the Michigan State Medical Society.*

# Society Reports.

## REPORTS OF THE TUESDAY CLINICAL CONFERENCES OF THE NEUROLOGICAL INSTITUTE OF NEW YORK.

FIRST DIVISION—DR. JOSEPH COLLINS.

**Muscular Atrophy Simulating That of Amyotrophic Lateral Sclerosis, Due to Syphilitic "Root Neuritis."**—Dr. JOSEPH COLLINS presenting the patient, who showed in addition to other symptoms a most profound atrophy of the muscles of the back and shoulders, said that at the last meeting of the American Neurological Association he had, in conjunction with Dr. Zabriskie, recorded a number of cases which had muscular atrophy as their most prominent symptom and which were dependent upon syphilitic disease of the cord, its coverings and the emerging spinal roots, the attribution of syphilis as the underlying cause being made entirely by the laboratory findings as these cases had nothing clinically characteristic of syphilis about them. At the same meeting Dr. W. G. Spiller read a paper which set forth a review of his cases of spinal disease with muscular atrophy in which he concluded that many of them recorded as examples of amyotrophic lateral sclerosis and other diseases were in reality dependent upon syphilis.

The patient is a tailor, 39 yrs. old, who had, when he was a child, a great many diseases, including meningitis, typhoid fever and almost all the reputed diseases of infancy. He seemed to have passed through these without entailing any lasting pathological condition. He was pretty well up until May, 1909. About that date he lifted a heavy bag and while doing this he felt "something tear in the heart and I thought I was gone." Two days later he complained of severe pain in the right shoulder blade and he noted he had some difficulty in raising the right upper extremity, at the shoulder, and after a few days the pain subsided, but he has never been able to raise the right upper extremity properly since that time.

Four months later, that is, August, 1909, he remarked the left shoulder and arm began to be weak and in the course of a few days he had difficulty in elevating this

FIG. I

shoulder. With the extension of the disease into the left shoulder there seemed to have been no pain and indeed, aside from the pain which he had shortly after lifting the heavy bag, there has been no pain since then. There had been no pain until four weeks before he came under our observation, which was on November 7, 1910. On that date his complaints were: (1) Cannot raise the right or left arm from the shoulder. The right has been affected

FIG. 2

for eighteen months, the left for twelve. (2) Frequent attacks of pain, apparently in the shoulder blades. The pain ascends the spine and into the occiput. These painful seizures are relieved by rubbing or squeezing, or by holding his arms above his head. (3) Does not sleep well. Is awakened from his sleep by the pain in the head, mainly in the occiput. Frequently is kept awake all night long. These are the spontaneous or voluntary statements of the patient. It is the painful attacks alone which have caused him to seek relief in the hospital. He says the weakness in the shoulder has not inconvenienced him much, he is still able to keep up his work, but the pain is too distressing.

On further questioning he says he has occasional difficulty in swallowing, and some "weakness and pain in the heart." Two weeks before admission he had some difficulty, lasting for ten minutes, during which time he could not speak properly. He could not speak the words he wanted to. In trying to relate to his relatives some account of his trouble, found the greatest difficulty for ten minutes, mispronouncing words and using others entirely out of place. This occurred again in the same day for about ten minutes, but since that time has not been bothered. Has had no difficulty in walking, and he is strong and well and weighs 154 pounds. Is able to do skillful work, garment-making, with his hands, but he has noticed that the left hand grip is getting weaker. His bladder control is good, bowels are regular. Vision is good now. When he has the severest pains he says the vision is poor in the lateral fields. This is not continued over any great length of time, however.

Physical examination at that time showed an atrophy not unlike that which exists at the present time and is best indicated by the accompanying illustrations, Figs. 1, 2, and 3. The tendon jerks all over the body were lively but there was no real pathological increase. The skin reflexes were all present and normal; the plantar reflex was of the flexor type and there was no sign of Babinski phenomena. The pupils were equal and presented a sluggish reaction to light, nevertheless they responded to light.

The condition is one that seemed to justify the statement that they were beginning Argyle-Robertson pupils. There was no disturbance of any form of sensibility.

The electrical reactions of the atrophied muscles were

Fig. 3

those of profound reaction of degeneration; that is no faradic reaction in the muscles most profoundly atrophied, weak response in those less atrophied, with typical qualitative changes in the atrophying and atrophied muscles.

The patient swallows easily and there was no disorder of speech. The blood Wassermann was weakly positive, a state which we interpret as a negative Wassermann reaction unless it is associated with symptoms that are "clinically" of a syphilitic nature.

It might be said in this connection that the patient had a chancre fifteen years ago with common cutaneous secondary manifestations. At that time he had received no systematic treatment and so far as could be learned no treatment after that time. The only indication that the disease was dependent upon a syphilosis of some nature was that the cerebrospinal fluid showed 45 lymphocytes, and excess of globulin, and with it reduced Fehlings. In other words, three of the four so-called reactions of the cerebrospinal fluid were positive.

We were suspicious that we were dealing with an amyotrophic lateral sclerosis. The distribution of the atrophy, the rapidity of its development, what seemed to be the beginning exaggeration of the tendon jerks, all seemed to suggest this diagnosis. The cerebrospinal fluid findings, however, were so suggestive of syphilitic disorder that we determined to put him on anti-syphilitic treatment; and he received at this time one intravenous injection of salvarsan. On February 25, 1911, that is, three months later, there was practically no change in his condition; blood Wassermann was still negative, cerebrospinal fluid Wassermann negative, globulin plus, lymphocytes 38, Fehling's plus.

We then lost sight of him until January 9, 1913, when he returned, saying that he was feeling well and strong, his one complaint being inability to use his arms. The general physical condition on that date was practically the same as on previous examination. Although he says he feels twitching all over his body, particularly in the muscles of the shoulders, no fibrillation is to be seen.

The most noteworthy change, however, is now found in his blood and cerebrospinal fluid, which was as follows: Serum Wassermann, plus; cerebrospinal fluid Wassermann, plus; globulin, plus; cells, 32; Fehling's reaction, plus. In other words, he presents now a most typical and characteristic serological picture of syphilis. Aside from this there is nothing requiring repetition from what has been said before relative to his physical signs. He was then given two injections of neosalvarsan and put on mercurial injections. After a month his blood Wassermann was negative. There has been no particular change in his clinical manifestations.

The interpretation to be put upon this case is that a syphilitic lesion of the nature of a root neuritis of the meninges comprising the anterior roots of the lower dorsal and upper dorsal segments of the cord has practically strangled the motor neurons going to the atrophied muscles. It is quite possible had this condition been recognized at the onset of the symptoms and the patient then put upon appropriate and active antisyphilitic treatment that the severity of the disease, at least, might have been profoundly mitigated. It is scarcely conceivable that a reparation should take place in the peripheral motor neurons that have undergone such decay as in this instance.

The case is presented, however, to substantiate the statement that many of the diseases of the spinal cord other than tabes and so-called syphilitic myelitis (Erb's type of syphilitic paralysis) are probably due to syphilitic infection.

SECOND DIVISION—DR. FREDERICK PETERSON.

**Osteitis Deformans.**—Dr. Foster Kennedy presented the following case: Miss J. C., age 26, complaining of pain and stiffness in the neck. Family history and previous history was negative. History of present condition: At the age of 11 patient began to be troubled with severe growing pains. At the age of 13 she had scarlet fever, after which there was marked enlargement of the cervical gland on both sides of the neck. At the same time was conscious of a feeling of stiffness in the neck. This sensation was progressive over a number of years and at the age of 18 she had considerable pain deeply seated in the neck, on movement. In 1910 an *x*-ray photograph was alleged to show cervical caries and she was put up in extension for some months. After which an immobilizing brace was worn up to the present time. She has had no disturbance of her sphincters, nor has there been any

Fig. 4

change in power in her arms or legs. There has been no objective sensory changes.

On examination the left pupil is seen to be slightly larger than the right; both eyeballs are over prominent. Von

Graefe sign is positive in both eyes. Pain and limitation of movements of the lower jaw, which is said to date from the time when she first began to wear her brace. Both supraclavicular fossæ are full, the left much more than the right, there being a definite feeling of hard and boney resistance in each. Movement of the cervical spine is limited to very slight power of rotation of the head to the right. An attempt at passive movement in other directions produces pain, chiefly local in character, but also radiating down the left arm. Movement is restricted but present in both dorsal lumbar vertebræ. There is no paralysis of any muscle. There are no objective sensory changes. Both superficial and deep reflexes are normal. Heart and lungs normal. The glands in the groin, the axillæ and in the posterior part of the neck are larger than normal. Cerebrospinal fluid, normal. Radiograph Fig. 4, by Dr. Lewis Cole fails to show any evidence of spinal caries. There is, however, an ankylosis between the anterior parts of the bodies of the fourth and fifth cervical vertibræ, which accounts for the symptom.

**Juvenile General Paralysis.**—Dr. PETERSON presented a patient who had been sent in with the diagnosis of cerebral tumor. The patient was a boy of 18 who had had headaches for five months with some incoordination of gait and station and some weakening of memory. The parents were Russian Hebrews and no very definite history farther than this could be elicited. The symptoms on the mental side were some failure of memory together with a feeling of well-being out of proportion to the actual disorder present, and on the physical side tremor of hands, face, tongue, the characteristic paretic speech, unequal Argyll-Robertson pupils, and much exaggerated wrist, elbow, knee, and ankle jerks, with ankle clonus. The diagnosis of juvenile general paralysis of specific origin was corroborated by positive Wassermann in the blood; and in the spinal fluid positive Wassermann, together with excess of globulin and 52 lymphocytes to the cm.

Cases of general paresis under twenty years of are are extremely rare, and are usually based upon hereditary lues. Whether the specific disease in this instance was hereditary or acquired could not be ascertained. The patient was the youngest of six children, the others being healthy.

THIRD DIVISION—DR. PEARCE BAILEY.

**Syphilitic Muscular Atrophy.**—In presenting a patient with this diagnosis, Dr. BAILEY said that local atrophy of

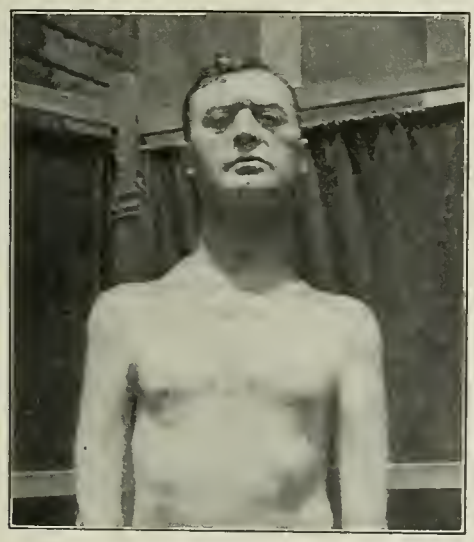

FIG. 5

spinal origin had often been noticed with syphilis as a direct cause, but in such cases the clinical course of the disease and distribution of the symptoms had usually been different from the abiotrophic forms. The course had been more or less acute and non-progressive, and had usually been associated with great pain and stiffness of the spine, suggesting a localized meningitic affection. In the case presented here, in which the evidences of intraspinal

FIG. 6

syphilis were incontestible, the course and symptoms had followed very closely those of the Duchenne-Aran type, and brought out very forcibly the necessity of determining in all cases of progressive muscular atrophy, whatever their form or course, whether or not syphilis were the exciting cause. Although in the present case the disease had existed too long to make it possible to expect much from therapeutics, it seemed reasonable to suppose that certain cases of syphilitic atrophy, if detected early, might be arrested.

Patient R. A., bookkeeper, 35 years of age, entered the Neurological Institute May 15, 1912, complaining of paralysis of the muscles of the shoulder girdle and arms. The disease had existed for nine years, during the first five of which it had been progressive, but for the past four years it had been stationary. Syphilis was denied, but, as is frequently the case in late appearing syphilis, the patient admitted having had a soft chancre fourteen years before, for which the treatment was only local. There was no history of trauma, and the patient was moderately alcoholic. Father died at 61 of apoplexy. There was no evidence in the family history of predisposition to any such disease as that from which this patient is suffering. He was well and strong as a youth. In 1894, when he was 17 years old, he began to drink very heavily. He kept this up until 1900; when he was 23 years old he took the Keeley cure. Since this he was a total abstainer for two years. Since then he has drank some, but not to excess, chiefly beer recently.

His present trouble began in 1903. At that time he was a regular in the Army. He first noticed that the biceps muscle in his right arm was growing weak. Following this the right hand would frequently tremble and shake and he found there was a certain awkwardness in using the whole upper extremity. This remained about stationary for three months, when the other muscles began to grow weak, and there was a noticeable wasting, chiefly in the arm and shoulder muscles. The condition slowly progressed, the muscles in the shoulder gradually growing more and more weak. Eight months later the left arm took identically the same course as the right had. The weakness and atrophy in this side, however, has progressed to a greater degree than the right. For the past four years there has been no increase in weakness or atrophy. He has frequently noticed fibrillary tremors in the affected muscles (these can be plainly seen now). His lower ex-

tremities were not affected until 1909; from that time until the present he finds that he tires more easily than formerly. There is a slight wasting of the left thigh and leg. He states that the right leg is decidedly stronger than the left.

Examination: There is great prominence of the lower cervical and upper dorsal spines due to falling of shoulders and weakness of trapezii. There is marked scoliosis to the right in the mid dorsal line. In the lower dorsal the spine is rigid and bends but very little below this. The muscles of the back of the neck are wasted to a very marked degree, permitting the spinous processes to be very plainly felt from the tips of the junction with the bodies. The patient carries his head with the chin well elevated and the neck arched forward in an effort to compensate for the loss of muscle support in the back of the neck.

Muscular power: The patient's arms hang by his side and he is unable to raise them except by swinging the body to one side so that the hand of the opposite side is swung past the median line and grasped by the other hand. Then by using his pectoral muscles and by swinging the arm forward he manages to bring them up so that the hands, clasped together, are thrown upon his chest. So long as he keeps them in this position he is able to use his hands for eating, shaving, etc., that is by grasping one wrist he is able to use the other hand for certain things.

Fig. 7

If he does not tightly grasp the opposite wrist both hands flop lifelessly to his side. He has absolutely no power in either biceps, deltoid or scapular muscles. Flexion and extension of the wrists only fair. Pronation and supernation are very weak in the forearm, absent in the arm. The triceps of both arms are still slightly preserved. The hand muscles of the right side are fairly strong and are not atrophied. Those of the left are atrophied and very weak. The muscular power is much better in the whole right side than in the left.

Electrical examination, May 17, 1912: The muscles of both shoulder girdles give the reaction of degeneration with the exception of the deltoids in which there is partial RD; the left side being worse than the right. Both biceps show RD. In the triceps there is marked qualitative and quantitative diminution to both the faradic and galvanic currents, but no RD. The extensors and flexors give the same reaction, but the flexors of the forearms are in better condition than the extensors. The intrinsic muscles of the right hand respond in a normal manner; those of the left hand give the reaction of degeneration. The lower limbs respond normally to both currents. The conductivity of the nerve trunks in both upper and lower extremities is normal.

Other symptoms noted were as follows: Knee jerks present, R. L.; ankle jerks present, equal. Sensory symptoms absent. There were no cranial nerve pulses, with the exception that the pupils, which were equal and 5 mm. in diameter, were sluggish to light and in accommodation. The speech was normal and there were no evidences of visceral disease.

What first attracted attention as to the possibility of these symptoms being outside the group of ordinary progressive muscular atrophy was the rather unusual distribution of the wasting and loss of power. The muscles of the shoulder girdles were affected out of proportion to those of the hands, and also the muscles were affected higher up in the neck than is usually the case in the simple progressive muscular atrophy. So that, in spite of absence of the history of syphilis or of pain in the development of the disorder, syphilis was thought of at once and the patient was subjected to serological examination. This showed a positive Wassermann in the blood, and in the cerebrospinal fluid a positive Wassermann, a positive Fehling reduction, and 16 cells per cm. With these definite evidences of syphilitic involvement of the spinal cord, salvarsan, 0.6 dram, was given intravenously on May 21 and June 7. There was no reaction from either of these injections, but after them the patient felt considerably stronger and used his legs better, so that by the middle of June he could walk further than at any time during the past three years. The shoulder muscles showed no improvement, but the forearm and arms were considerably stronger. A repetition of the serological examination on June 18th showed that the Wassermann reaction was now negative in the blood, but remained unchanged in the spinal fluid, and the cells in the spinal fluid had increased. So the most that we can infer from the effect of the treatment of this case is that the salvarsan had acted as a tonic, but had not changed the intraspinal conditions. It was repeated on June 18, after which the patient left the hospital.

This case is shown to call attention to the necessity of determining whether or not syphilis exists in all cases simulating progressive muscular atrophy.

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

*Stated Meeting Held February* 13, 1913.

Dr. Henry Dwight Chapin in the Chair.

**A Case of Polymyositis with Multiple Lime Deposits in a Boy Five Years of Age.**—Dr. Sara Welt-Kakels presented this patient. His family history was negative, giving no indication of lues or of any hereditary nervous disposition, and no one in the family had suffered from a similar disease. The parents had been married eight years and had one other child, who was in good health. The patient was born at full term and there was nothing abnormal in connection with his birth or early childhood until his present illness, with the exception of ophthalmia neonatorum from which he recovered after a few weeks. In April, 1911, he became indisposed, lost his appetite, and suffered difficulty in walking. He could not go upstairs and walked on his toes. About three weeks after the onset of the prodromes, an exanthema appeared which was taken to be scarlatina and which lasted about eight days. The face became edematous, mainly in the palpebral region. He could not move his limbs, as both active and passive motion were very painful, especially in the joints of the back. The sensorium remained clear during his entire illness. He was entirely helpless for two weeks and confined to his bed for eight weeks. The eruption was followed by a distinct desquamation; there was, however, no exudate on the tonsils and the urine was free from albumin. He did not make a good recovery and his condition was variously diagnosed by different physicians as encephalitis, spastic paralysis, muscular dystrophy, poliomyelitis anterium, acute muscular rheumatism, toxic arthritis, and spondylitis. After treatment by a masseur the boy began to improve and the swelling in the extremities receded. During this period the boy suffered repeatedly with an itching eruption like urticaria. The patient improved for a time but in January, 1912, he again complained of pain and the former condition recurred. In

September, 1912, he was brought to the children's department of Mount Sinai Hospital. At present he was poorly nourished and there was slight elevation of the temperature. The face appeared bloated and tense and there was slight edema of the cheeks and eyelids. The pupils were equal and reacted to light; the fundi were normal. The buccal and pharyngeal mucosa were reddened; the anterior and posterior cervical gland considerably enlarged; the axillary, cubital, and inguinal glands slightly enlarged. The viscera of the abdomen and thorax were normal; the spleen was somewhat enlarged, its anterior margin being palpable. There was a urticaria-like eruption on the skin of the trunk and lower extremities. Similar eruptions repeatedly appeared and disappeared. The skeletal muscles were thin and flabby, especially on the left arm. There was motion in all joints except those of the hands, mainly the left hand. The motion of the ankle joint was slightly limited. The superficial and deep reflexes were normal, but the tendon reflexes of both upper extremities were slightly diminished. There were no facial phenomena. Electrical irritability was normal, as were also the sphincters. The left hand was considerably swollen, painful on pressure, edematous, and purplish in color. There was no pitting. The infiltration extended beyond the phalanx of the middle finger. A similar but less marked condition involved the right hand. There were three indurations in the right gluteal region which were not painful on pressure and a somewhat larger induration in the left gluteal region.

**Transfusion for Persistent Hemorrhage Following Sepsis.**—Dr. A. L. Soresi reported this case. The child was transfused last November, at which time there was running from both ears and the fingers and eyelids were purulent. The gums were soft and bleeding, and the child was found to be suffering from empyema. On account of the poor condition of the patient and a persistent cough general anesthetics could not be administered. An incision was made under local anesthesia (cocaine, 1 to 500) and pus was evacuated from the left pleural cavity. Forty-eight hours afterward the wound was still bleeding. The bleeding from the gums had increased and the child was in a desperate condition. The hemoglobin had gone down to 25 per cent. Transfusion was advised and accepted. A maternal cousin was the donor. The external jugular vein was used, as could be seen by the scar. The transfusion was stopped after six minutes when the hemoglobin had gone up to 70 per cent. The child began to improve, the bleeding stopped, and recovery followed. It was Dr. Soresi's opinion that the child's life had been saved by the prompt employment of direct transfusion.

**Remarks on the Etiology and Pathology of Hemorrhagic Disease in the Newborn.**—Dr. Oscar M. Schloss read this paper. He recalled that among the earlier writers hemophilia was considered a frequent cause of hemorrhage in the newborn, but that more recent studies had shown that most cases had no relation to true hemophilia. However, in a small group of cases, hemophilia unquestionably played an important part. These were the cases in which there was a distinct family history and in which if recovery took place the individual remained a bleeder for life. Many cases of hemorrhage in the newborn were no doubt due to bacterial infection. This view was supported both by clinical evidence and by post-mortem investigation. In a number of epidemics of hemorrhagic disease in institutions there seemed to be a direct relation between the number of cases of puerperal infection and of hemorrhage in the newborn. Finkelstein divided the cases of hemorrhage in the newborn due to bacterial infection into two groups. In the first group the pyogenic organisms were considered the causative agent. In some of these cases there was direct evidence of pus formation in connection with localized suppuration, while in others the pyogenic organism, whether alone or in connection with saprophytes, such as the *Bacillus pyocaneus* or some member of the protean group, was the supposed cause of the hemorrhage. In the second group of cases special hemorrhage-producing organisms were considered the causative agent. In most instances these organisms caused hemorrhagic forms of septicemia in animals. Bacteriological studies had yielded very inconstant results, a great number of different organisms having been isolated from the bodies of infants who had had hemorrhage during life. As most of these organisms were obtained on post-mortem examination their presence might be due to post-mortem invasion. Syphilis seemed to be an important factor in the etiology of hemorrhage in the newborn and evidence seemed to indicate that congenital syphilis caused definite vascular changes and was frequently associated with hemorrhage and that in many cases it was the only determinable factor. In addition to the general diseases there were certain local causes of hemorrhage in the newborn, such as gastric or duodenal ulcer. Chloroform poisoning had been suggested by some writers as a cause of hemorrhage in the newborn, but investigators had differed on this subject, and the final solution of the question must depend upon further study and experiment. It seemed rational to believe that the ultimate cause of bleeding was some pathological condition of the blood vessel or some defect of blood coagulation. There was no constant pathological condition of the blood in hemorrhage of the newborn. The fact that these hemorrhages were apparently due to different pathological conditions, together with the fact that investigation of the blood failed to show the presence of any uniform change forced the conclusion that the hemorrhage was merely a symptom to which there existed a predisposition during the first ten days of life. On the other hand, there was a uniform pathological condition common to all cases which was at present unknown. It was desirable that *tuba vitam* blood cultures should be made in these cases of hemorrhage in the new born, for it was only by this means that the true rôle of bacterial infection could be determined.

**Hemorrhagic Conditions in Children: Etiology, Pathology and Treatment.**—Dr. A. L. Soresi presented this communication. He said that all hemorrhagic diseases of the newborn should be grouped together under the name of hemorrhagic diathesis, because their pathology and etiology was little known and they seemed to be merely symptoms of different pathological conditions rather than distinct pathological entities. It seemed that the conditions found in the blood and blood vessels were not primary but the result of faulty general metabolism. Besides the hemorrhage, which could be called spontaneous, the blood either did not coagulate immediately as in normal conditions or did not coagulate at all. This distinguished hemorrhagic conditions from hemorrhage where the blood had a tendency to coagulate which was more marked the more severe the hemorrhage was. Of all the agents which had been thought to be the cause of hemorrhagic disease, such as syphilis, rickets, anemia, infectious diseases, faulty intestinal and hepatic function, improper food, etc., any one might be the known cause in a single case, but none of them individually, nor all together could explain the majority of cases of hemorrhagic disease. The theory that hemorrhagic disease depended on an abnormality of the capillaries had a certain anatomical basis, although there was no evidence to prove it. This did not explain the late or wanting coagulability of the blood. Whatever were the elements which retarded or prevented coagulation, it was evident that they were the result of faulty metabolism. The fact that hemorrhagic diseases were more prevalent in children seemed to show that the different organs of the body had not yet reached a harmonious collaboration between themselves and the pathology of these diseases would be clearer if they were studied together with some conditions disturbing general metabolism of adults, such as pernicious anemia, diseases of the liver, infectious diseases, chloroform poisoning, etc., in which there was a tendency to spontaneous hemorrhage and a lack of coagulability of the blood. Post-mortem findings showed only a lack of coagulability of the blood and the diagnosis in these cases was easy. Prophylaxis could do some good in hemophilia and scorbutus. Salts of calcium, styptics, and gelatin had been found of very limited value. In scorbutus and purpura change of diet and fruit juices had been found very valuable. The best and really the only effectual treatment had been what was called the physiological treatment, that was, the treatment which supplied the principles in the blood which favored coagulation and which were lacking in the patient. This physiological treatment must be considered under two different view points: First, when the patient was seen early and the only indication was to stop the bleeding, and, second, when the bleeding was very persistent and the patient had lost a great amount of blood. In the first instance horse serum and when available human serum should be employed as soon as possible. In the second instance transfusion should be resorted to as soon as possible. The injection of serum introduced thrombin into the system, which would establish the normal balance of antithrombin and thrombin or prothrombin, so that the circulating blood would be able to react normally. In some cases of hemophilia further bleeding had been stopped by applying a piece of gauze soaked with blood obtained from another person. It was evident that the injection of serum could only stop further bleeding but could not supply the morphological elements of the blood

lost through hemorrhage. As the elements favoring coagulation were at present unknown, but were all present in normal blood, it was logical to conclude that the introduction of full normal blood into the patient's system was the most rational treatment. Only one consideration could favor the use of defibrinated blood and that was if it could be proved that in defibrinating the blood new elements favoring coagulation were formed or the ones existing in the blood made more active. The strongest argument in favor of direct transfusion was that many cases had been benefited and cured by its use which had received previously all other treatments, while no case where transfusion had failed had been cured by another means. This assertion was based on an experience with 31 cases of hemorrhagic disease in the newborn, of which 28 were cured and 3 died; with 23 cases of hemophilia, of which 21 were cured and 2 died; with 6 cases of scorbutus, of which 3 were cured and 3 died; with 9 cases of purpura, of which 8 died and only 1 was cured. It could be said that in the direct transfusion of blood when properly performed surgeons had a specific remedy for hemorrhagic diseases with the exception of purpura. The idea that direct transfusion was difficult of execution had prevented this method from becoming generally applied. Transfusion should not be resorted to too late and its technique must be perfect. To avoid coagulation the greatest care must be taken not to injure the intima of the blood vessels. The author's instrument was intended to prevent this. It was composed of two little tubes crowned at one end with four hooks, held together by a little bar and screw. The blood vessels were carefully isolated, one of the tubes was passed under the blood vessel of the recipient and cuffed over the hooks; the same thing was done with the blood vessel of the donor. Both blood vessels were cut close to the edge of the cannula and put together by inserting the bar of one-half of the instrument into the corresponding hole of the other. The next important point was the selection of the blood vessels to be anastomosed. For the recipient the best was the external jugular vein; for the donor a vein of the forearm should be selected, as there was absolutely no reason for sacrificing the radial artery. Many failures were due to the fact that surgeons had not mastered their technique; therefore, no one should attempt transfusion who had not mastered the technique on living animals.

**The Treatment of Hemorrhagic Conditions by the Injection of Human Serum.**—Dr. Roger Herbert Dennett read this paper for Dr. John Edgar Welch. Dr. Dennett said that the first case of this kind which he had seen with Dr. Welch was that of a child who had had a hidden meningeal hemorrhage and was practically moribund. He was six days old and the hemorrhage had been going on for three days. Six or eight hours after the injection of human blood serum the entire condition changed, just as had been described as taking place after a transfusion. Shortly after the second injection the child began to nurse again. Lumbar puncture had been done to confirm the diagnosis of hemorrhage and pure blood was withdrawn from the spinal canal. A second lumbar puncture the day after the injection of the human blood serum showed that no hemorrhage was taking place. Dr. Dennett said he wished particularly to mention this case because it had been said that desperate cases of hemorrhage should be transfused. Dr. Soresi had mentioned that there were two great advantages in transfusion, the cessation of bleeding and the formation of new blood. Even if it were claimed that all the serum did was to stop the bleeding, it was remarkable how quickly infants seemed to be able to add to their blood supply. Dr. Welch called particular attention to the use of the serum after the hemorrhage had ceased. The more experience they had the more they favored using the serum for four or five days after the cessation of the hemorrhage. The speaker cited a case in which after the serum had been employed for two days they thought the hemorrhage had ceased and discontinued the use of the serum; on the fourth day there was a recurrence of the hemorrhage and the child died in consequence. Had they followed the rule of continuing the use of the serum for four or five days the child might have been saved. Of course, neither human blood serum nor transfusion could cure syphilis or septic infections, nor could these agents cure ulcers of the gastrointestinal tract. One could not expect human blood serum or transfusion to act as a panacea for all hemorrhagic conditions, but until these conditions were better classified they must use the human blood serum or transfusion in all cases that came along. Dr. Soresi was so proficient in transfusion work that he felt sure that he had led them to believe that the technique was easier than it really was.

**The Treatment of Hemorrhagic Conditions by the Injection of Whole Human Blood.**—Dr. Leo John Joseph Commisky read this paper in which he recalled that whole blood was first used in the treatment of hemorrhage of the newborn by Dr. Schloss in 1908 and that since that time 21 such cases and two cases of hemorrhage in older children had been treated by this method. Of this number, fifteen recovered and six died. Of the two cases of hemorrhage in older children, one a case of bleeding following the extraction of a tooth, and the other in a child suffering from erythema nodosum, who developed a purpura hæmorrhagica and bled from the mucosa of the mouth, both recovered. This group of cases included all types of bleeding and comprised among the fatal cases several which were practically moribund at the time of treatment and also several that died not on account of hemorrhage but because of an underlying septic factor. Such cases could with propriety have been omitted from their statistics, but an accurate estimate of the therapeutic value of any measure could only be made by the results from all cases. The blood was usually taken from the vein of the forearm by means of an exploratory syringe and was injected immediately into the infant's back before the blood had had time to clot. The blood was usually obtained from one of the parents or a relative. Whole blood possessed the advantages of being readily obtained, of requiring no complicated apparatus, and of being available for immediate use. As hemorrhage of the newborn was due to different pathological conditions the injection of the unchanged blood, which contained all the elements essential for coagulation, seemed to be an advantage. An objection had been raised to the use of the whole blood on the hypothesis that the cells must be broken up and excreted and in consequence put an extra strain upon the organism; in practical experience this was of no real importance. The blood was quickly absorbed, usually in from two to four hours, and for some reason did not coagulate in the tissues. Injections of whole blood had been given to feeble and premature infants with a decidedly beneficial effect and in no instance had there been any harmful influence. Injections had been given to a number of extremely marantic infants and so far as pulse, temperature, respiration, weight, and the condition of the urine was concerned there was no deviation from the previous condition. While the statistical results obtained by this method were not striking, fatal cases were included in which the method had not been given a fair trial. In a number of cases that recovered the hemorrhage was of a very severe type and the results after the use of the whole blood were most convincing. There were certain cases of hemorrhage in the newborn in which it was scarcely conceivable that any ordinary therapeutic measures could be of much benefit. It seemed improbable that the injection of whole blood or even transfusion could influence the cases of generalized bacterial infection. There was also a class of cases of profuse and rapid bleeding in which nothing except immediate transfusion could offer any hope of success. In some of the earlier cases they now believed the quantity of blood used was too small; the best results were obtained from 20 to 30 c.c. repeated every six or eight hours as long as the hemorrhage continued. Transfusion was the ideal method, but required more surgical skill than was usually available; if, however, after giving the injections a fair trial, the hemorrhage was not controlled an immediate resort to direct transfusion was indicated.

**Treatment of Hemorrhagic Conditions by Direct Blood Transfusion.**—Dr. Henry M. Lyle said that in all pathological hemorrhages the simpler method of serum and whole blood injections should be tried before resorting to blood transfusions. In severe acute hemorrhages saline infusions or blood transfusions were indicated. If the value of a procedure was measured by its simplicity, then the technique of transfusion was not ideal; direct blood vessel suture required special training and skill. The cannula method had placed in their hands a much simpler mean of transfusion. Dr. Lyle said that his experience had been limited to the use of the Crile and Elsberg cannulas and the latter had given great satisfaction. The use of fine paraffined gold tubes, as described by Carrel, was undoubtedly the simplest method. If clinical experience substantiated the promise of this procedure they would have a technique that could be performed by any physician and that was what they needed. It was now a well-established fact that severe acute cerebral anemia, though lasting only a short time, might do irreparable damage to the central nervous system. To prevent such a disaster prompt action was required and the ordinary transfusion was not practicable under such

circumstances. These patients could be resuscitated to the extent that they performed automatic functions, but the central nervous system never recovered from the cell destruction caused by the anemia, and after a longer or shorter period the automaton died, or, if he recovered, it was with a permanently damaged nervous system. This occurred most frequently in operations on small children. ordinary transfusion would not be applicable in such cases. A simple method of blood transfusion might avert such a disaster. In Bier's method of blood injections for ununited fractures, 20 to 30 c.c. of blood was withdrawn from the patient's vein and injected between the bones. The medium to prevent clotting was warm sterile salt solution. The objection to this method was the rapidity with which the blood clotted. In order to overcome his difficulty Dr. Lyle drew warm sterile liquid albolene through the needle into a Record syringe and then expressed the contents so that only a very fine film of albolene remained. In this manner 30 to 60 c.c. of fluid blood could be withdrawn and kept in the syringe for a considerable time. It might be possible to use this technique as an emergency transfusion. It seemed to the speaker that a similar method of double paraffined needles had been used or suggested in the children's service at Bellevue Hospital. Dr. Lyle presented photomicrographs of the blood of patients who had been transfused for pernicious anemia. Fifty per cent. of the leucocytes of the recipient contained red blood cells of the donor. Technically the transfusion was perfect but clinically it was a failure, the patient dying after twenty-four hours. All the biological tests were carried out before the transfusion yet they gave no indication of what followed. This case sounded a note of warning in regard to the treatment of pernicious anemia by transfusion.

Dr. George Dow Scott asked why they did not use horse serum in these cases of hemorrhagic conditions in the young, serum obtained from a young animal.

Dr. Alfred F. Hess said that he had seen a number of these cases and doubted whether blood cultures would in all cases give a proper estimate of the condition. The question arose as to whether bacteria entered the blood current after severe hemorrhage or loss of blood; in animals this did occur. It was possible that it might take place in human beings. In the cases which Dr. Schloss had reported it was not intended to state that the condition was due to bacterial infection, but that merely routine blood cultures on these cases might give a false idea of the etiology of the condition. Dr. Hess recalled a case of syphilis with marked bleeding from the nose in which transfusion was unsuccessful, although it caused an increase in the red cell count of the hemoglobin. The oozing continued and the child died; the autopsy findings were absolutely negative. Recently he had met with a similar case of syphilis in which transfusion was performed and horse serum was also employed. Dr. Hess believed that syphilis played an important rôle in the etiology of these conditions and here the injection of serum or transfusion of blood did not promise the same good results as in other conditions characterized by severe bleeding.

Dr. Herman B. Sheffield asked Dr. Soresi if transfusion was considered valuable in cases of persistent hemorrhage following circumcision.

Dr. J. Milton Mabbott asked whether at the maternity hospitals at the present time the blood naturally lost by a woman in the third stage of labor was ever used in the treatment of children suffering from hemorrhagic disease, referring of course to the children of other mothers. Could such blood which went to waste be used to furnish serum for such cases?

Dr. Oscar M. Schloss, in reply to what Dr. Hess had said about the second case, said he wished to emphasize that the point made was one they should always have in mind in taking blood cultures from autopsy material. This case was, however, an ante-mortem invasion. There were distinct endocardial invasions and as was well known these were of bacterial origin. Again an organism had been obtained which was capable of producing the condition. Dr. L. E. LaFetra had asked him to mention two cases that he had had in his service at Bellevue Hospital which he was unable to report in person. The first of these was an infant one and one-half days old who bled from the intestines and vomited large quantities of blood. When brought to the hospital the infant was cold and greatly prostrated. The pulse was barely palpable, the respirations very rapid, and the infant did not respond at all when examined. There was oozing of dark blood from the anus and this blood did not coagulate. Thirty c.c. of whole blood from a normal adult, not of the same family, were administered. The next day the infant was jaundiced but no free blood appeared in the stools and no blood was vomited. The stools were slightly tarry. Forty c.c. placental blood serum were then given and three weeks later 20 c.c. of the mother's blood was administered. From that time no more blood appeared and the infant made a good recovery. The second case was that of a boy seven years of age, with purpura hæmorrhagica, blood appearing not only in the skin but from the intestines as well. Human blood serum injections were given but were followed by only a slight improvement. An arm-to-arm transfusion was then done and the patient was apparently cured temporarily. In a few weeks the bleeding returned and the patient was then treated by injections of whole blood in large quantities. The child improved and the hemorrhage disappeared. After this there was another recurrence which was treated in the same manner and the condition again cleared up and there had been no recurrence.

Dr. A. L. Soresi said that he did not wish to be understood as objecting to the use of serum in these cases, but he wished to point out its limitations and inconveniences. The fact that its use must be continued for days and at times as much as 500 c.c. of serum given showed that it was inferior to direct transfusion which was done only once, and furthermore, the amount of blood from which the 500 c.c. of serum were extracted was at least 800 c.c.; this amount would be greatly superior if used by direct transfusion. At times only a few c.c. of blood was necessary in infants. The injection of whole blood was by no means a new procedure having been employed by surgeons before the aseptic era. It was abandoned because the elements of blood were very liable to be injured and when injected had to be absorbed. Having been injured they could not take up the work of general metabolism and must be eliminated, while when directly transfused the blood was intended to have its elements continue in the system of the recipient the function they were fulfilling in the system of the donor. Dr. Soresi emphasized the point that transfusion was a very simple procedure with the instrument he had just described and by using the external jugular vein for the recipient. As to the tubes invented by Tuffier of Paris, it was well to remember that Tuffier himself recommended having ready some other cannula as the bleeding was liable to clot in its passage through his tubes, and he went so far as to give a description and a picture of the Elsberg cannula. The technique lately recommended by Dr. Carrel, that of using the radial artery of the donor and a vein of the leg of the recipient, deserved special mention. It was not to be recommended in every case, but only when the external jugular was not available. He had himself very successfully used a vein of the left leg in doing a transfusion for Dr. Bainbridge at the Skin and Cancer Hospital two years ago. But to recommend its use in every case would be a great mistake. In cases where shock was present transfusion not only did not help the patient but lessened his chances of recovery; in such cases the heart should be supplied with new blood so that it could put in circulation again the blood that had accumulated in the abdominal vessels. By transfusing through the leg one only increased the already abnormal congestion in the abdominal vessels, thus making the patient worse. It was only necessary to mention that the veins of the leg in children could not be used because of their small size. Transfusion of blood should not be resorted to in cases of pernicious anemia as the disease was a manifestation of faulty metabolism causing destruction of the elements of the blood; the blood transfused underwent the same changes as the blood of the patient. With regard to the use of large quantities of horse serum, the inconveniences reported were that the serum caused hemolysis of the elements of the blood of the patient and serum sickness, and hence it had been abandoned. As to the danger of a too rapid flow of blood when using the external jugular vein, if the blood was flowing too rapidly it was only necessary to make a gentle compression on the blood vessel of the donor to regulate the flow.

Dr. Roger Herbert Dennett said that if one used a large amount of horse or other animal serum, he was likely to bring on "serum sickness," a condition which should be avoided. There were many cases of hemorrhage occurring in the newborn, as well as of hemorrhage following circumcision, which could be helped by the use of human blood serum as well as by transfusion. He had adopted the whole blood method in the last two cases which he had seen. Both children were in poor condition and after collecting blood for the preparation of the serum, he attached a syringe to the needle which still

remained in the vein of the donor and removed 10 c.c. of blood which he injected subcutaneously into the baby in order to save time while waiting for the blood serum. If the whole blood were used each time it would be necessary to tap the vein of the donor for each dose, while by collecting four or five ounces of blood at a time enough serum could be obtained to last for twenty-four hours. For that reason he chose whole blood for the first injection to be followed by the use of the serum.

Dr. Henry M. Lyle said that he could not entirely agree with Dr. Soresi's conclusions of the uselessness of Dr. Carrel's advice. In operative work one often came face to face with conditions that would necessitate the use of a vein of the leg. Another point to be taken into consideration was the liability of a weak anemic heart to acute dilatation; it would seem that if transfusions were made into the external jugular, there would be a slightly greater risk of acute dilatation and that this would occur more rapidly. A sharp lookout should be kept for this complication, and if it happened prompt mechanical treatment should be instituted. Judiciously employed transfusion was valuable; injudiciously employed it would become discredited.

# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

### Medical Examining Board of Virginia.

*June*, 1912.

#### ANATOMY.

1. Name and describe the nerves which supply the eye.
2. Describe the aorta and name its branches.
3. Locate and give description of the kidney.
4. Give common characters of ribs—name and tell in what way the peculiar ribs differ from the others.
5. Name and describe the adductor muscles of the thigh.
6. Describe the ureter.

#### HISTOLOGY.

1. Name the elementary tissues of the body.
2. Name the forms of muscle and state principal location of each.
3. Give principal sources of white and red blood corpuscles.
4. Give histological structure of spleen.

#### PHYSIOLOGY.

1. Describe normal urine; giving color, specific gravity, reaction, visible contents and amount daily secreted.
2. Give amount of solids secreted daily by a healthy man. Of what do these solids mainly consist?
3. Under what conditions does albumin appear in urine?
4. Give methods of stimulating muscles to contraction.
5. What is meant by clonic and tonic contraction of muscles?
6. Name the ductless glands, giving location of each.
7. What substances must be taken into the body in order to afford proper nutrition to the cells and in what forms are these substances excreted from body after being utilized by cells?
8. Give function and location of gall-bladder and its connections with other organs.
9. What condition of the blood causes the phenomena known as dyspnea, apnea, and asphyxia?
10. As regards respiration, what is meant by tidal air? Reserved air? Residual air?

#### EMBRYOLOGY.

1. Name different types of embryonic cells. In what structures of body is each type chiefly concerned?
2. From what sources does the placenta derive its structure and what are the three functions of placenta in fetal life?

#### CHEMISTRY.

1. Name four classes of the compounds of C.
2. Tell something of Bi., naming its medicinal salts, and the preparation of the subnitrate.
3. What do you mean by proteolytic changes, and give an example.
4. Name a source of the following: (1) Myronic Acid. (2) $C_2N_2$. (3) Dextrin. (4) Paraffin.
5. Name five substances obtained from the destructive distillation of crude petroleum.
6. What are the amido acids and what is their importance?
7. In a case of infantile diarrhea how could you determine if (1) protein, (2) fats, or (3) starch were undigested by an examination of feces?
8. Give a test for (1) acetone, (2) bile pigments in urine.
9. Give the solubility or the reverse of following: (1) $AgNO_3$. (2) $Ca_3(PO_4)_2$. (3) $PbSO_4$. (4) $CaCO_3$. (5) NaCl. (6) $MgCl_2$. (7) Fe S. (8) $N_2SO_4$. (9) $NaNO_3$. (10) Zn O.
10. Give the chemical composition of average atmospheric air.
11. Name chemical constituents of urinary calculi.
12. Give chemical test for presence of morphine.

## ANSWERS.

#### ANATOMY.

1. The nerves which supply the eye are the second cranial, or optic nerve; the third cranial, or motor oculi; the fourth cranial, or trochlear; the sixth cranial, or abducens.

Second or Optic. "*Origin:* from optic tract, which arises by two roots: *Outer,* from external geniculate body, optic thalmus, and brachium of superior quadrigeminal body. *Inner,* from internal geniculate body. *Course.*—Winds across outer and anterior surfaces of crus cerebri, uniting with fellow to form optic commissure, which is bounded in front by the lamina cinerea and behind by the tuber cinereum; the nerves separate at fore part of commissure, get ensheathed in arachnoid, and pass into orbit through optic foramen above and internal to ophthalmic artery; while passing through, each receives a tube of dura mater, which divides into two, the outer piece becoming orbital periosteum, and the inner, ensheathing the nerve, joins the sclerotic in front. The nerve pierces sclerotic and choroid coats of eyeball. *Distribution.*—Expands to form retina. *Special function.*—Nerve of sight."

Third or Motor Oculi. "*Superficiol origin:* inner side of crus cerebri, just in front of pons. *Deep origin:* floor of aqueduct of Sylvius. *Course.*—Pierces dura mater to enter canal in outer wall of cavernous sinus near posterior clinoid process, lying above and internal to fourth nerve. As it passes forward to enter orbit through sphenoidal fissure, the fourth nerve and frontal branch of fifth cross and become superior to it. It divides into two branches in the fissure, which enter orbit between the heads of the external rectus, the nasal branch of the fifth lying between the two; while in cavernous sinus it communicates with cavernous plexus. *Distribution.*—Superior branch supplies superior rectus and levator palpebræ. Inferior divides into three for internal rectus, for inferior rectus, and for inferior oblique, which latter gives off short or motor root to the lenticular ganglion. *Special function.*—Motor nerve of eyeball."

Fourth or Trochlear. "*Origin—Superficial:* valve of Vieussens, just behind corpora quadrigemina. *Deep:* floor of aqueduct of Sylvius. *Course.*—Winds round outer surface of crus cerebri and pierces free border of tentorium; passes forward in outer wall of cavernous sinus below third, but enters orbit through sphenoidal fissure above and internal to the other nerves and external rectus. *Distribution.*—Enters orbital surface of superior oblique. *Special function.*—Motor nerve of superior oblique."

The sixth or Abducens Oculi. "*Origin—Superficial:* from the sulcus between the pons and medulla, anterior to the anterior pyramid. *Deep:* floor of fourth ventricle beneath fasciculus teres. *Course.*—Pierces dura mater on basilar process and grooves side of dorsum ephipii to reach cavernous sinus; lies to outer side of internal carotid, and below the other nerves. Enters orbit by sphenoidal fissure, between the heads of the external rectus, lying above ophthalmic vein. *Distribution.*—External rectus (ocular surface.)" (*Aids to Anatomy.*)

2. The aorta commences at the upper part of the left ventricle of the heart, ascends for a short distance, then arches backward and to the left, passes over the root of the left lung, then down the left side of the spinal column, passing through the aortic opening in the diaphragm, and terminating opposite the fourth lumbar vertebra, where it divides into the right and left common iliac arteries. *Branches of ascending aorta.*—Right coronary and left coronary; of *arch of aorta:* innominate, left common cartoid and left subclavian; of *descending aorta (thoracic)*: bronchial, esophageal, pericardial, mediastinal, intercostal, subcostal, and superior phrenic; *of descending aorta (abdominal)*: celiac axis, inferior phrenic, suprarenal, renal, spermatic (or ovarian), superior mesenteric, inferior mesenteric, lumbar, middle sacral, and common iliacs.

3. The kidneys are situated in the back of the abdom-

inal cavity, one on each side of the vertebral column, behind the peritoneum, and extending from the eleventh rib to the second or third lumbar vertebra. The right kidney is about half an inch lower than the left one. Each kidney is about four inches long, two inches broad, and one inch thick, and weighs about four and a half ounces. The kidneys are kept in place by their vessels, fatty tissue, and the peritoneum. The shape is characteristic. Each kidney is surmounted by the suprarenal gland, is surrounded by a capsule, and consists of a cortical and medullary portion. In the cortical portion are found the Malpighian corpuscles, which are tufts of capillaries, and are surrounded by a capsule which is continuous with the uriniferous tubule which ends in the renal papilla.

4. Each *typical rib* has a head, body, neck, angle, tuberosity, and sternal end.

The peculiar ribs are the first, second, tenth, eleventh, and twelfth.

The *first rib* has only a single facet for articulation with the first dorsal vertebra; and the tuberosity and angle are blended.

The *second rib* has the tuberosity and angle very close together, and the shaft is not twisted.

The *tenth rib* has only a single articular facet upon its heads.

The *eleventh rib* has no neck, no tuberosity, and but a single articular facet upon its head.

The *twelfth rib* has a single articular facet upon its head, and no neck, no angle, no groove, and no tuberosity.

5. The *adductor muscles of the thigh* are: Gracilis, Pectineus, Adductor longus, Adductor brevis, and Adductor magnus.

The *Gracilis* arises from the symphysis pubis and the pubic arch, and is inserted into the inner surface of the shaft of the tibia, just below the tuberosity.

The *Pectineus* arises from the iliopectineal line and is inserted into a line leading from the lesser trochanter of the femur to the linea aspera.

The *Adductor longus* arises from the junction of the crest with the symphysis of the pubic bone, and is inserted into the inner lip of the linea aspera. It is generally blended with the Vastus Internus and the Adductor magnus.

The *Adductor brevis* arises from the body and descending ramus of the os pubis, and is inserted into the line leading from the lesser trochanter of the femur to the linea aspera.

The *Adductor magnus* arises from ramus of pubic bone, ramus of ischium, and from tuberosity of ischium, and is inserted into the line leading from the great trochanter of the femur to the linea aspera.

6. The *ureter* is a tube about twelve inches long, connecting the kidney with the bladder. It enters the latter very obliquely, about an inch and a half from its fellow of the opposite side and the same distance from the beginning of the urethra. Behind the ureter are the Psoas magnus, common iliac artery and vein, sacroiliac sychrondrosis, and Obturator internus. In front are the spermatic vessels and the vessels of the colon (ascending or descending). The right ureter has the inferior vena cava at its inner side.

HISTOLOGY.

1. The *elementary tissues of the body* are: Epithelial, connective, muscular, and nervous tissues.

2. *Striated muscles* are found attached to bones. All the muscles under the control of the will are of this variety.

*Unstriated muscles* are found in the esophagus, stomach, intestines, trachea, bronchi, ducts of glands, blood-vessels, ureter, bladder.

*Cardiac* muscle is found in the heart.

3. *White blood cells* are derived from the spleen, lymph glands, lymph tissues, and bone marrow.

*Red blood corpuscles* are derived from the bone marrow and the spleen.

4. "The *spleen* is invested by a thick capsule, consisting of fibro-elastic tissue and a large proportion of visceral muscle fibres. The capsule sends trabeculæ into the interior of the organ. These are thick, and the nuclei of the muscle fibres in them stand out conspicuously in stained specimens. The bulk of the organ is deep red in color, and is called the spleen pulp. In the pulp are numerous whitish nodules, about the size of a pin's head. These nodules are composed of lymphoid tissue surrounding small arteries, and are called Malpighian corpuscles. The pulp consists of a network of fine fibres, with a number of flattened and branched cells situated on the fibres and at their crossings. In the spaces between the fibres are numerous red corpuscles, large lymphocytes, and other blood cells. Many of the red corpuscles undergo disintegration in the large lymphocytes, so that pigment, both intracellular and free, is present. An occasional giant cell of bone-marrow type is seen in the spleen pulp. The splenic artery breaks up at the hilus, and the branches pass into the interior of the organ along the trabeculæ. Passing away from the trabeculæ, their outer coat becomes surrounded at intervals by nodules of lymphoid tissue—the Malpighian corpuscles. Each corpuscle usually shows a germ center. The arteries open into capillaries, which, in turn, open into the interstices of the pulp. From the pulp spaces there open wide venous sinuses, which are encircled by fibres of the reticulum, and are lined by a very prominent endothelium. These sinuses open into the radicles of the splenic vein." (*Aids to Histology.*)

PHYSIOLOGY.

1 and 2. The urine is a fluid, of pale yellow color, acid reaction, characteristic odor, specific gravity about 1015 to 1025, and contains water and solids. The amount excreted daily is about 50 ounces; of this quantity, between 900 and 1000 grains are solids.

| SOLIDS IN THE URINE. | VOIDED PER DAY. |
|---|---|
| Organic— | |
| Urea ..... | about 500 grains. |
| Uric acid ..... | about 10 grains. |
| Hippuric acid ..... | about 6 grains. |
| Creatinin ..... | about 12 grains. |
| Extractives ..... | about 150 grains. |
| Inorganic— | |
| Sodium chloride ..... | about 150 grains. |
| Phosphates ..... | about 37 grains. |
| Sulphates ..... | about 24 grains. |
| Oxides of calcium, magnesium, sodium, and potassium..... | about 20 grains. |

3. *Albumin appears in the urine* in: Inflammation and degeneration of the kidneys; increased blood pressure in the kidneys; certain exanthemata, such as scarlet fever; following drugs, such as mercury, cantharides; pregnancy, purpura, scurvy, leukemia, anemia, and other diseases; diseases of the heart and coronary arteries.

4. Muscles may be stimulated to contraction by various stimuli: Chemical, mechanical, thermic, electric, and nervous.

5. In *tonic* muscular contraction the muscle remains for some time in a state of rigid contraction; in *clonic* contraction, the muscle alternately contracts and relaxes.

6. DUCTLESS GLANDS: (1) The *spleen;* situated in the back part of the left hypochondriac and epigastric regions, being covered by the ninth, tenth, and eleventh ribs on the left side. (2) The *thyroid;* situated on the sides and in front of the upper part of the trachea, and extending upward on each side of the larynx. (3) The *suprarenals;* situated in the back part of the abdominal cavity, behind the peritoneum, one on the upper extremity of each kidney, and slightly also on the inner and anterior surfaces. (4) The *carotid gland;* situated generally in the carotid bifurcation. (5) The *thymus;* situated in neck, and superior mediastinum, up to lower border of thyroid. (6) The *coccygeal gland,* at the tip of the coccyx. (7) The *parathyroids;* situated near the thyroid, on the posterior surface, near the junction of the pharynx and esophagus; but they are variable in position.

7. The cells of the body require: Water, inorganic salts, proteids, fats, and carbohydrates. *Water* leaves the body in the urine, perspiration, feces, and expired air. *Sodium chloride leaves* the body in the urine and perspiration. *Sodium phosphate* leaves the body in the urine, perspiration, and mucus. *Sulphates* leave the body in the urine, saliva, feces, mucus, and perspiration. *Carbonates* leave the body in the urine. *Calcium phosphate* leaves the body in the urine, feces, and perspiration. *Magnesium* and *ammonium salts* leave the body in the urine. *Nitrogen* leaves the body in the urine and feces. *Carbon* leaves the body in the urine, feces, and expired air.

8. The *gall bladder* is a reservoir for the bile. It is situated on the under surface of the right lobe of the liver, to which it is connected by vessels and connective tissue. It is also in relation with the transverse colon, the duodenum, and sometimes with the pyloric end of the stomach.

9. *Asphyxia* is due to lack of oxygen in the blood.

*Apnea* may be due to excess of any gas in the blood, or to lack of oxygen.

*Dyspnea* is due to lack of oxygen or excess of carbon dioxide in the blood.

10. *Tidal air* is the air which is inspired and expired during ordinary respiration.

*Reserve air* is the extra air which can be expelled by a forcible expiration.

*Residual air* is the air which cannot be expelled from the lungs, even by a forcible expiration.

EMBRYOLOGY.

1. The different types of embryonic cells are the epiblastic, hypoblastic, and mesoblastic.

"From the *epiblast* are developed: The epithelium of the mouth and salivary glands and the enamel of the teeth; parts of the nose, eye and ear; the nervous system, the pituitary and pineal bodies, the medulla of the suprarenal gland. From the *hypoblast* are developed: The epithelium of the alimentary canal between the pharynx and the anal canal, and of the liver and pancreas; the epithelium of the respiratory passages and lungs; the epithelium of the Eustachian tube and tympanium; the thyroid gland; the epithelium of the bladder and parts of the genitourinary tract. From the *mesoblast* are developed: The connective tissues; the muscles; the blood vessels, blood cells, spleen, and lymph nodes; the epithelium of the kidney, the cortex of the suprarenal, the epithelium of the reproductive organs, and of part of the genitourinary tract." (*Aids to Histology.*)

2. The *placenta* is developed from the decidua serotina and chorionic villi. The placenta serves as: (1) a respiratory organ, (2) an excretory organ, and (3) a means of nutrition to the fetus.

CHEMISTRY.

1. Saturated aliphatic compounds, unsaturated aliphatic compounds, carbocyclic compounds, and hetercocyclic compounds.

2. *Bismuth* is a trivalent element, with atomic weight of 208. It is classed by some writers with antimony, by others with phosphorus, and by others again with the metals, and sometimes it is placed in a class by itself. It is found free, also as the trioxide and trisulphide. It is usually contaminated with arsenic. The medicinal salts are: Citrate, bismuth and ammonium citrate, subcarbonate, subgallate, subnitrate, subsalicylate.

Bismuth subnitrate is made by the action of water on bismuth nitrate:

$$Bi(NO_3)_3 + H_2O = BiONO_3 + 2HNO_3$$

3. Proteolytic changes are changes effected in proteins during their digestion, and are caused by the action of proteolytic enzymes. Thus pepsin splits up proteins into proteoses and peptones. The change is probably associated with the addition of some molecules of water to the protein group.

4. *Myronic acid* exists in the seeds of black mustard.

*Dicyanogen* is prepared from mercuric cyanide.

*Dextrin* is derived from starch.

*Paraffin* is derived from petroleum.

5. From petroleum may be obtained: Cymogene, rhigolene, gasolene, naphtha, and benzine.

6. *Amido acids* are derived from aliphatic acids by the substitution of one $NH_2$ group for one atom of hydrogen in the hydrocarbon group. They are basic on account of the presence of the $NH_2$ group, they are also acid, because they retain the COOH group. Their importance is due to the number of physiological compounds which belong to this class; such are leucin, tyrosin, tryptophan, lysin, alanin, and ornithin.

7. If the *protcid* is undigested, casein may be present in the stools, or the latter may be excessive, formed, with a pale or white color. If *fat* is undigested, the stools may be oily or glistening, whitish or grayish in color, and fat globules or crystals may be detected. If *starch* is undigested, starch granules may be seen, and a blue reaction obtained with iodine.

8. *Test for acetone in urine.* Add a few drops of a freshly prepared solution of sodium nitroprusside, and then KOH solution; in the presence of acetone the liquid is colored ruby-red, and becomes purple if acetic acid is added in excess.

*Test for bile pigments in urine:* Put 3 c.c. of nitric acid in a test tube, add a piece of wood, and heat until the acid is yellow; cool. When cold, float some of the urine to be tested upon the surface of the acid. A green band is formed at the junction of the liquids, which gradually rises, and is succeeded from below by blue, reddish-violet, and yellow.

9. $AgNO_3$ is soluble in water. $Ca_3(PO_4)_2$ is sparingly soluble in water, but is soluble in acids. $PbSO_4$ is insoluble in water, but sparingly soluble in acids. $CaCO_3$ is insoluble in water, but soluble in hydrochloric or nitric or nitrohydrochloric acid. NaCl is soluble in water. $MgCl_2$ is soluble in water. FeS is insoluble in water, but soluble in hydrochloric or nitric or nitrohydrochloric acid. $Na_2SO_4$ is soluble in water. $NaNO_3$ is soluble in water. ZnO is insoluble in water, but soluble in hydrochloric or nitric or nitrohydrochloric acid.

10. Average atmospheric air consists of oxygen 20.9, nitrogen 79.0, and carbon dioxide 0.04 per cent.

11. *Urinary calculi* may consist of: (1) Uric acid, sodium urate, ammonium urate, calcium oxalate, calcium phosphate, ammonio-magnesium phosphate. (2) Cystin, xanthin, urates of potassium, calcium and magnesium, calcium carbonate.

12. *Test for morphine:* Add to the suspected substance a solution of neutral ferric chloride; the presence of morphine is indicated by the appearance of a blue color.

(*To be continued.*)

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CLINICS, DEPARTMENT OF PUBLIC CHARITIES

CALENDAR, JUNE 1913

MONDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Dermatology | Dr. Fordyce | 3:00 P.M |
| *Cumberland St. Hospital* (Brooklyn) | Surgery | Dr. Pallister | 2:30 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| | Oral Surgery | Dr. Shea | 4:30 P.M. |
| *Kings County Hospital* (Brooklyn) | Gynecology | Dr. McNaughton | 9:00 A.M. |

TUESDAYS

| | | | |
|---|---|---|---|
| *Neurological Hospital* | Neurology | Dr. Byrne | 9:00 A.M |
| *N. Y. Children's Hospitals & Schools,* Randall's Is. | Orthopedics | Dr. Ogilvy | 10:00 A.M. |
| *Cumberland St. Hospital* (Brooklyn) | Gynecology | Dr. Burnham | 1:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M |
| *Kings County Hospital* (Brooklyn) | Obstetrics | Dr. Commiskey | 10:00 A.M |
| | Surgery | Dr. Barber | 11:00 A.M |
| | Genito-Urinary Surgery | Drs. Morton and Fraser | 2:00 P.M |
| *Coney Island Hospital* | Surgery | Drs. Fiske, Bogart, Murphy and Lack | 10:30 A.M |
| | Medicine | Drs. Hall, Nash, Hegeman and Byington | 3:30 P.M |

WEDNESDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Genito-Urinary Surgery | Dr. Fuller | 2:00 P.M. |
| | Obstetrics | Dr. Shears | 2:00 P.M. |
| *Neurological Hospital* | Neurology | Dr. Maloney | 10:00 A.M. |
| *Cumberland St. Hospital* (Brooklyn) | Ophthalmology and Otology | Dr. Schenck | 4:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Dermatology | Dr. Winfield | 1:00 P.M. |
| | Orthopedics | Dr. Truslow | 9:00 A.M. |
| | Orthopedics | Dr. Napier | 2:00 P.M. |
| *Coney Island Hospital* | Pediatrics | Drs. Beck, McQuillan, Pendleton and Van Wart | 3:30 P.M. |

THURSDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Gynecology | Dr. Stearns | 2:00 P.M |
| *Cumberland St. Hospital* (Brooklyn) | Gynecology | Dr. Burnham | 1:00 P.M. |
| | Surgery | Dr. Ritch | 2:30 P.M. |
| | Laryngology and Rhinology | Dr. Stewart | 4:00 P.M. |
| *Kings County Hospital* (Brooklyn) | Obstetrics | Drs. Commiskey and Judd | 10:00 A.M. |
| | Otology | Dr. Alderton | 1:00 P.M. |
| | Surgery | Dr. Barber | 2:00 P.M. |
| *Coney Island Hospital* | Gynecology | Drs. McEvitt, Mills, Mayne and Rankin | 10:30 A.M. |
| | Surgery | Drs. Fiske, Bogart, Murphy and Lack | 3:00 P.M. |

FRIDAYS

| | | | |
|---|---|---|---|
| *City Hospital* | Ophthalmology | Dr. Wiesner | 9:00 A.M |
| | Laryngology and Rhinology | Dr. Dougherty | 2:30 P.M |
| *Neurological Hospital* | Neurology | Dr. Abrahamson | 9:00 A.M. |
| *Cumberland St. Hospital* | Surgery | Dr. Pallister | 2:30 P.M. |
| | Surgery, Oral | Dr. Shea | 4:30 P.M. |
| *Kings County Hospital* (Brooklyn) | Gynecology | Dr. McNaughton | 9:00 A.M. |

SATURDAYS

| | | | |
|---|---|---|---|
| *Neurological Hospital* | Neurology | Dr. Walsh | 2:00 P.M. |
| *Kings County Hospital* | Obstetrics | Dr. Commiskey | 10:00 A.M. |
| | Surgery | Dr. Barber | 11:00 A.M. |
| | Medicine | Dr. Stivers | 3:30 P.M. |

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**Micrococcus Tetragenus Septicemia.**—Ferruccio Marcova describes a case of this condition occurring in a woman aged 40 years. This unusual blood infection manifested itself during the course of a biliary lithiasis. The temperature was of a markedly remittent type. Blood cultures revealed the *Micrococcus tetragenus.* Death occurred in the forty-ninth day of the disease.—*Il Policlinico.*

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## Original Articles.

### OBSERVATIONS OF RESULTS FROM VACCINATION AGAINST TUBERCULOSIS.*

BY CHARLES A. JULIAN, M.D.,
THOMASVILLE, N. C.

IT is hardly necessary to detain you with a consideration of the need of more effective measures than such as have been available against infection with the bacillus of tuberculosis, this being abundantly demonstrated by the frequency with which it still occurs after 30 years of preventive efforts since we understood its source, including a general world-wide campaign against it, in which the United States alone is said to have expended nearly twenty millions of dollars in the year just past, and which shows that only from complete isolation of all cases that can spread the disease or from an effective method of prophylactic vaccination can we hope to attain the mastery over this formidable enemy of the human race.

With the announcement on May 1 of last year by Dr. Karl von Ruck of Asheville, N. C., that he had discovered and perfected a method of prophylactic immunization absolutely safe, uniformly efficient, and simple enough in its application by a single dose to make it available to any physician, you are undoubtedly familiar, and for the details I refer those who are not to the full report from his laboratory of June 1, which also appeared in the MEDICAL RECORD of August 31, 1912.

Having been associated in the practical application of this, his method, in 262 of the 339 children, reported upon by Dr. von Ruck in their preliminary and subsequent examinations, and having had them under my observation before and since by reason of their being under my medical charge in the Baptist Orphanage at Thomasville, it is my purpose to report to you my observations on the practical side, including the results of recent examinations after a period of 14 months since they were vaccinated, and to add like observations in 131 additional vaccinations made by myself since Dr. von Ruck made his first report.

The results of the biological tests and animal experiments which were supplied by Dr. von Ruck in the first series of cases are given in his publication referred to. Those obtained in the additional series vaccinated since by him and by myself will be communicated by Dr. von Ruck in a forthcoming second report. Not representing my own work, I propose to state these results here only in a general way, as they were reported to me from his laboratory, and beyond this I shall confine myself, as already stated, to the practical side in considering the influence of the method upon children who were known to have or were suspected of having acquired a tuberculous infection prior to their vaccination.

The biological and experimental studies referred to were designed to demonstrate the value of the method of quantitative demonstrations of specific protective substances as present before and after vaccination, and to show that they developed in response to the administration of the vaccine in sufficient amount to afford the desired protection, both in the human subject and in the lower animals.

To this end the blood serum of each child was examined before and after vaccination, more or less frequently, as appeared necessary, and again at varying intervals up to 16 months thereafter, the purpose of subsequent examinations being to determine how long the protection is liable to last. Of the results as obtained in my own cases by Dr. von Ruck, I can say that the reports supplied me correspond with those already published, there having been a uniform development, or, if already present, a decided increase in specific agglutinins, in the opsonic index and in the specific amboceptors as shown by complement fixation, and that in all new cases, as well as in all reexaminations the bacteriolytic power of the serum *in vitro* of each child was established without a single exception, and that this reached a maximum degree as shown by the complete disintegration of tubercle bacilli, in all cases on their first or subsequent examinations, when the latter were continued until the necessary maximum coincidence of amboceptors for the several partial antigens was in evidence.

To show also the bactericidal power of the serum in addition to its bacteriolytic action *in vitro* the contents of test tubes to demonstrate the latter were used for the inoculation of guinea-pigs, and it again appeared that with the sera of children taken before their vaccination (whether normal or tuberculous) no bacteriolytic or germicidal power was demonstrable, whereas this was obtainable with the serum of every vaccinated child.

All animals inoculated with tubercle bacilli exposed to the action of serum taken before vaccination died of tuberculosis, whereas all those inoculated with the same number and from the same culture of tubercle bacilli survived when the specimen of serum had been taken from a vaccinated child at the acme of the positive phase in which complete disintegration to the granular stage could invariably be obtained *in vitro*.

Dr. von Ruck recently informed me that in his continued experimental studies he has not failed to demonstrate the same degree of bacteriolytic and germicidal action with serum from guinea pigs, rabbits, and calves, previously immunized with his vaccine, and that such animals have invariably resisted a virulent infection.

While these biological and experimental studies are necessary to supply a scientific basis for the

*Read before the Tri-State Medical Association of the Carolinas and Virginia, Norfolk, Va., February 20, 1913.

method and are of the utmost importance in the demonstration of its value, the general practitioner who lacks experience, time, or facilities to make them himself or to observe them while conducted by an expert must take the results on faith, and unless he can have evidence which he can observe himself he would for a final conclusion of his own have to depend upon observations through years to come to convince himself that the results of the laboratory justified his faith and expectations.

Fortunately it was found that the method of protective vaccination against tuberculosis discovered by Dr. von Ruck need not be confined to individuals still free from infection, or that even demonstrable tuberculous changes in the lymph glands, lungs, and other organs are not a bar to its application. It is therefore possible to observe its influence upon previously infected or demonstrably tuberculous subjects, and I wish to invite your particular attention to my observation in such cases.

Before considering the results of vaccination in this class of cases I wish to anticipate a question that also arose in my own mind in regard to the experimental studies of Dr. von Ruck: It is this: "Why is it that the results of immunization in the animal experiments appear so uniform that, as Dr. von Ruck shows, it is possible to foretell them almost invariably before a virulent infection is made, whereas in the past and in the hands of all others they were either uniformly negative or, to say the least, contradictory, in the sense that complete protection against virulent infection of so highly a sensitive animal as the guinea pig has never before been proved?"

To this question I prefer to let Dr. von Ruck give the reply himself, as he did when I proposed it, and I quote from his personal communication to me as follows: "It is true that complete immunity in the sense of uniform resistance to virulent infection on the part of guinea pigs or other experiment animals has heretofore not been possible to prove conclusively and uniformly, the occasional successes which are recorded in the literature being so rare that the weight of authority of experimenters who observed only failures naturally prevailed. I also have in my earlier experimental studies met with more failures than successes, and I refrained from the publication of the latter because under apparently the same conditions my failures by far exceeded my positive results. But in the light of my more recent studies the explanation is easy enough, showing, as they do, that while in the past we had no guide or criterion by which we could know that the animal or the human subject had acquired the necessary degree of immunity, my demonstration of bacteriolysis *in vitro* of virulent tubercle bacilli through the action of immune serum, and my discovery of its relation to a certain coincidence of complement fixation with the several constituents of tubercle bacilli, supplied this guide in an almost unerring manner, and to such a degree that it can be known by the application of the bacteriolytic test *in vitro* to a given specimen of serum what the result of a virulent infection will be, either with bacilli acted upon by serum from the human subject or by that from animals, or with virulent tubercle bacilli for the infection of a supposedly immunized animal.

"These studies have further shown that while the degree of immunity necessary to cause a complete bacteriolytic and bactericidal effect is attainable in the human subject with a single dose given subcutaneously, this is not the case in those lower animals in which I have thus far attempted to produce it, and that individuals even of the same species show a marked difference in the time and number of doses necessary to protect. To obtain the immunity more rapidly in animals it is necessary to give the vaccine intravenously and to give large doses, but even by this method their response with a sufficient degree of specific antibodies is still comparatively slow. With the subcutaneous method of administration of my vaccine, which is a solution of the endotoxins, it requires for guinea pigs, rabbits, and calves from 8 to 16 weeks of preliminary treatment and exceptionally even longer to obtain a degree of immunity sufficient for their respective sera to cause complete bacteriolysis *in vitro* and complete destruction of virulence, and I find that this degree of immunity must be in evidence to be sure of their protection against virulent infection. With emulsions of tubercle bacilli, either my own or that of Koch, I am still awaiting its advent of such a degree of immunity after 6 months of preliminary treatment. You therefore can readily see that without this guide, spoken of in the light of the long time and the larger amount of vaccine required, failures were necessarily the rule, and the occasional or partial successes under apparently like conditions can now be explained by the difference in response in the development of a complete immunity by individuals of the same species of animals.

"The nature of the preparation in regard to its physical state and in regard to its proper content of all the bacillary constituents in an uninjured state appears likewise to make the greatest difference in the result. I have thus not as yet been able to successfully immunize an animal with the old tuberculin, or with bouillon filtré, nor have I had much better success with the several emulsions, or with partial antigens from tubercle bacilli in the form of primary or secondary nucleo proteids, or with peptone or the fatty extractives when used pure and uncombined with all others."

This explanation given by Dr. von Ruck appears to me a reasonable one, as amply explaining the difference in results in animal experimentation of the past. Observations of a similar nature heretofore published by Much appear to show that in a soluble vaccine against tuberculosis the fatty extractives are one of the several bacillary constituents that must be present if complete protection is to be afforded in the animal experiments. It is owing to the heretofore and almost insurmountable difficulty of isolating and obtaining them that emulsions of dead or living bacilli have been thought necessary for effective immunization, and there are those who contend that only a living virus could lead to such a result.

The demonstration of bacteriolysis and complete destruction of virulence *in vitro* with serum taken from children vaccinated with a single dose with Dr. von Ruck's preparation, which he was the first to accomplish, shows conclusively that his vaccine contains all the necessary bacillary constituents in solution, and it likewise removes all further necessity of search for an attenuated living virus, or in fact for a more effective preparation either for prophylactic or for therapeutic use, inasmuch as no vaccine or preparation can do more than act effectively in a single dose.

In my judgment a living virus would under no circumstances be admissible for prophylactic immunization against tuberculosis of the human subject. Though shown to have been non-virulent for

the highly susceptible guinea pigs I doubt that the non-tuberculous organism could cause its solution and the liberation of the contained endotoxins upon which the development of antibacterial immunity depends.

In the latter view I am sustained by the demonstration, in the milk of cows, of living tubercle bacilli of the human type three years after their use for purposes of immunization, a fact which may likewise supply an explanation for the apparent failures of v. Behring's Bovovaccine or the similar preparation of Koch and Schutz called Tauruman, uniformly to afford complete protection against subsequent infection of cattle with virulent bacilli of the bovine type.

Another and more weighty objection to the use of a living though apparently non-virulent virus for laboratory animals is the fact that non-virulence need not be permanent and that virulence can be restored spontaneously or by passage through a susceptible animal; and inasmuch as it is not possible to test the virulence of a given strain or culture of tubercle bacilli upon the human subject, and inasmuch as we know that the tubercle bacilli may remain living and in a state of latency with apparently no pathogenic power for long periods of time and thereafter become active and pathogenic, it would be a rash and ill-considered procedure, to say the least, to use any form or type of living tubercle bacilli upon the human subject simply because in the experiment upon an animal, tubercle bacilli of the same strain or from the same culture had failed to cause the development of manifest disease.

The technical details of the chemistry and of the method of preparing Dr. von Ruck's vaccine, the selection of cases, and its administration are also given explicitly in his first report. In the children vaccinated by me during the last year, I have found no difficulty in excluding actively tuberculous cases from the rapid method by a single dose, and in following the latter I have practically adhered to the doses administered in the series of cases vaccinated the year before under the personal supervision of Dr. von Ruck.

The doses of the undiluted vaccine established by him are for the respective ages as follows: For infants up to one year of age, 0.05 to 0.1 c.c.; aged 1 to 5 years, 0.1 to 0.2 c.c.; 5 to 12 years, 0.2 to 0.3 c.c.; older children and adults, 0.3 to 0.5 c.c.

Neither in the 262 children vaccinated in October, 1911, nor in those vaccinated by myself since, have I observed any disagreeable influence unless the local reactions at the point of injection evidenced by more or less sore arms, which occurred in the tuberculous and in almost all of those classed as probably tuberculous, might be so considered. In addition to sore arms we noted in some tuberculous children slight and occasionally moderate rises of temperature. These reactions were, however, as a rule, so mild that they were not especially noted by the children, and in this respect they compare very favorably with the reactions occurring after vaccination against smallpox or typhoid fever.

In non-tuberculous children no reaction occurred to the vaccination, nor was there anything observed in their condition thereafter which was in any way referable to it.

While my position prior to these practical observations in regard to the value of vaccination was one of faith and confidence in the assurance given me by Dr. von Ruck as to safety, I find that his statements in regard to the influence of the therapeutic action of the vaccination upon existing tuberculosis have been strictly conservative.

Beginning with children presenting symptoms suggestive of tuberculosis, including cough and rise of temperature, all these disappeared in the course of the first four months. All of the tuberculous and probably tuberculous children showed remarkable gain in weight and strength, their color appeared improved, while they became more active and more interested in the work and studies assigned to them. This general improvement was observed not only by children old enough to do so themselves, and upon special inquiry for the purpose by myself, but by all those who came into more or less frequent contact with them.

A more critical examination by myself and by Dr. Silvio von Ruck in April, 1912, of those whose record showed the presence of physical signs on the part of the lungs, enlarged lymph glands, or other tuberculous localizations prior to their vaccination, showed their complete disappearance or retrogression and with few exceptions, a most remarkable gain in body weight. The local and general improvement was so marked that an apparent recovery or at least complete arrest could have been accepted in all but a few of the more advanced cases. An exception to such a result occurred in two cases in which, in addition to pulmonary involvement, other tuberculous complications were present, consisting, in one case, of tuberculous peritonitis, in which I felt it necessary to resort to laparotomy for the evacuation of a purulent exudate; in one case of tuberculous disease of the right tibia in which I secured drainage by incision, and in a third case of Pott's disease, all of which were treated with the vaccine until their recovery which has since become complete and assured.

At the request of Dr. von Ruck a more general systematic reexamination was undertaken the latter part of last November in all cases vaccinated in 1912, their physical condition being determined by myself, while the blood examinations and animal experiments were made in Dr. von Ruck's laboratory.

The examinations on my part were finished early in December, therefore 14 months after the vaccination of the first series of 262 cases in 1911, and 3 months after vaccination of the second series of 131 children by myself.

I have already spoken of the remarkable and early general improvement of children who were classed as positively or probably tuberculous, and as this can be shown best by their increase of body weight, I regret that an actual comparison is possible only in 109 vaccinated in 1911, because there is no record of weight at the time of their preliminary examinaton for the others. I may, however, state that the comparative results shown in the 109 cases would not be liable to differ materially in the remainder, inasmuch as weights made at later periods, and the general observation on my part and on that of the others, indicate that their improvement in nutrition was equally good.

COMPARATIVE WEIGHTS IN 109 CHILDREN BEFORE AND 14 MONTHS AFTER VACCINATION.

One patient fully grown and having normal weight has neither lost nor gained. One patient likewise fully grown and of normal weight, has changed from 124 pounds recorded at the prelimi-

nary examination to 120 pounds as determined in December. Both patients give evidence of normal health. We find, therefore, that there were available for comparison 64 cases, all of which have gained.

*66 cases classed as tuberculous.*

| | Pounds | | Per cent |
|---|---|---|---|
| Minimum gain | 4 | Min. increase in body weight | 4.4 |
| Maximum " | 41 | Max. " " " " | 60.0 |
| Average " | 20 | Ave. " " " " | 26.5 |

*20 cases classed as probably tuberculous.*

| | Pounds | | Per cent |
|---|---|---|---|
| Minimum gain | 7 | Min. increase in body weight | 8.9 |
| Maximum " | 24 | Max. " " " " | 45.6 |
| Average " | 13.8 | Ave. " " " " | 24.2 |

*23 cases classed as normal.*

One child lost 2 pounds; available for comparison are 22 cases all of whom gained weight.

| | Pounds | | Per cent |
|---|---|---|---|
| Minimum gain | 4 | Min. increase in body weight | 6.6 |
| Maximum " | 24 | Max. " " " " | 31.7 |
| Average " | 8.7 | Ave. " " " " | 12.9 |

A comparison of the average gains in pounds and in percentage of the increase of body weight between the normal and the tuberculous or probably tuberculous children, showing over 100 per cent. in favor of the latter, appears to be indicative of more than a coincidence, the more so, as the conditions of diet and environment were the same for all, and also because an average gain of body weight of 25 per cent. is far beyond the normal increase for the age periods of 4 to 16 years which we can assume to be represented more correctly by the children who are classed as normal. This assumption appears to be correct on examining a detailed tabulation of each case, with intervening weight records, which on account of space cannot find room in this communication, but which shows that the excess in gain of the tuberculous occurred at an early period after their vaccination, and that their subsequent gain is not materially different from that shown for the normal children.

PHYSICAL EXAMINATION OF THE LUNGS OF 112 CASES CLASSED AS TUBERCULOUS.

In the preliminary examination of the 262 children there were 112 whose lungs presented evidence of pathological changes noted almost exclusively in children above the age of 12 years. In seven of them the presence of symptoms of marked fever or cough, or bacillary sputum or of other tuberculous localizations was considered sufficient reason for excluding them from the rapid method, and they were given smaller and increasing doses of vaccine, at intervals of five days, the number of doses varying from three to nine.

In the cases considered suitable for the rapid method with a single dose, the signs determined consisted of a more or less pronounced apical catarrh in some cases of both sides, in others only on one side, with a rough character of the inspiration, accompanied in some instances with a bronchial element and prolonged expiration. As a rule, more or less marked loss of the percussion resonance could likewise be shown in parts of the affected lung areas, and slight rises of temperature of from half to one degree, rarely more, were frequently one of the symptoms. All cases reacted to tuberculin, showed serum agglutinations, as a rule, in dilutions of 1:10 or over. Complement fixation, when trials were made, was negative. In 84 cases, palpable lymph glands of one or more groups were part of their record.

The physical signs of the lungs determined before vaccination can be grouped as follows:

| | Cases. |
|---|---|
| Signs marked in both apices and upper lobes | 32 |
| Signs marked in one apex or upper lobe, slighter in the opposite lung | 28 |
| Signs of slighter degrees, on both sides | 8 |
| Signs marked on one side only | 22 |
| Signs slight on one side only | 15 |
| Signs indicative of destructive lesion on one side, with slighter involvement on the opposite side | 5 |
| Cases considered active and progressive | 2 |

The results of the physical examinations made by me last December and therefore 14 months after vaccination corresponded in practically all the nonactive or so-called latent affections with those made last April, while in the cases classed as having destructive lesions in their lungs or otherwise pursuing an active course and in which marked amelioration and retrogression of physical signs had been found last April the evidence to this effect is now still more marked.

Excepting one case, in which other than tuberculous disease accounts for an unsatisfactory state of health, all these children are in excellent physical condition. Those who apart from their lowered state of nutrition had also shown symptoms of fever, cough, expectoration, lost them at an early period and have remained free from them ever since. In 27 cases in which the physical signs were of slight degree, nothing abnormal can now be shown by percussion or auscultation. There is no evidence of apical catarrh in any case. In instances, however, in which the physical signs were marked, some degree of diminished resonance can still be shown in small and circumscribed areas over which the respiratory sounds are not perfectly normal, the inspiratory sound being either weaker or lacking in vesicular quality and quantitatively often showing a harsh element coexisting or predominating. The other and adjacent parts which had previously given abnormal signs show now no change from normal. In quite a number of these cases there is now more or less marked subclavicular retraction, corresponding with the area of diminished resonance and of abnormal respiration which in extent is very small, as a rule, not exceeding 1 inch in diameter. I am therefore of the opinion that the present findings in all such cases are indicative of lesions which have undergone a process of healing and cicatrization, corresponding as they do with signs generally accepted as of such import, and I am the more certain that this interpretation is the correct one, inasmuch as none of them have reacted either locally or generally to a subcutaneous tuberculin test which I applied about a month ago, whereas a like test applied before their vaccination was positive in every case in which it was made.

Physically and clinically these children have all made a complete recovery after a single dose of the vaccine and, with one exception stated, they are in perfect health.

ENLARGEMENT OF LYMPH GLANDS.

In addition to the 84 children in whom physical signs of lung involvement were also present there were 82 others in whom enlargement of lymph glands was a part of their record, making a total of 166 cases. The order of frequency of involvement of the several groups was the cervical, axillary, and inguinal groups, although it should be stated that the examination of the latter was frequently omitted especially in older girls. The involvement of one or more groups was as follows: One group only, 12 cases; two groups, 97; three groups, 15; four groups, 38; five groups, 2; all six groups, 2. My records of reexamination made in December

give the following results: Not examined, 6 cases; no enlargement found in any one of the several groups previously recorded at present, 153 cases; enlarged glands found in 1 group with previous records for 4 groups, 1 case; enlargement found in 1 group with previous records for 3 groups, 1 case; enlargement in 1 group with records for 2, 2 cases; enlargement in 2 groups with records for 4, 1 case; enlargement in 2 groups with records for 2, 2 cases: total, 166 cases.

In the cases in which enlarged lymph glands could still be found, I am unable to say whether they were changed in number, size, or consistency, as the records are not explicit enough for comparison. I can, however, say that when the records were explicit and stated that they were numerous, or that they were large, I have found none at all, or but few small glands, firm and hard to the touch.

Proceeding to the results in 131 cases three months after their vaccination, the improvement of the tuberculous and probably tuberculous classes as represented by gain in body weight was found as remarkable as that shown in the preceding series of 1911.

For comparison of weights I have available records in 110 in which it is recorded before and again three months after vaccination and you will note that the increase in weight in so short a time as three months bears me out in my statement that, as in the series of 1911, the improvement in nutrition occurs at an early period after administration of the vaccine. Normal weight having been reached in the tuberculous its further increase in growing children is then the same as it is in those free from tuberculosis.

COMPARATIVE WEIGHTS IN 110 CHILDREN BEFORE AND 3 MONTHS AFTER VACCINATION.

*36 cases classed as tuberculous. All gained weight.*

| | Pounds | | Per cent |
|---|---|---|---|
| Minimum gain | 3 | Min. increase of body weight | 4.0 |
| Maximum " | 21.5 | Max. " " " " | 37.5 |
| Average " | 10.1 | Ave. " " " " | 16.1 |

*48 cases classed as probably tuberculous. All gained weight.*

| | Pounds | | Per cent |
|---|---|---|---|
| Minimum gain | 7 | Min. increase of body weight | 8.9 |
| Maximum " | 49 | Max. " " " " | 45.6 |
| Average " | 13.8 | Ave. " " " " | 13.9 |

*26 cases classed as normal. 24 gained weight (2 cases show no change).*

| | Pounds | | Per cent |
|---|---|---|---|
| Minimum gain | 1.5 | Min. increase of body weight | 1.9 |
| Maximum " | 10.5 | Max. " " " " | 15.4 |
| Average " | 3.6 | Ave. " " " " | 4.2 |

PHYSICAL EXAMINATION OF THE LUNGS IN 31 CASES CLASSED AS TUBERCULOUS.

Pathological changes as indicated by physical signs on chest examination were present in 31 cases. Of the cases classed as positively tuberculous, and, as in the series of 1911, they were found chiefly in older children between the ages of 12 and 16 years; in all of them the result of a tuberculin test prior to vaccination was positive. In 26 cases of latent or inactive lesions, including 11 cases in which slight subjective symptoms and temperature elevations between 99° and 100° were also present, only a single full dose of vaccine was given, whereas in five cases in which the affections were more advanced, because associated with marked subjective symptoms including cough, bacillary expectoration and fever, the vaccine was given in small and increasing doses.

Applying the same classification as adopted for the 1911 series, the present cases group as follows: Marked signs in both upper lobes, 2 cases; marked signs on one side, slighter on the opposite side, 8; slight signs on both sides, 2; marked signs on one side only, 12; slight signs on one side, 2; signs indicative of destructive lesions on one side with slighter involvement on the opposite side, 4; signs indicative of destructive lesions on both sides, 1—total, 31.

The result of my reexaminations made three months after vaccination show that in 10 cases all physical signs have disappeared, and in instances in which slighter signs in one lung were present with marked signs in the other, the slighter signs have also disappeared. In all the remainder, excepting 2 of the advanced cases which are still under treatment, the physical signs have receded and diminished being limited to small areas in which catarrhal signs, when previously recorded, are not now present.

The respiratory sounds are weak or lack in the unmixed vesicular element, while the percussion note is not as fully resonant as it is on the opposite side. All previously present symptoms have disappeared; the temperature is normal in all; the general condition of nutrition, strength, and sense of well being is good.

A tuberculin test previously positive in all cases classed as tuberculous or suspected to be so continues positive in 6 cases. Three of these having shown physical slight subjective symptoms, were vaccinated with a single dose, the fourth case had been further treated and has since been dismissed, and the other two are still under treatment.

ENLARGEMENT OF LYMPH GLANDS.

In addition to 8 cases among the 31 in whom physical signs of lung involvement were present, there were 32 and therefore a total of 40 cases in which enlarged lymph glands were found on preliminary examination, and, as in the series of 1911, chiefly of the cervical and axillary groups. In 2 cases all the cervical, axillary, and inguinal groups were enlarged. All of these cases gave a positive reaction to tuberculin, and represent mostly the "probably tuberculous class."

The number of groups of enlarged lymph glands was as follows: One group enlarged, 2 cases; two groups, 31 cases; four groups, 5 cases; six groups, 2 cases.

In my reexaminations I have not been able to find a single instance in which I could detect any glandular enlargement. In 15 there had been temperature elevations between 99° and 100.5° F.; reexaminations showed the temperature to be normal. None reacted to tuberculin and the general health is entirely satisfactory in every case.

This concludes the clinical evidence which I desire to submit of the value of prophylactic immunization in instances of suspected infection, as also in those cases in which the diagnosis of early stage tuberculosis was conclusively established by the usual available methods.

My observation of degrees of local and general changes for the better, with complete restoration of the general health in all cases of suspected or manifest tuberculosis, which clinicians as a rule agree to accept at least as evidence of complete arrestment if not of an apparent cure, justifies the assertion that, even from a most conservative standpoint, there has been an undoubted relation between the vaccination and the results shown, and that the method has resulted beneficially to these children in a degree and with a uniformity which we have not been accustomed to witness here-

tofore, a conclusion all the more justified by the fact that there has been no change in the mode of life, environment, or in dietetic, hygienic measures, and that no other treatment of medication designed to aid in the realization of the results has been resorted to.

Calling attention once more to the facts determined by Dr. Karl von Ruck that specific protective substances were not found in the sera of any of the children before their vaccination, excepting in comparatively few of the tuberculous cases and never sufficient to cause disintegration and destruction of virulence of tubercle bacilli, whereas after the administration of the vaccine, the presence of such protective substances was invariably demonstrable in the serum in amounts sufficient to cause complete lysis *in vitro* and complete destruction of virulence as shown by animal experiments, I believe there can be no reasonable doubt that the practical results observed by me, and the scientific experimental demonstrations by Dr. von Ruck, correspond in a striking manner and that they naturally support each other.

This being the case, and finding that after the vaccination of normal children the same protective substances appear in their sera, with the same bacteriolytic and bactericidal power, unabated in all cases reexamined at various periods up to 20 months since their vaccination, we have reached the limit of the evidence it is possible to supply, of a successful and effective vaccination. This evidence it appears to me would have been sufficient without additional proof by Dr. von Ruck that the same protection can be conferred upon guinea pigs, rabbits, calves, and sheep, which he found to respond to the vaccine by acquiring a complete resistance to virulent infection, their sera developing the same bacteriolytic and germicidal power *in vitro* that is shown in the human subject, and with the same uniformity, except that the animals did not show the same rapid response and that they required longer periods of preliminary treatment.

I forego any comment on the therapeutic possibilities of the vaccine as unnecessary in the light of the results I have shown in my tuberculous cases, especially in those which represent the early stages of the disease, in all of which a single dose proved efficient in bringing about a clinical cure.

## AMBARD'S "UREMIC CONSTANT," OR THE ESTIMATION BY MATHEMATICS OF THE FUNCTIONAL VALUE OF THE KIDNEYS.

By CECIL KENT AUSTIN, M.D.,

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In an article that appeared in these columns, January 4, of the present year, I called attention to the important clinical work in the field of medical nephritis that has been carried on of late by a group of young physicians in France, under the leadership or inspiration of Widal and Castaigne; and special stress was laid on the comparatively recent idea, in this connection, of judging of the functional capacity of the kidneys by determining the percentage of urea circulating in the blood. The fact was there referred to that as a means of prognosis in nephritis this urea-percentage stands without a rival at the present time, experience having revealed that, although it is not impossible for cases of this sort to show temporary periods of remission, as a rule the length of time the patient still has to live can be foretold with almost mathematical accuracy from these figures. So great has the importance of this method been found that in a recent article Widal himself has said that if forced to choose, in making a prognosis, between the figures for the albumin in the urine and for the urea-percentage in the blood, he would unhesitatingly take the latter. In view, therefore, of the relative newness of this chapter of the nephritic subject, of its capital importance, and of the fact that it appears to have not yet entered at all into the field of practical medicine at home, it has seemed desirable to take up the subject once more, and to refer at the same time to one or two quite recent developments in the matter.

It may at first sight seem peculiar that the degree of gravity of a case of nephritis should be indicated by the percentage of urea-retention in the blood, urea itself being the least toxic among the nitrogen products of disassimilation, its molecule having a very simple formula so as to make it an easy problem for handling by the renal excretory epithelia. But in the method of determining the hematic urea-percentage the urea is simply used as an indicator, experience having shown that increase or decrease in its amount follows quite accurately the fluctuations of the other nitrogen products of disassimilation, which are believed to be the determining factors of renal insufficiency, although it is not certain which the special culprits are, the likelihood being that they all take a part in producing that condition, and that it is in reality a very complex state.

But while it has proved that an estimate of hematic urea is a safe guide as a basis for an opinion as to the gravity of a case of nephritis and its probable prognosis, longer experience has demonstrated the fact that this statement requires a slight modification. If a man were taken in full health, but a notoriously free-liver, and particularly a person addicted to flesh-eating in excess, it is fairly certain that a urea-percentage would be found with him that in a chronic renal case would indicate a prognosis of a very serious character; yet with the heavy eater it would mean nothing at all, his elimination of urea by the urine being equally high. This is equivalent to saying that one of the characters of urea-excretion by renal tubular epithelium is that the greater the amount presented for its handling by the circulation, the higher its efficiency in that particular. "Appetite comes with eating," as the expression goes. It is therefore necessary to introduce into this problem of the value of the hematic urea-percentage the factor ingesta, solids and fluids, it being manifest that a nephritic case taking the ordinary daily allowance of 100 grams of albumin will show a higher blood index than one on a partial, hyponitrogenous diet of 30-40 grams, or, *a fortiori*, than one placed for the time being on a diet from which all albumin has been eliminated.

This dependency of the urea blood index as a basis for prognosis on the nature of the patient's diet was felt to be an unquestionable flaw in the value of the method, so much so that Ambard, chief of laboratory at Necker Hospital, in this city, has been at infinite pains to elaborate a modification of the procedure that is claimed to have entirely done away with this defect, and to give results that can be altogether relied on and that are quite independent of the manner in which the patient may be living at the moment the test is made.

Ambard is a medical man with a mathematical turn of mind, and he has discovered with regard to the urea question in both blood and urine, as well as to the renal functions in general, certain laws that he expresses in the guise of algebraic formulæ. Into this aspect of the subject I shall refrain from following him, frankly confessing my total incompetence in matters algebraic, in spite of the advantages of a university education! Suffice it to say that the accuracy of Ambard's work, and of the conclusions he has drawn therefrom, is demonstrated by its results, and that to-day we have, in what is known as his "uremic constant," an index to the functional value of the kidneys that is completely uninfluenced by the patient's regimen.

By deducing certain laws as to renal functions, and expressing definite figures in the form of letters, and juggling therewith after the fashion peculiar to algebraists, he has established the following equation, which when worked out gives his "uremic constant" K, a numerical index of renal functional value:

$$\frac{U}{\sqrt{D \times \sqrt[70]{P}\sqrt{C_{25}}}} = K.$$

In this equation the numerator, U, is the urea-percentage in the blood; in the denominator, D, is the amount of urea secreted in the urine by the kidneys during the time of the experiment, but referred to a period of twenty-four hours; P is the patient's weight referred to an average of 70 kilos, and C the degree of concentration of the urea in the urine referred for convenience of calculation to a typical concentration of 25 per cent. All this has to be taken on faith, unless the reader wishes to resort for particulars directly to Ambard's papers on the question presented to the Société de Biologie in the latter part of 1910. Here, however, as we are dealing solely with the practical, clinical side of the subject, it will be enough to indicate the manner in which the test is to be made by the practitioner. Unfortunately, the estimation of the urea-percentage of blood serum is far too delicate a matter for the physician; he has here to be assisted by a skilled chemist, who may as well calculate the urea in the urine at the same time.

What the medical man has to do is as follows: Irrespective of diet and time of day, though it is a good plan to administer a pint of water or milk half an hour before the test, simply to get a freer flow of urine, the patient is desired to empty the bladder completely, and the exact time of the end of this emission, in minutes and seconds, is noted on paper. Shortly later, in ten to twenty minutes, the physician extracts the amount of blood necessary for estimation of urea-percentage; 20 c.c. are enough, though 40 are better, and they can be obtained either by wet cupping, vein puncture with a suitable needle, or by venesection. At the end of sixty to ninety minutes, the exact time being not very material, so long as it is noted with equal precision, the patient again empties his bladder, the urine is received in a clean vessel, and urine, blood, time notes and the patient's weight are sent to the laboratory, where the results of the analysis are inserted into Ambard's formula and worked out, giving the uremic constant K, which in the normal state oscillates about the figure 0.070.

It is out of the question, within the limits of an article such as this, to give all the details of so complicated a subject as the establishing of Ambard's equation. The physician's side of the matter is not very difficult; the ascertaining of the result is a laboratory affair requiring great skill and delicacy, and any chemist wishing to carry it out will have to refer to the special papers on the subject to acquire the *modus operandi*. But the clinical value of Ambard's "uremic constant"—uremic referring to urea-percentage, and not to renal insufficiency—is unquestioned, Widal going so far as to say that no physician is justified to-day in having a case of nephritis under his care who does not from time to time look into the urea-percentage of the blood. The figure 0.070 increases the moment the kidneys cease to filter in a normal manner, and long before any special, general symptoms indicate the beginning of the condition of urea-retention that will lead the patient in a varying length of time to the most serious accidents of renal insufficiency. It is precisely on account of its great delicacy and accuracy that this "constant" is so valuable, and its importance lies in its application more to light cases, and to patients with whom real trouble is not yet suspected, than to more advanced and serious cases. When a patient has had chronic nephritis for years, and has reached a point where in spite of care and diet the hematic urea-percentage remains at or over one gram, everyone knows that his condition is grave and the outlook very bad, without having recourse to Ambard's more complicated method, experience having shown that in well-established cases of a certain duration and severity the prognosis follows the blood index alone, for all practical purposes, without further research. But take one of the simplest cases of nephritis, one of the purely albuminous type, in which for years the only symptom observed is a moderate amount of albumin in the urine, the kidneys carrying out their filtering function perfectly in other respects, the patient's general condition being above criticism, and the blood urea index remaining within normal limits. With such a patient as this Ambard's method and formula is the only means whereby we may obtain an early warning as to the approach of the period of trouble, when the kidney disturbance leaves the stage of simple, chronic alteration of one of the primordial renal functions, that of opposing the urinary transudation of the different varieties of albumin in the hematic plasma, and enters the terminal stage of renal retention that will eventually be followed by insufficiency and death, provided the patient does not succumb to some intercurrent disorder in the meanwhile.

The question is one of the greatest interest and practical, clinical importance, and physicians who are at home in French will be well advised in making themselves familiar with it by reading some of the recent work on the subject, of which a summary indication is given in the appended bibliographic list.

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20 Rue Chalgrin.

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# ROENTGENOSCOPIC EXAMINATIONS VERSUS CLINICAL METHODS IN THE DIAGNOSIS OF GASTRIC DISEASE.*

By JOHN DUDLEY DUNHAM, M.D.,
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The observations to be set forth in this communication are based upon a study of ninety-four patients who consulted me during the past few months. Each patient who complained of gastric or intestinal symptoms was given an Ewald test breakfast, the contents of the stomach removed one hour later and examined. Following this a Riegel test dinner was given, and six hours later lavage was performed to determine the quantity of chyme present at this interval.

Upon the same or the next day the patient was given from fifty to two hundred grams of bismuth subcarbonate or barium sulphate suspended in five hundred c.c. of sweet milk or bread and milk. Fifty received the bismuth mixture and forty-seven the barium.

The roentgenological examination was made by means of the fluoroscopic screen, while the patient occupied a standing position. The outline of the gastric shadow was traced upon the screen at intervals until the stomach became empty. These tracings were transferred to thin sheets of paper and preserved as records.

Before undertaking this work it was my custom to refer patients to a roentgenologist for the examination of the gullet, stomach and intestines. Their conclusions were invariably reached by means of a series of plates. The reports were so at variance with my clinical findings, and indeed with the subsequent diagnosis at operation, that I determined to study the subject from the standpoint of the clinician and alongside the older clinical methods. Patients with even slight digestive disturbances were subjected to the examination. In many instances the indigestion was quite evidently the result of disease in remote organs such as the lungs, the kidneys or in the nervous system.

The examinations made with bismuth subcarbonate were found much more satisfactory than those done with barium on account of the comparative slowness with which the former contrast substance leaves the stomach. We may take the conclusions of Groedel as well established that barium leaves the stomach two hours sooner than the bismuth.

Every contrast substance as yet discovered undoubtedly produces a vastly different reaction upon the gastric musculature than the customary articles of food. Barium excites peristalsis too markedly for a satisfactory study of hypertonicity and hypotonicity.

Stiller's contention that a stomach in normal digestion cannot be shown by the roentgenologic method is well taken. No doubt the normal stomach is not tube but sack shaped during the digestive process. Until a new contrast material is found this criticism must remain a serious drawback in the Roentgen method of investigation.

The diagnoses are as follows: Group I, chronic gastric ulcer with stenosis (operated), 10; Group II, chronic gastric ulcer (not operated), 21; Group III, duodenal ulcer (operated), 4; Group IV, Duodenal ulcer (not operated), 2; Group V, neurasthenia, 21; Group VI, pyloroptosis, 11; Group VII, pulmonary tuberculosis, 5; Group VIII, atony, 6; Group IX, chronic gastritis, 4; Group X, cardiovascular disease, 3; Group XI, cholelithasis, 2; Group XII, cancer of the pylorus, 2; Group XIII, preataxic tabes, 1; Group XIV, diabetes, 1; Group XV, appendicitis, 1. Total, 94.

The most interesting case in Group I is that of a woman of fifty-one years who suffered from pain three to four hours after meals for three years. Acid foods increased the severity of the pain. She had lost fifteen pounds in six months during which time she had passed tarry stools upon two occasions. After an Ewald test meal the hydrochloric acidity was sixty and the total acidity eighty-five. Six hours after a test dinner 150 c.c. of chyme was recovered. Clinically this seemed a case of chronic gastric ulcer with a relative stenosis.

The fluoroscopic examination showed the usual J-shaped stomach with the lowest point two fingers breadths below the umbilicus. The peristaltic waves were not increased above the normal. Three and one-half hours were required for the 75 grams of barium to leave the stomach. Four hours after ingestion of the Roentgen meal there was observed in the left hypochondriac region a shadow which presented the appearance of a dumbbell. The end could be seen to alternately increase and decrease in size with a long, narrow constriction between. In this case the obstruction was apparently in the small intestine rather than at the pylorus.

A second patient with gastric ulcer had been subjected to medical treatment upon three occasions over a period of six years without relief. This patient gave a history of repeated haematemesis and typical pains three to four hours after meals.

The hydrochloric acidity ranged from 48 to 68 and the total acidity from 60 to 100. Occult blood was frequently found in the stomach contents and the stool. Six hours after a test dinner lavage revealed no chyme. The screen examination showed a very acute angle formed in the prepyloric region by the lesser curvature. No hyperperistalsis was seen. The barium meal had disappeared within two hours. Operation revealed a slight ulcer scar on the anterior surface of the pylorus but without stenosis.

Three patients showed persistent indentations in the greater curvature in the pyloric or prepyloric region after the Roentgen meals. At operation extensive stenosis was found in each case resulting from ulcer scars. The remaining five cases of operated gastric ulcer were found with marked ste-

*Read at the meeting of the American Gastroenterological Association at Washington, D. C., May 5 and 6, 1913.

nosis at the pylorus. Each case presented a normal appearance after the Roentgen meal, and in each case the bismuth or barium had entirely disappeared within three hours after ingestion.

Clinically all presented a typical history of gastric ulcer with the early stages of stenosis. Hyperchlorhydria was found, and a varying amount of food was present seven hours after the test dinner.

We find in Group I eight patients who suffered from pyloric obstruction of such a degree as to justify the performance of a gastroenterostomy. The roentgenoscopic examination gave no evidence of stasis or chyme. In this class of cases the performance of lavage is a reliable indication, while the *x*-ray examination is misleading. Group II—In this series one case showed a large amount of barium in the stomach five hours after ingestion, but was empty in seven hours. Lavage showed the presence of food twenty-four hours after a test dinner.

Twelve cases of gastric ulcer showed on the screen no antiperistalsis or hypertonic waves, while in each instance the stomach was empty within three hours. Typical histories with hyperchlorhydria and occult blood were found in each patient. In two lavage was performed seven hours after a test dinner and more than 200 c.c. of chyme recovered. Three were found with a marked acute angle in the lesser curvature and were empty of food and Roentgen meal within the normal time.

A man of seventy-three years presented a typical history of duodenal ulcer over a period of ten years. The test breakfast showed an hydrochloric acidity of 44, and a total acidity of 59, and the presence of occult blood in the stomach contents and stool. The fluoroscopic picture showed a hypertonic peristalsis with a failure of the prepyloric region of the greater curvature to assume its proper contour. Massage over this area during the examination made no change in this defect.

A diagnosis of ulcer probably of a carcinomatous character was made. The patient completely recovered after the rest and milk cure preceded by rectal feeding. The diagnosis in the four remaining cases of gastric ulcer was difficult without the use of the roentgenoscopic observation. In each instance a circular shadow persisted in the pyloric region even after the barium had entered the colon. These patients apparently recovered after the rest and milk cure. The conclusion was that a peptic ulcer existed which had involved the deeper layers of the gastric wall.

Group III.—The diagnosis in three of the six duodenal ulcer cases was aided by the presence of marked hypertonicity of the peristalsis. One patient, a man of fifty years, presented a typical picture of duodenal ulcer with very alarming malaena. The fluoroscopic shadow, however, revealed a markedly contracted stomach. Upon this latter evidence my diagnosis of cancer of the stomach was predicated. The patient succumbed after a violent hemorrhage, and the necropsy revealed a perforating duodenal ulcer.

The crescentic form persisting for five hours after a bismuth meal was found in one instance in which the test dinner had disappeared in six hours. Operation showed a marked stenosis due to adhesions just below the pylorus.

Group V.—Pseudo hour-glass stomach was found in two of the twenty-one patients with neurasthenia. The stomach when observed under the screen was divided at the upper third into two quite distinct pouches. The spasm persisted for two hours in spite of the effect of massage and exercise during the intervals of examination. Subsequent fluoroscopic examinations failed to show this condition. *X*-ray plates even by the stereoscopic method would fail to diagnose these cases.

Group VI.—The diagnosis of pyloroptosis is greatly aided by roentgenoscopy. This method is less likely to produce errors than the inflation of the stomach with $CO_2$, air, or by the employment of the deglutable electric light.

Group VIII.—The greatest disappointment in gastric diagnosis by means of the Roentgen ray is found in cases of motor insufficiency and atony. Bismuth and barium seem to cause weaker peristaltic action than one finds after a normal meal. The fluoroscopic half-moon shaped appearance persists for twelve to twenty-four hours. On the other hand, lavage may show an empty stomach eight to ten hours after a Riegel meal. The milder degrees of motor insufficiency caused by a weakened musculature cannot be determined by the roentgen method.

Group XII.—The diagnosis of the cases of pyloric cancer was made before the development of tumor. Both patients had suffered from loss of weight and strength, with a sudden onset of digestive disturbance. One had hematemesis and melena and the other showed no such signs. In both a persistent irregular outline was found near the pylorus. In one case the diagnosis was confirmed by autopsy; in the other by operation. The remainder of the cases in other groups presented normal fluoroscopic appearances.

*Conclusions.*—(1) Because of the relative slowness with which bismuth leaves the stomach it must be considered the most satisfactory contrast substance as yet employed.

(2) In cases of clinical gastric ulcer the failure of the pyloric region of the stomach to assume its symmetrical contour with the Roentgen meal is strongly presumptive of stenosis.

(3) The emptying time of the Roentgen meal is of no value to determine the early stages of pyloric stenosis. Lavage at varying periods after meals remains the only test of this condition.

(4) Hour-glass stomach is capable of diagnosis by the fluoroscopic method while other methods are entirely unreliable. Errors are easily made if careful and prolonged study is not undertaken.

(5) Fluoroscopy offers great aid in the differential diagnosis of motor insufficiency caused by atony and that produced by an advanced stenosis at the pylorus. Clinically one finds similar symptoms with a reduced hydrochloric acidity in each instance.

(6) The degree of motor insufficiency and atony cannot be determined by the present Roentgen method.

(7) Roentgenoscopy of the stomach is no more an exact mathematical method than percussion. At best deductions must be made from shadows.

(9) The best results in gastric diagnosis will be attained when the clinician himself employs the fluoroscope examination as one of his own clinical methods.

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# THE IMPORTANCE OF ADOPTING A MORE ACCURATE METHOD OF EXAMINATION FOR COLOR-BLINDNESS.

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In presenting a paper of this character before a body of professional men, it may seem unnecessary to enter into any discussion of the fundamental principles underlying color perception and color-blindness, but perhaps it might be well to refresh our memories somewhat on the physics of light and the process of perception of colors in the eye, so that we may better understand the subject before us this evening.

If a ray of white light is passed through a prism, the light, as it emerges from the prism is found to be broken up into various colors, which are known as the seven spectral colors. These colors are seen to be arranged from above, downward, according to their strength and greatest wave lengths, beginning with red at the top, which is the strongest, and has the greatest wave length, and running downward through orange, yellow, green and indigo, to violet at the bottom, which is the weakest and has the shortest wave length.

The human eye is supplied with perceptive nerve fibers through the optic nerve, which entering the eyeball at the posterior surface, break up into innumerable nerve filaments, which terminate in the retina, the innermost coat of the eye.

A proper division and a consequent correct understanding of color-blindness was not made until the latter half of the last century. Then it was that Helmholtz brought forward the long forgotten work of Young, and applied his theory of color perception to the result of modern investigators, with the final development of what is now called the Young-Helmholtz theory of color sense.

In order to demonstrate clearly they assume subjectively a reduction of colors to three base colors, which is but reducing or carrying back the sensation of colors to their base or final sensations. On this assumption, there are in the eye, three kinds of nerve fibers, those for red, green, and violet. Stimulation of the first produces the sensation of red, the second that of green, and of the third, the sensation of violet.

Objective, homogeneous or white light excites these three kinds of fibers in varying degrees according to their wave length. The red perceptive fibers will be strongest stimulated by light of the greatest wave length, the green perceptive by light of medium wave length, and the violet perceptive by light of the shortest wave length. Here must be accepted also the theory, that each spectral color (the colors resulting from breaking up white light) excites all three kinds of fibers—but one less, the others more strongly. Thus, if we suppose the spectral colors are arranged in a horizontal row, instead of vertical, as we are accustomed to see them, beginning with the red at the left and running to violet at the right, then three curved lines of varying lengths can be made to represent the intensity of stimulation of these three kinds of fibres; (1) the red perception, (2) the green perception, and (3) the violet perception or elements. Thus, in a normal eye, simple red strongly stimulates the red perceptive fibers, less the other two; sensation red. Simple yellow stimulates moderately the red and green perceptive, feebly the violet; sensation yellow. Simple green stimulates strongly the green fibers or perception, much less the other two; sensation green; and thus through all the remaining colors of the spectrum, to violet, which stimulates strongly the violet perceptive, feebly the other fibers; sensation violet. Equally strong stimulation of all the fibers gives the sensation of white or whitish colors.

It is not absolutely necessary, as has been assumed above, to suppose the existence of separate nerve fibers in the eye for these separate sensations. The theory would be of the same value if we supposed that in each individual fiber three different and independent actions took place. As the sense of

touch and the sense of sight in the eye, have evidently separate nerve fibers, so may the same be claimed for the sensation of the several base colors. The choice of the three colors named is somewhat arbitrary. Any three colors could have been taken whose combination produced white light.

With a diagram showing the curved lines representing the strength of the light waves above referred to, one is enabled to show what proportion each one of the fundamental perceptions enters into the colors of the spectrum, which is done by measuring the vertical distances from their place on the horizontal line to the corresponding points of each of the three curves. It is then seen that there is no color of the spectrum into which but one primitive color enters exclusively. The two others also furnish their contingent. No one (color) is therefore perfectly saturated (that is, coming from one color source alone). They are more or less spread with white and green in the lowest sensibly "saturated" or more-whitish. The curves also show us that yellow and blue are at the same time whitish colors, and the most intensely luminous in the whole spectrum. When we again add that a color "saturated" in almost the same degree as the other spectral colors, proceeds from a homogeneous combination of red and violet; that is to say, purple, and its whitish shade, pink, about all has been said in a theoretical way that may be said in relation to the chromatic or color sense.

To explain the abnormal sense of color or color-blindness, by the theory of the normal, we can in advance, conceive various possibilities. Let us suppose that one of the three fundamental perceptions is wanting or that one of the primitive colors is absent in the eye. It is clear that the whole color system will be upset.

It is evident therefore that this system must be completely different according to the absence of one or the other of the three primitive colors. It is virtually just in this way that it has been attempted to explain cases of strongly marked defect in the color senses or genuine types of blindness to color, found in real life. The term color-blindness has been justified by this, as it indicates a blindness to one of the primary colors. In this way, therefore, we distinguish according to the kind of element wanting, three classes of blindness, viz.: red-blindness, green-blindness and violet-blindness.

The color-blind have not the receptive or percipient organ for that color, and according to this theory, blindness to red is caused by the absence or paralysis of the organs perceiving red, and red blindness has then but two fundamental colors, which, adhering to the theory, as announced, are green and violet. Spectral red which feebly excites the perception organs of green, and scarcely at all, those of violet, must consequently appear to the red-blind, a "saturated" green, of a feeble intensity more saturated than normal green, into which a sensible portion of the other primitive colors enter. Feebly luminous red which affects the perceptive organs of red, in the normal eye sufficiently, does not, on the other hand, sufficiently affect the perceptive organs of green in the red-blind, and it therefore seems to them black. Spectral yellow seems to them a green saturated and intensely luminous and as it constitutes the precisely saturated and very intense shade of that color, it can be understood how the red-blind select the name of that color, and call all those tints that are, properly speaking, green, yellow. Green shows as compared with the preceding colors, as a more intense but whitish shade of the same color, as yellow and red. In fact, it is clear that a red and a green light excite one and the same elements in the red-blind. A red or green or an object red and green to the normal sense must seem fundamentally to the red-blind, to be the same color, and, if in an especial case, he knows how to discriminate, his judgment is simply guided by an intensity of the light. If then, a red-blind individual finds that a red and a green tint are exactly alike, it is necessary that the green be to the normal eye much less intense than the red.

Green-blindness derives its origin according to the theory from the absence or paralysis of the perceptive elements of green. The green-blind has, therefore, but two fundamental colors, adhering to our first theory—that is, red and violet. The spectral red which strongly excites the perceptive organs of red in the eye, and but very faintly those of violet, must therefore appear to the green-blind, as an extremely "saturated" red, but of a light, somewhat less intense than the normal red, which is comparatively more yellowish, as green forms a part of it. The spectral orange is again a very saturated red. But much more luminous. Yellow is also a more intensely red than spectral red, but on the other hand, more whitish, because a sensible portion of the other primitive colors enter into it. Green, with its shades, including yellow and blue, ought to be, correctly speaking, a saturated purple and with a mean intensity of light, but it is the gray of the green-blind, for it is composed of almost equal parts of the two primitive colors. Purple green and gray pass with the green-blind, for one and the same color.

In green-blind the same organ is also found affected by spectral red and green light. Red and green are then perceived by the green-blind in the same way; or, in other words, are to him in fact, exactly the same color. In cases where he succeeds in distinguishing them, one from the other, it is by the aid of the intensity of light. It is the opposite of what occurs in the case of the red-blind. A green tint, which to the green-blind must appear exactly like a red one, to a normal sense of color must be sensibly more luminous than red.

Violet-blindness, according to the theory, is due to the absence or paralysis of the elements perceiving violet. The two primitive colors of violet-blindness, according to the theory, are red and green. The red is a purer red color than normal red, but still less saturated. The green is a stongly luminous but whitish green, tending toward blue. The violet-blind do not confuse the colors of red and green, and this type of color-blindness is very rare.

Now, having considered the process of perception of color in a normal eye and in the color-blind, let us look at color-blindness from a practical point of view, and consider the dangers, to life and property, resulting from color-blind persons being employed in positions where it is necessary to properly distinguish the various color signals used.

To Holmgren, who originated and published in 1887 his method of examination for color-blindness, do we owe, above all others, the present and future control of color blindness, on land and sea, and by which life and property are safer and the risks of traveling less.

It has been determined that one male person in twenty is color-blind in a greater or less degree, and there are all grades of color blindness, from

defective to complete. The proportion of color-blindness in women has been found to be about one in every one hundred. This is explained by the law of non-heredity on the mother's side.

Of this defect, those so afflicted may, even themselves, be wholly unconscious. The majority of cases of color-blindness are congenital, and are largely of a hereditary nature and, as such, have been known to run through several generations of a family; and this form of the defect is incurable. Color-blindness may also be temporarily or permanently caused by disease or injury.

Color-blindness is red, green, or violet, and exists in varying degrees. It may be complete or partial and the latter is designated as color-defective or incomplete color-blindness. We may suppose, in comparison to the normal color sense, that feeble or defective or incomplete color-blindness is due either to a weaker response to excitation on the part of the color-perceptive organs of the retina, or to the presence in the retina of a relatively small number of these organs. Exercising the eyes with colors, and the ears with their names, helps the color-blind to supplement their eyes, but does not change their color perception.

Experiment and experience show that we are forced to use red and green signal lights to designate a vessel's direction of motion and movement, and at least red and green on railways to denote danger and safety.

It is a unique coincidence and seems particularly unfortunate that the most common form of color blindness, red- and green-blindness, should be the identical colors that have been selected by all nations to be carried on the two sides of a vessel, from sunset to sunrise, as signal lights, and also used on all railroads by day and night for similar purposes. These colors were selected (doubtless) because of their brightness and the distinctness with which they are seen, a long time before anything was known of color-blindness, or it was even thought of.

If color-blindness is considered a grave danger on the railroad, how much more is it on the sea. Colors are very important to mariners. The flags for signals, the side lights of vessels for danger, and even the lighthouses, the beacons and buoys present various colors necessary to be distinguished.

A very grave defect with the present Holmgren method now chiefly in use in examinations for color-blindness, may be shown as follows: The majority of even color-blind persons are well able to distinguish bright red from bright green when they are near the eye, and well illuminated, but this power diminishes with great rapidity when they are removed to a distance from the eye, so that separation of a few feet or a few yards, according to the severity of the case, abolishes all sense of distinction between red and green. As the colored day signals used on railroads, especially the flags, which alone are available in some of the most pressing emergencies, soon tarnish and darken; the effect of time is to change light reds and greens into much darker shades, and thereby to continually diminish the distance (small at the best) at which the two danger signals can be distinguished from each other by color-blind observers.

It is just such cases as those above referred to that may succeed in passing a test examination undetected, by the prevailing method, unless the test is supplemented by some other more accurate means of detecting the existing color-blindness. For we know the Holmgren method consists of selecting colored skeins placed at no appreciable distance from the eyes. The practice of permitting employees, other than professional men, as is the custom of many railroads, to conduct these examinations, tabulating the result on cards, to be examined later by the surgeon, is, to my mind, a dangerous procedure and one which should be prohibited by law. A skilled professional man, thoroughly experienced and posted in this work, alone should conduct these examinations. It is not the work that a novice or beginner in the practice of medicine should be permitted to perform, let alone the trusting of such important duties to a non-professional man.

It may well be stated that the Holmgren color test as employed in examinations for color blindness, is in many instances unsatisfactory, and with our present knowledge inadequate, and should, when used, be supplemented by an additional examination, and is a matter which warrants earnest consideration. It has been shown that when used alone, the Holmgren method fails to detect all cases of color blindness.

In view of the revelations made while conducting these color tests it is highly important, as a check on the Holmgren skein test, that a supplemental lantern test be adopted with which, by the use of various colors and apertures of different sizes, the defect of color blindness can be easily detected under conditions such as those which naturally prevail at sea or on railways.

In the case of masters, mates, and pilots of vessels, who periodically are required to undergo the test for color-blindness, there is a natural objection to the Holmgren method, and should the applicant fail to pass the test satisfactorily, the claim is promptly set up that he can readily distinguish the various signal lights used on vessels. In numerous instances this claim has proved to be correct when resort was made to that mode of procedure. The above will apply equally as well to employees of railroads, since they, too, are also required in the same way to stand the test for color-blindness. In many instances, too, the Holmgren skein test has proved confusing, and it has been next to impossible to make the individual thoroughly comprehend what is expected of him.

It is a well known fact that while many color-blind people are able to match colors with accuracy, they are unable to name the colors correctly, particularly if they are examined under conditions that naturally prevail, such as the presence of mist or imperfect illumination, and the varying effects of distance and size of the colored subject.

As one of the reasons for the necessity of a double test, by means of a special lantern, Dr. W. F. Edridge-Green of England, who is probably the greatest living authority on color-blindness, cites the case of an individual who, when examined with the largest apertures of the special lantern invented by him, mistook red for green and vice-versa, who nevertheless was able to pick out and match all of the five test colors of the Holmgren method, in which the color names are not used.

Having recognized the defects of the Holmgren test, the British Admiralty has adopted the Edridge-Green lantern as the best means of detecting all cases of color-blindness. It is properly claimed that the Holmgren method, in addition to rejecting many normal sighted persons, allows a large per cent. of those who are dangerously color-blind to pass.

As the Holmgren method is now universally in

use, it should not be dispensed with, but it should be supplemented by the lantern test in all cases.

It is a matter of such vital importance, where the lives of many thousands of persons are daily dependent on the perfect color sense of those to whose care they are entrusted, on railways and vessels, and also property of great value, that no precautions that are possible within our knowledge should be neglected or overlooked to afford every safeguard and protection.

As a step toward the proper solution of this question, it might be proper, at this time, to suggest the selection of a committee, to be named by the Section on Ophthalmology of the American Medical Association to make a comparison of the Holmgren test, with the special lantern test, as is now used in England, and make recommendations as to the relative merit of these methods, with reference to adopting a new standard test for color-blindness.

Observation and experience extending over more than twenty years in the use of the Holmgren method, has led to the conclusion and the belief that the Holmgren test as now conducted should be supplemented by the lantern test, which is more accurate and better adapted for the detection of color blindness.

## GLYCOSURIA AND THE BULGARIAN BACILLUS.

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Some time ago on account of articles appearing in medical journals in relation to the action of the Bulgarian bacillus in cases of glycosuria I determined experimentally to place a number of cases in my clinic under this treatment, and to this end wrote for directions to one of the physicians who had had a great deal of success and was mainly instrumental in bringing the treatment to public notice. He very kindly offered to direct the treatment if I would send him the history, symptoms, diet, etc., of the cases. To make the experiment more conclusive, because I felt that there might be a question in relation to the activity of the particular brand of the bacillus used, I changed the brand of the bacillus in two of the cases without making any change at all in the diet.

As it seems only right that we should record for the benefit of our confrères our failure as well as our successes, I am reporting these cases. I would state incidentally that a couple of years ago I classified the various forms of glycosuria, describing the symptoms, the diagnosis, and prognosis of each form, and referring to that division I would say that two of the cases reported are of the form classified as Type B; four are of Type C (one of these having been discovered very early), and one is of Type D. In this series of cases I have included each of the types of glycosuria except that which has its initial trouble in the fourth ventricle, and while I have had two of these cases at my clinic since I have begun this experiment, I have felt that it would not be of any use to try the bacillus in these cases, as they responded very readily to treatment directed to the initial trouble in the brain and required no treatment in relation to the sugar in the urine. I would also state that in each of these cases I have a full history and daily diet list and the almost daily analysis of the urine, and my notes also show the daily amount of labor each patient has performed. As it would be beyond the limits of this article to record all this, I shall record only the essential points, but I should be very glad, if it is of interest to any one, to give him the daily lists.

Case I.—Glycosuria. Type D. Young man eighteen years of age, rather tall and thin, gives following history: Father and mother perfectly well; up to three years ago had been well but at that time noticed that he was exceedingly thirsty. He consulted a physician and sugar was found in large amounts in the urine. He weighed at that time 138 pounds, and by careful dieting the physician said that he was able to have the urine free of sugar. The case went along for three years, at times the sugar being entirely absent. He grew tall during that time, continued at school, and increased in weight to 153 pounds. He thinks that his urine has not been free from sugar, as far as he understood his physician's report (his physician has recently died) for the past year and a half. He now weighs approximately 148 pounds. He has had diarrhea several times since he has been on the diet, but otherwise he has been quite well except for an occasional cold. He was put on a moderately strict diet, of which the following is a fair sample: Breakfast, one-half grape fruit or orange, eggs (with an occasional small amount of bacon), rolls made from peanut flour, 2 ounces of thoroughly cooked oatmeal. He was allowed what fresh milk he wished to drink at any time. Lunch, thin soup, meat, onions, spinach, orange jelly, or some other saccharin dessert. Dinner, thin soup, small amount of meat, some green food, 1 ounce of white bread, 1 ounce of rice, apple sauce sweetened with saccharin, 1 ounce of nuts. While this was a typical diet, still his food was varied from day to day by the substitution of other articles not containing, however, any more carbohydrate, so that throughout the time of the treatment he ate a large amount of food with great relish and digested it very well. During the

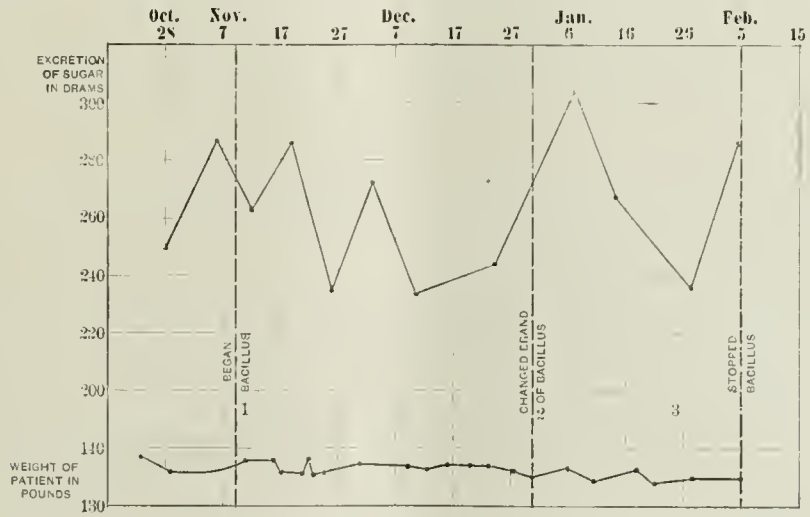


Chart No. I.

time of the experiment he continued at school daily, but took very little exercise besides his short walk to school and back again, although he slept in a room to which the outdoor air had free access during the night. Twice during the treatment he took a severe cold, which, however, only lasted for a few days. From October 28 to November 12 he was on this diet. On November 12 he was given a dose three or four times a day of the Bulgarian bacillus.

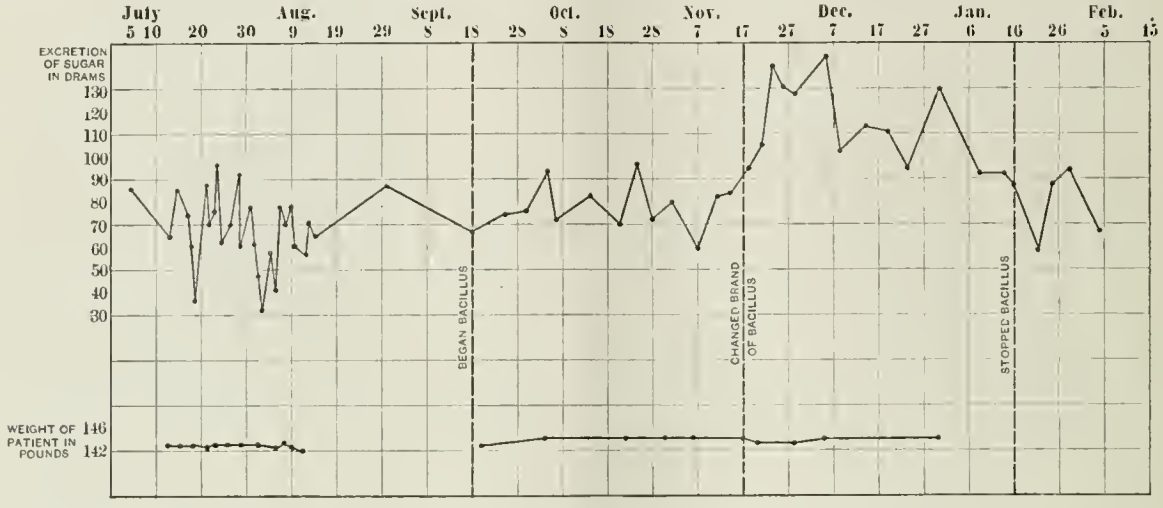


Chart No. II.

It was administered as follows: 7 c.c. of the bacillus (which had been kept cold) was mixed each morning with 3 ounces of water. One-third of this was taken one-half hour before breakfast, following it immediately with 3 ounces of milk. Another ounce of the mixture was taken at luncheon time followed by milk, and the remaining amount of the mixture was taken one-half hour before supper, following it with 3 ounces of milk. Several times during the treatment a fourth dose was given one-half hour before bedtime. The bowels were moved freely twice each week, using castor oil, and the reaction of the feces was taken twice each week. This reaction was never alkaline; it was several times neutral but usually strongly acid. Without any change in his diet or way of living this was continued until January 1, at which time he was given another brand of the Bulgarian bacillus. This bacillus was given as follows: The contents of one tube of the Lactobillene Liquide was added directly to half a glass of warmed milk, which was drunk one-half hour before each meal, and a fourth dose before retiring at night. This was continued up to February 4 at which time the medicine was stopped and he was continued on the diet without any medicine at all. His weight, as will be seen from the chart, while not having changed much, showed a slight tendency to decrease. As far as the amount of sugar in the urine was concerned there was apparently no change whatever while he was taking either form of the bacillus. The variations in the excretion of sugar in his case (and in most cases of this type) were considerable and were only what would naturally be expected, as can be seen by comparing Case VI, which I have used as a control case.

Case II.—Glycosuria. Type B. Man about forty-six years old. Family history good. Four years ago he was troubled with night sweats. At that time his physician examined his urine and found that it contained sugar. He was very stout at that time but gradually decreased in weight from 175 pounds to 134 pounds. His weight then began to increase and went up to 150 pounds. At the beginning of this treatment it was 145 pounds. He had never had a history of extreme thirst and had never passed exceedingly large amounts of urine. An analysis made a year before coming into my hands showed 87 grams of sugar. As far as he understood his physician, his urine has never been free from sugar since it was first discovered four years ago. When he came into my hands he was following a printed diet list, with the addition of so-called "gluten flour" bread. The variations during the first month were very marked and were due entirely to various changes in the diet. For instance, on July 15 he was given the following diet: Breakfast, orange, ham and eggs, glass of milk. Dinner, thin soup, fish or meat, tomatoes, milk, iced tea. Supper, thin soup, meat, spinach, raspberries and cream, iced tea, milk, and also what water he cared to drink. This diet was continued four days, accompanied, as will be seen by referring to the chart, by a steady decrease in the amount of sugar. To this diet was then added 2 ounces of cereal for breakfast, 1 ounce of bread for dinner, 6 ounces of green peas and ½ ounce of bread for supper, and this change was followed by a corresponding increase in the amount of sugar. During the next few weeks I was giving him various amounts of different kinds of carbohydrate and watching the excretion of sugar following the ingestion of the different forms of carbohydrate. By August 15 I succeeded in arranging a fairly satisfactory diet on which he seemed to be able to attend to his work, feel

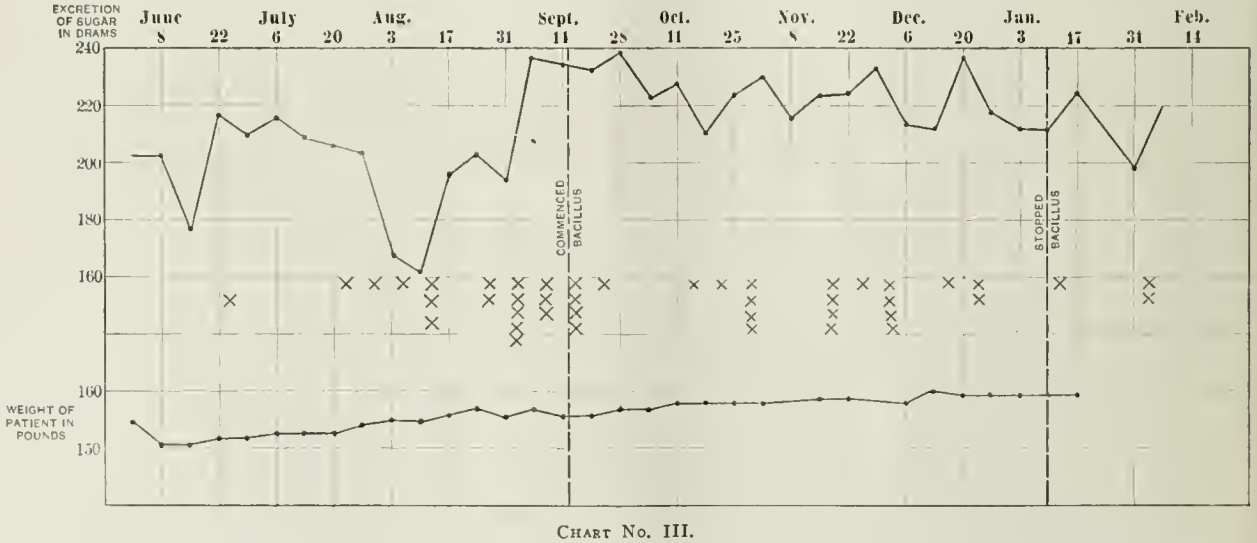


Chart No. III.

well, and not decrease in weight. It contained as the carbohydrates 2 ounces of oatmeal in the morning, 2 ounces of white bread at some time during the day (usually part of it at noon), and on September 7 I added 1 ounce of rice at night. This was continued and on September 18, without any change in the diet, he was given one tube of Bulgarian bacilli mixed in milk one-half hour before each meal. His bowels were moved freely on two regular days each week sometimes by the aid of castor oil and sometimes by the aid of Hunyadi water. This was continued up to November 17, a period of nine weeks, without any apparent change. At that time without making any change in the food he was placed on another brand of the Bulgarian bacillus, given in the following manner: 7 c.c. were mixed with 3 ounces of water, 1 ounce of this mixture was taken one-half hour before each meal and immediately following it one-half glass of warmed milk was taken. The amount of sugar in the urine steadily increased. Early in December the patient complained of not feeling as well as he had previously felt and that he found it harder to attend to his duties. He was continued on this treatment until January 16, a second period of nine weeks, at which time, as will be seen from the chart, there was no appreciable change in the amount of sugar excreted. On that day he was placed on a starch-free diet with the result that the sugar was decidedly decreased. He was then given small amounts of carbohydrate, somewhat less, however, than he had been taking before January 16. The rice was entirely eliminated and only one-half of the oatmeal was allowed. His weight, while it had only varied very slightly during the experiment, had shown a slight tendency to increase.

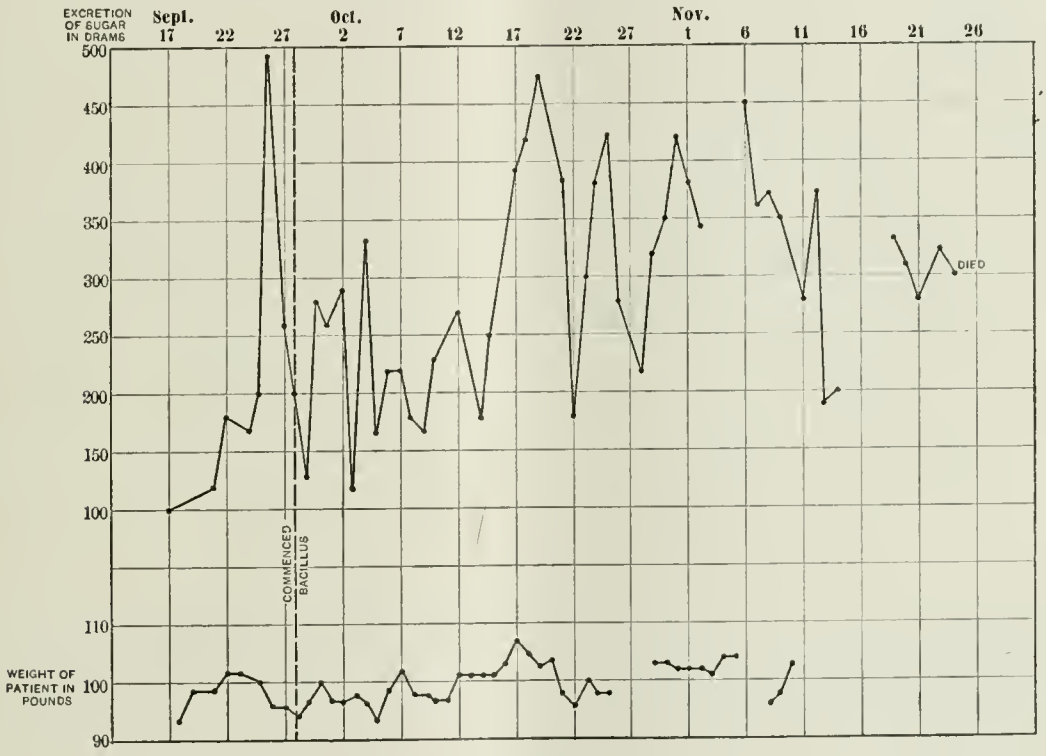


Chart No. IV.

Case III.—Glycosuria. Type D. This was a case occurring in a young man about twenty-one years of age. He was seen very early, in fact, soon after the onset. When commencing treatment it was very easy to make the urine sugar-free and I found that the patient was able to take as much carbohydrate as was contained in 1 ounce of white bread three times a day, without showing any sugar in the urine. He, however, began eating candy and cake and we found the sugar present again. After that, as always occurs in this type of case, it was more difficult to keep the urine sugar-free than it had been previously. As during the experiment the sugar was present only at certain times and it was impossible on account of the small amount to estimate its quantity, I have drawn diagrammatically on the chart his specific gravity and also his weight. In this case I have only charted the data beginning in June as this will cover a considerable period before he began taking the Bulgarian bacillus. This has been shown each week and the crosses indicate the number of days on which a trace of sugar was found during that week. The lower line indicates his weight. It must be noted that this had increased during the previous six months (while he had been under my care) from 140 pounds to 155 pounds. During the first two weeks, as shown on the chart, his weight dropped to 150 pounds due to a severe diarrhea following the eating of some decayed fruit. A typical diet, such as he was taking from June until the beginning of the treatment, would be about as follows: Breakfast, orange or grape fruit, eggs with at times a little ham or bacon, weak tea or coffee with cream, two Casoid biscuits and butter. Dinner, thin soup, cooked vegetable (as cabbage, spinach, dandelions, asparagus) and an uncooked vegetable (as lettuce, celery, cucumber), meat, saccharine dessert. Supper, thin soup, meat or fish, cooked vegetable, uncooked vegetable or an orange, cheese or olives, saccharine dessert, milk. On August 31 to his diet list was added 1 ounce of thoroughly cooked oatmeal for breakfast, and 1 ounce of white bread for dinner, 1 ounce of rice at night. As will be seen the specific gravity took a sudden jump and traces of sugar were found present in the urine during five of the next seven days and three times during the second week. Without changing the diet in any way he was then given a preparation of Bulgarian bacilli. The contents of one tube mixed with warm milk was taken one-half hour before each meal and the contents of a fourth tube which had been mixed in milk at noon and kept warm was given to him when he went to bed at night. This was continued without intermission until January 10. I also discontinued the rice and one-half of the amount of white bread which he was taking. The specific gravity of the urine remained about the same during the course of the treatment. There was a marked increase following the addition of the extra carbohydrate (about September 5) and there was an increasing number of times when sugar was present in the urine. The weight which, on account of the intestinal disturbance, had fallen to 150 pounds had gradually increased to 156 pounds when the ferment was commenced and kept on increasing to approximately 159 pounds. The weight did not seem to be influenced at all by the bacillus. This case was on the particular preparation of Bulgarian bacilli for four months continuously.

The next three cases make a very interesting series when compared one with the other. The three cases were each under my care at the same time. They were each of the same form (Type C), and the diet in each case was, as far as possible, the same. The amount of non-carbohydrate food which each patient took varied one from the other according to each patient's appetite, but the amount of carbohydrate food taken was identically the same

each day, both as to amount and variety, except that once or twice one or another of the patients would become tired of the oatmeal or rice, in which case we substituted wheatena, giving exactly the same amount. Two of these cases were treated with the Bulgarian bacillus, while the third case received no medicine at all, being used virtually as a control case.

Case IV.—No history of glycosuria in family. Case of boy aged about sixteen years. Struck with a brick on the head about four years ago. He was unconscious for some little time, was taken to the hospital, and some stitches were taken. The 2-stitch scar shows now on the right side of the occiput. Two months previous to admittance he noticed that he had a good deal of thirst and was passing a large amount of urine. He was dizzy and felt weak. He went to the out-patient department and after two months' treatment was referred to the hospital. He was poorly nourished and undeveloped. He was on a rather strict diet which, as far as possible, I tried to continue. Seven days after he was admitted he had an ulcerated tooth which caused his face to swell and which also caused him a great amount of pain. The urine excreted during the time showed a large increase in the amount of sugar, reaching almost 500 grains in the twenty-four hours. During the late afternoon of that day his abscess broke and the dentist also treated it, with entire relief of the pain and swelling. It was very curious to see how rapidly the sugar disappeared during the next forty-eight hours. On the morning of the twelfth day his output of sugar having returned approximately to normal, there was added to his diet 1 ounce of well-cooked oatmeal in the morning, one slice of white bread for dinner and 1 ounce of cooked rice for supper, and as a medicine he was given one tube of a preparation of Bulgarian bacilli dissolved in warm milk one-half hour before each meal and another at bedtime. The output of sugar continued with considerable variations from day to day as it always does in these cases, showing a somewhat upward tendency due to the addition, undoubtedly, of the extra carbohydrate in the form of the oatmeal, white bread, and rice. On October 15 he showed symptoms similar to the grippe, having headache, pain in his muscles and joints, and considerable running from the nose. This continued for several days and probably entirely accounted for the rise in sugar output (his diet was not changed at all except that he did not eat as much of the articles allowed as previously.) October 19 his temperature was normal, and on the 21st he seemed to have completely recovered and was up and about and feeling perfectly well. The analysis of the urine passed the 22nd showed a very sudden drop in the amount of sugar and he also was showing symptoms of drowsiness. He would sit in the chair beside his bed and drowse during the morning. It was easy to rouse him, but as he said "he just felt sleepy." During that day I ordered him to be given three cups of cocoa, each of which contained a teaspoonful of sugar. The next day he felt much better and was not as drowsy, and by the next day he seemed to have completely recovered. It is interesting to note that the sudden drop in sugar was coincident with the gradual drop in his weight and that on account of his symptoms when we added cocoa with sugar the output of sugar increased, his weight also showed an increase. The case continued without any change in the diet or his medicine and without any particular symptoms until November 11, when the nurse told me that he was not as bright and active as formerly, although when I saw him he seemed to be about the same as usual. On November 15 he did not get up at all, although he would answer me intelligently, still he was quite drowsy and the output of sugar had very suddenly decreased. He was then ordered four cups of cocoa during that day, to each of which a teaspoonful of sugar had been added. Even with this addition the output of sugar the next day was approximately the same and it was harder to rouse him. During the next night he became comatose and died two days later.

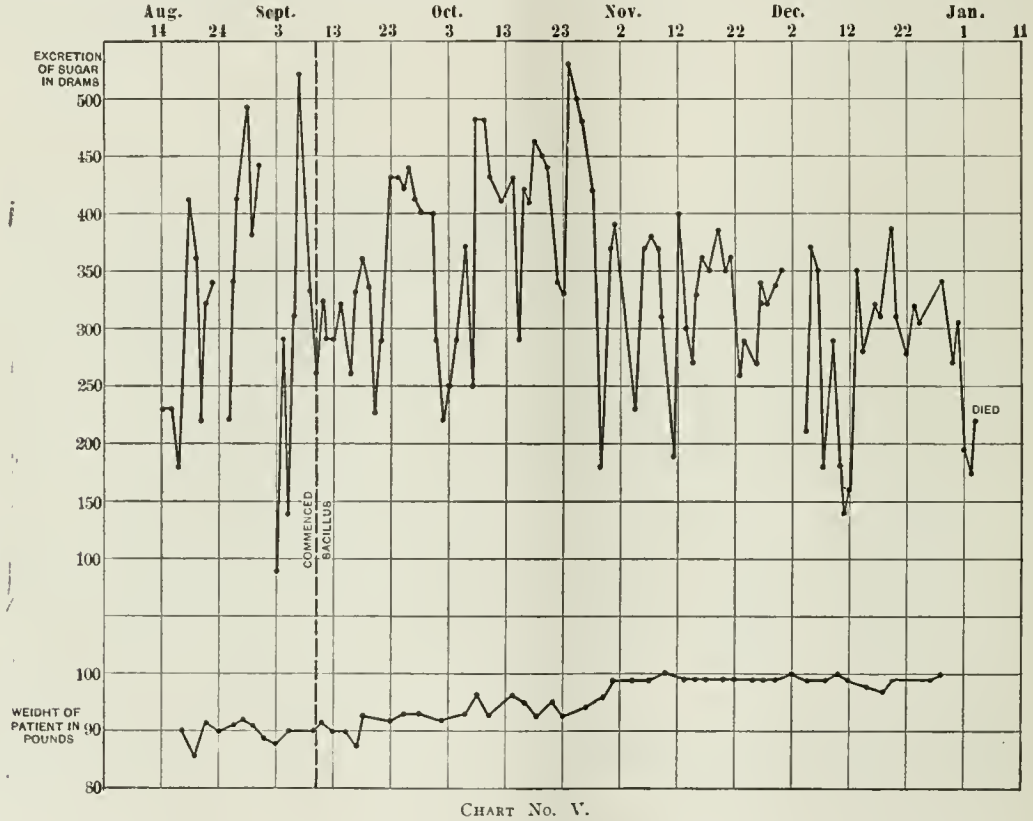


Chart No. V.

Case V.—Glycosuria. Type C. This case was particularly interesting as it was under observation for about a month before beginning with the Bulgarian bacillus. The patient was a girl seventeen years old, rather thin but bright and intelligent. Her family history as regarded sugar trouble was negative. For the past three months she had had a great thirst and passed large quantities of urine. The onset was rather sudden but she could not place the beginning of the thirst more closely than within a period of about two weeks. No attention was paid to her trouble until after she began to lose flesh, which was approximately a month after her first noticing the thirst and polyuria. She then consulted an "advertising institute" where she received some sort of treatment. On August 14, she was assigned to my service and as the preliminary examination showed a considerable amount of acetone and diacetic acid, she was put on a fairly liberal diet. She was allowed milk, eggs, and meat, as she liked, a small quantity of potato or any other vegetable, and a slice of bread with each meal. She was also given ten grains of bicarbonate of sodium each day and her temperature was

taken at two, four, six, and eight each afternoon to see if there were any rise in temperature during the afternoon hours. On August 19 her diet was made somewhat more restricted. She was allowed milk, meat, eggs, thin soup of meat or fish, but for carbohydrates was restricted to one slice of bread with each meal and for green food, peas, lettuce, celery, spinach, with one orange or one grape fruit or two pears each day. The sugar decreased during the next two days, possibly due to the restriction in the diet. This diet was continued until the sudden great drop came on September 2 and 3. At this time she was given twenty grains of bicarbonate of sodium with small portions of any carbohydrate and also a glass of lemonade twice a day, in which were put two teaspoonfuls of sugar. The drowsiness which she had had for two or three days rapidly and entirely disappeared. On September 7 she being apparently in her normal mental condition, the diet was restricted as on August 19 with the addition of one ounce of oatmeal for breakfast and one ounce of cooked rice for supper and the bicarbonate of sodium was reduced to ten grains a day. The sugar was reduced in amount and came back to what apparently was about her normal (300 grams a day). The acetone and diacetic acid were reduced in amount. I had had a correspondence with a physician who had advocated the use of Bulgarian bacillus in cases of glycosuria and he very kindly offered to outline the treatment and diet in this case. On September 10 the patient was given four vials of a preparation of Bulgarian bacilli as follows: the contents of one vial in milk one-half hour before each meal and the contents of a fourth vial in milk a few minutes before retiring at night. She was also given 30 grains of bicarbonate of sodium and was given enough castor oil to cause her to have at least two free evacuations on two regular days each week. The reaction of the stool was taken twice a week and there was never any time during the continuance of the case that the reaction was not acid. There was nothing very particular to say in relation to the continuance of the case. The same general diet was continued throughout the case with the exception of a few minor changes in her diet as advocated by the physician who was advising me about the case. Also the same general treatment was continued except that at times she was given but three vials of the liquide daily instead of four. On September 30 I began fermenting a pint of milk a day with the Bulgarian bacillus, but after taking this for about two weeks it became so thoroughly distasteful to the patient that it was given up. About the middle of October we took away a considerable proportion of the sweet milk which she had been taking. There was also added to her diet list an extra slice of white bread each day. With these slight changes in her diet the case progressed and the output of sugar varied as it does in this class of cases. The high output of October 24 and 25 was due to an attack resembling the grippe. On November 10 and 11 there was a considerable drop with accompanying symptoms of slight drowsiness and some loss of appetite. She was given two cups of cocoa during that day, each of which contained two teaspoonfuls of sugar. The symptoms disappeared the following day and she went on much the same as usual until December 10 when she showed again some slight symptoms of drowsiness and she was given cocoa with sugar. December 11 showed symptoms of slight drowsiness and loss of appetite. She was this time given three cups of cocoa which contained two teaspoonfuls of sugar each. The second day following all her symptoms had decidedly improved and she remained up and about, going out of doors and feeling very well indeed until December 31. On that date she partially lost her appetite and this was followed by a decided decrease in the amount of sugar with signs of impending coma. She was given cocoa three times a day, made with sugar, and in addition was given 60 grains more of bicarbonate of sodium but within two days she was totally unconscious and never roused again. Her weight which had averaged about 90 pounds when she was admitted, had gradually increased to about 100 pounds and remained about there until her death.

Case VI.—Glycosuria. Type C. This is a case of a young boy eighteen years old. His family history negative as regards sugar. His general health had been very good. About four months before I saw him he had been troubled with thirst and polyuria. This continued nearly a month before he consulted a physician. The physician made an examination of the urine and placed him on a comparatively rigid diet. The patient was not careful in regard to his diet, eating bread and sometimes a piece or two of candy. He was sent to my clinic in the early part of October, while the other two cases of this type were being treated. I placed him on the same diet that they were having but without giving him any medicine, either bicarbonate of sodium or the Bulgarian bacillus. He was allowed the same amount of carbohydrate food that the other two cases had, but was not restricted as to the amoun of nitrogenous food which he was allowed. He was also given all the sweet milk he wished each day. On November 9 the urine showed a great diminution in the amount of sugar and he was complaining of lassitude. He was given that day two cups of cocoa with two teaspoonfuls of sugar in each and was also given an extra slice of white bread. Two days later, apparently having returned to his normal condition, he was again placed on the same diet as the others. On December 24 as he was very anxious to return to his home for the holiday, I allowed him to do so. The patient is still supposed to be on the same diet as he was taking while at the hospital. I see him once a week but I shall not record his analyses as I do not consider that he is adhering strictly to the diet and under these circumstances the analyses would give us no reliable data. He reported on February 17 and seemed to be as well as he was during his residence at the hospital.

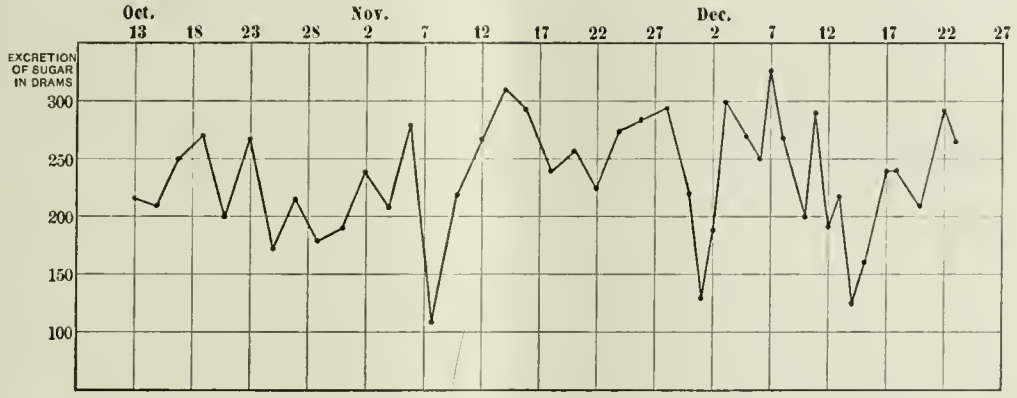


Chart No. VI.

These three cases were all of the same type, all under treatment at the same time and all received virtually the same diet. Two of these received the Bulgarian bacillus (one of them in addition received daily doses of sodium bicarbonate) and one of them received the same diet, but was not given any medicine. The two who received the Bulgarian bacillus are both dead, although this fact I do not think we ought to use as an argument against the use of the Bulgarian bacillus, but we can say that in these two cases the Bulgarian bacillus was apparently of no benefit.

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**Abdominal Aortitis.**—J. Colombe states that whatever the cause of this condition the chief symptoms are pain and gastrointestinal disturbances. Other symptoms are epigastric pulsation, reflex phenomena, such as vertigo, dyspnea, attacks of syncope, and sialorrhea. The physical signs are tenderness on pressure over the course of the abdominal aorta, enlargement of the latter, and its deviation to the left, increased mobility of this artery, and occasionally murmurs.—*Gazette des Hôpitaux.*

# OBSERVATIONS ON SOME CLINICAL FEATURES OF PAINFUL OXALURIA.

By B. G. R. WILLIAMS, M.D.,

PARIS, ILLINOIS.

Down through the history of medicine we note occasional references to the possibility of injury and irritation resulting from the passage through the urinary tract of certain inorganic sediments, notably the crystals of calcium oxalate. However, the diagnostician has been loath to acknowledge that symptoms arising from these conditions may be explained without the presence of another or other lesions. For example, Maguire[1] would rather believe that he effected the solution of an oxalate stone in a ureter by aid of diacid-sodium phosphate—an oxalate stone, mind you, which failed to show a shadow, than that the clinical features of the case could have been explained alone by the fact that the crystals of this substance were present in the voided urine. Authors of texts upon urology and surgery approach the subject apparently in fear and trembling; and either make a few indirect remarks or else slyly omit it. Even Cabot,[2] though somewhat braver than the rest, hesitates to attribute to the condition, the emphasis which it deserves.

In a former communication[3] I emphasized the fact that these crystals may certainly give rise to symptoms quite similar to those caused by renal or ureteral calculi; but that the two conditions may be differentiated by the uranalysis and by the *x*-ray picture. Further, I attempted to show that while the latter demands surgical interference, the former falls into the realms of internal medicine. To this condition I applied the term painful oxaluria (*oxaluria dolorosa*).

These remarks may serve well for an introduction to the several case reports and observations which I am about to add:

Case I.—Miss A. G., a farmer's daughter, age 25 years, with a negative family and personal medical history, complained of considerable distress in the lumbar area, of several years' duration. The pain was almost continuous, and though at times very severe, she had never been bedfast. The "misery" had never been referred to the abdomen or the pudendum. Both sides were equally affected (an item which makes calculus very unlikely). She did not believe that her urine had ever contained blood. Examination revealed a normal temperature, pulse and respiration frequency. The abdominal examination was entirely negative. She stated that the pain was quite as likely to be severe in the early morning as at night; and examination ruled out the possibility of flat-foot. Visceroptosis was not diagnosable; though one physician had told her that she had a floating kidney. (She said that she had been treated as a "neurotic"). A blood examination failed to throw any light upon her condition; but the urine contained many calcium oxalate crystals, large numbers of which were minute and imperfectly crystallized, often acicular or with sharp points. Questioned as to the season in which her distress was most intense, she quickly answered, "In the summer." The diagnosis was, therefore, rather clear; but we thought it best to take also an *x*-ray picture. This was negative. Repeated examinations of the urine failed to show pus or mononuclear cells, and failed to identify tubercle bacilli. Invariably were the oxalate crystals found; and these were present in the largest numbers when the pain was most severe. Blood cells were never found, but hemoglobin was frequently identified.

The treatment followed in this case, was very similar to that advised at the end of this chapter. The urine was scarcely acid, but the acidity increased as sodium phosphate was exhibited. Apparently the treatment was not in vain, for the irritation almost instantly disappeared. I was somewhat surprised however, to find upon a subsequent examination that the oxalate crystals had given away to the whetstone forms of uric acid, and that these were present in the freshly voided urine. The acidity became tremendous. Dietetic treatment was continued but the phosphate left off. Symptoms have not yet reappeared; although I have noted that these may be long preceded by reappearance of the oxalates. The patient does not adhere closely to her diet, being convinced that she is cured. Time will solve this problem much better, however.

The chemical relation between oxalic and uric acids is so close that I am not surprised to note the vicarious phenomenon described above; although I am scarcely able to explain just what part, if any, the phosphate treatment played in the matter. The change was effected when the urine became highly acid. It may occur more readily here, I should think, than in diabetes where the total oxalic acid is vicarious (very often) to glucose. Parenthetically I have often noted that when the glucose in diabetes decreases, large numbers of uric acid crystals may appear. Is there an interrelation between these three bodies: if so, what is this?

Case II.—Mr. G. S., a farmer of 42, came to me for a diagnosis. Examinations were negative save for the finding of large numbers of small oxalate crystals and red blood cells in his urine. When blood was absent from his urine, he suffered but little distress, but at these times crystals could be found only with difficulty. Upon what did this man's pain depend? The answer is clear to me; but unfortunately the case cannot be detailed quite so thoroughly as the one above. The patient refused either to pay for an *x*-ray examination or to follow a diet which would have possibly aided us in the diagnosis, stating that he wanted some medicine which would "dissolve the stone." Although he had tried most of the stone-solvents, apparently he was not yet discouraged.

A calculus may have been lodged in the renal pelvis or ureter. The distress was typical of such a condition; but the uranalysis supplied another explanation. Still calculus and oxaluria may have coexisted. The former to have been present, would almost necessarily have been rich in oxalate salt, and cast a dense shadow. Had this man been in a hospital, the question could have been solved. Disgusted with the fact that we would not attempt to dissolve his stone, he decided to consult an osteopath who assured him that he could "manipulate it."

Case III.—A. S., a boy of ten with a previous negative medical history except that several years ago, he fell from a first story window upon his head. No bad effects were noted at this time. But soon after this he began to suffer from a nocturnal enuresis, which constantly grew worse. At the time of examination he voided urine into the bed several times each night. His urine "irritated him" and often dribbled. At times during the day his bowels moved without his knowledge. Spanking had been tried without success. A rather complete physical examination, including a thorough study of his nervous system, revealed nothing of diagnostic value, except a "neurotic" temperament. There was no phimosis and no evidences of hypothyrea. Some urine which was collected half an hour after the noonday meal, showed a specific gravity of 1034. Could this be a case of neurogenous diabetes resulting from injury of the medulla in the fall mentioned above? I fully expected to find glucose; but this was absent. When, however, a specimen of the unfiltered urine was held in the direct sunlight and set in motion by twirling, a curious phenomenon was noted. Each crystal, notwithstanding its microscopic smallness, caught the light, flashing minutely as it appeared and disappeared. And thus the impression of finely pulverized glass was gained. Under the lower powers of the microscope, the identity of these crystals could not be distinguished; but when the higher objectives were used, the following picture was seen:

Some of the crystals were octahedral (so-called envelope forms) and were often large and perfectly constructed. While such first caught my eye and identified the nature of the sediment, a close inspection showed the presence of other forms. There were many small crystals, some perfectly designed, but many others exhibiting evidences of imperfect crystallization. Here and there an axis was greatly lengthened, and many an acicular structure observed. Very seldom was a true raphus seen: if such had been formed, it had most likely been crushed by the powerful muscular walls of the ureter. Irregular forms were frequently noted; but invariably were the angles acute, and the points and the edges apparently *sharp*.

Two questions at once arose: (1) May all the symptoms be explained by the presence of these crystals (their continued presence in the freshly voided urine)? (2) If so, upon what shall we base our treatment?

Apparently the first query could be answered in the affirmative, and the case observed pending the results of the second. At once, there presented themselves two problems not so easily solved: (1) Was or was there not an actual increase in the total amount of oxalic acid excreted in the

twenty-four hours; and what bearing if any did this have upon the treatment? (2) Where and how did the precipitation of the insoluble crystals occur; and what bearing, if any did this have upon the treatment?

The Baldwin method showed that the increase in oxalic acid was absolute. We could at least assume that while this fact was not the only one of importance in the disposition of the case, it was perfectly evident that we would more likely be able to decrease the precipitation of the crystals if we could but decrease the substance which went into their makeup. This phase of the situation could be realized if we excluded food containing oxalic acid and (to a less extent) all carbohydrates and could prevent or check intestinal fermentation of the carbohydrates.

We had good reason to believe that precipitation took place in the ducts of the uriniferous tubules or the renal pelvis. Otherwise we could scarcely be able to explain the symptoms in cases like Nos. I and II. How was this precipitation accomplished? This was not entirely clear; and here comes a gap in our treatment. But in my former communication, I proposed that the reaction of the urine may have much to do with this precipitation. I am scarcely prepared to lay as much stress upon this as formerly, but believe that a neutral or alkaline urine may favor the deposit and that this may also occur in a highly acid urine. However, acids are doubtless usually indicated. A sterile but cold flexible catheter was passed daily for a week; and this seemed to aid in the treatment, exerting a favorable influence upon the mind of the boy. The reader may suggest that it accomplished all that was realized. At any rate the relief was prompt.

In this connection I desire also to record a case of nocturnal enuresis suddenly appearing at the age of four and which prompted the parents to seek advice. In this case there was also some dribbling during the day. The urine, though fresh, contained many whetstones of uric acid. Did these cause the irritation? The trouble was promptly relieved by cathartics and diuretics.

Case IV.—S. T., a boy of four with a history of bladder irritation and pyuria following typhoid fever (?). The urine had been submitted to several pathologists, all of whom had reported pus and oxalates. One of these men had read my former communication upon the subject of painful oxaluria, and suggested this diagnosis. However, I pointed out in that article that uncomplicated painful oxaluria was rarely associated with pus and microorganisms. The irritation is a "moving one," a large surface is damaged and germs do not obtain a foothold so easily as in the rough and unwashed caverns of the calculus.

What, indeed, were these urinary findings? I discovered pus cells in large numbers and microorganisms but no blood cells or hemoglobin. True, I found crystals resembling very much the oxalate envelopes. But the number was not large even in centrifugalized specimens, and they were of almost unvarying size and shape. A closer study revealed forms not octahedral but prismatic with square facet presenting in the foreground and oblique terminal surfaces. Microchemical tests with acetic acid showed that these crystals were easily dissolved, thus finally excluding calcium oxalate crystals. This urine was highly alkaline and was undergoing ammoniacal fermentation. These crystals were those of ammonio-magnesium phosphate. The pathologists had failed to identify the sediment by virtue of the fact that the typical coffin-lids were absent. A later examination revealed large numbers of eroded or sledge forms of these crystals.

*Modern Theories Concerning Oxalate Metabolism.*—I have but little to add to those statements which I made several months ago, and perhaps some to retract. Oxaluria may result from ingestion; but a persistent oxaluria does not arise from any such cause. An oxaluria to cause symptoms doubtless must always be persistent. I will concede that a question exists in regard to this, however. Beyond a doubt persistent oxaluria (*true oxaluria*, where estimation of the oxalic acid shows an increase) is associated with a perverted carbohydrate metabolism, but attempts to make this clear have been unsuccessful thus far. In oxaluria dolorosa (we must distinguish *clinical oxaluria*, where the urine when voided contains oxalate crystals even though the total urinary oxalic acid may not be increased) there are two other factors:

1. Precipitation of the insoluble oxalates in the urinary passages. Fürbringer has shown that the urine may contain a large amount of oxalic acid and yet no precipitation of the crystals occur. But as I have previously declared, it is useless to attempt to treat a *clinical oxaluria*, simply by reducing the oxalates though this may, of course, aid. We must prevent the formation of the crystals in the urinary passages. Once formed, these crystals probably cannot be redissolved.

2. *Persistent* precipitation of the insoluble oxalates in the urinary passages. The injury must be continued. Based upon my observations in these cases, I am tempted to go a bit further—that this crystallization in oxaluria dolorosa is rarely perfect but minute acicular and irregular forms are frequently seen.

For other points in this connection, I shall refer the reader to my former communication, especially with reference to other examples in which mechanical injury by the oxalate crystals, notably the raphides of certain plants, as the dumb cane, occurs.

*The Oxalurias Defined and Classified.*—1. *True Oxaluria.*—I have pointed out the fact that the oxalic acid of the urine may be increased and yet no precipitation of crystals occur before the urine is voided. The term is a technical one and has nothing to do with my subject except, perhaps, so far as the treatment is concerned.

2. *Clinical Oxaluria.*—But in another class comes clinical oxaluria. Here the oxalic output daily may or may not be increased, but the distinctive feature is the fact that insoluble calcium oxalate crystals are precipitated somewhere in the urinary tract, and may be found in the fresh urine. We have several forms of clinical oxaluria, among which may be mentioned:

(*a*)—*Simple Clinical Oxaluria.*—Condition usually temporary. Crystals may or may not be well formed. Crystals must be found in freshly voided urine.

(*b*)—*Painful Oxaluria.*—It is scarcely necessary to define or describe this condition further than I have done already or shall do before the end of this article.

3. *Deposit of Oxalate Crystals in Urinal.*—This, of course, is not an oxaluria. When the diacid-sodium phosphate which normally holds the oxalates in solution is neutralized by fermentation the deposit occurs.*

*The Uranalysis.*—Briefly a few points must always be kept in mind:

1. Clinical oxaluria cannot be diagnosticated unless the sediment proves to be crystalline calcium oxalate. The crystals may be detected but not differentiated by holding the specimen in the direct sunlight. The crystals can rarely or never be differentiated by the lower microscopic objectives. Even under the higher powers they may be almost exactly counterfeited by the triple phosphates. If in doubt apply the microchemical test.

2. Clinical oxaluria cannot be diagnosticated by the examination of any but a freshly voided sample of urine. Normally, calcium oxalate is held in solution by the diacid-sodium phosphate; and no crystals are noted in such a urine unless the ingestion has been great indeed. But when the urine ferments, the phosphate is neutralized and the oxalate is precipitated.

*Entirely foreign to our subject, is the term, *vicarious oxaluria*, a condition noted in diabetes where the fluctuations in the amount of oxalic acid appear to be inversely proportional to the amount of glucose.

3. True oxaluria is detected by chemical estimation of the total oxalic acid each twenty-four hours. Clinical oxaluria is diagnosticated by microscopical examination of the freshly voided urine. The discrimination is an important one and is not made in texts.

4. A clinical oxaluria to be painful must perhaps be persistent. Several examinations should be made to determine this point. It is possible that an oxaluria of a very short duration may cause symptoms in some individuals. A painful oxaluria is quite likely to become aggravated in the summer when a vegetable diet adds more oxalates to the already embarrassed metabolism.

5. To prove painful oxaluria it is necessary to rule out calculus by a proper *x*-ray examination, and to rule out any other condition which may be giving rise to the symptoms. We must not be too anxious to diagnosticate oxaluric dolorosa; but upon the other hand, we must not be too free with the knife when it is evident that such is the condition. An *x*-ray picture can always be obtained from an oxalate calculus. Webster[4] has ventured that the name "oxaluria" can hardly be dignified as a definite pathological entity. Perhaps not, but then again perhaps. Now and then we have cut down upon a stone which was not there when a brief study of the case would have led us to have hesitated.

6. To prove painful oxaluria it is almost necessary to prove some relation between the amount of sediment and the severity of the symptoms. Invariably it happens that immediately subsequent to the attack tremendous amounts of this may be found in the urine.

7. Blood or hemoglobin likewise may frequently accompany the attack. The red cells, as I pointed out in a former communication, are likely to be well preserved. The blood is not laky. Upon the other hand the presence of pus and of microorganisms, except in the very chronic cases, should lead us to doubt the diagnosis of oxaluria dolorosa. Examine catheterized specimens, search for the gonococcus and inoculate guinea pigs for evidences of tuberculosis.

8. In oxaluria dolorosa the normal acidity of the urine is usually disturbed, though such an item is of but little differential value.

9. In oxaluria dolorosa the crystallization is quite likely to be minute, imperfect, and acicular. Invariably a few perfect crystals are present and these aid in the identification of the sediment.

10. As a circumstance of exceedingly great differential value in the consideration of possible calculus is the fact that the pain in clinical oxaluria is usually bilateral; *i.e.* it is quite as intense upon one side as the other.

*Treatment.*—I have but little to add to those principles which I laid down one year ago. The object is not only to reduce the amount of food containing oxalates and to correct any processes which may be changing carbohydrates to oxalic acid in the gastrointestinal tract, but to prevent if possible the precipitation of oxalates in the urinary passages.

As regards foods containing oxalic acid it may be said that oxaluria does not depend upon this cause alone, but reduction of these may aid somewhat in the treatment. To correct matters in the gastrointestinal tract, I can recommend nothing more efficacious than a routine course of laxatives and water drinking. I regard sodium phosphate very highly in this connection because it may also supply in part the diacid salt which normally holds the calcium oxalate in solution in the urine.

But how are we to prevent the precipitation of the insoluble oxalates in the urinary passages? for once precipitated, they can scarcely be redissolved. It is possible that correcting the acidity (if neutral or alkaline, giving diacid-sodium phosphate: if highly acid, reducing this somewhat by alkalies) may aid in part. In some cases this appears to be a method of worth; but I am by no means as enthusiastic concerning its merits as I was several months ago. The treatment of oxaluria dolorosa has by no means been perfected.

The diet list which I am about to recommend is based in large part upon experience in these cases rather than upon theory, and must be modified somewhat to suit the patient in mind. It should be rigidly carried out for a couple of weeks, possibly longer, at least until it is evident that it will give no benefit. I have seen fit to prescribe water according to directions similar to those given below that I may be assured whether or not enough of this is really being taken. The cautions concerning drinking at night are noted, and apply particularly to cases of nocturnal enuresis apparently due to the passage of oxalate crystals through the urinary tract. Carbohydrates should be decreased, as excessive amounts may favor a fermentation resulting in formation of oxalic acid.

*May Eat in Desired Amounts.*—Any kind of meat, but this should not be fried. Oysters, fish (not fried), beef, mutton, chicken, game, salads, peas, eggs, and milk. Milk, skimmed milk, boiled milk, and buttermilk may be taken in large amounts. It may be well at the onset to use a milk diet as a basis. Water should be taken in tremendous amounts. If the patient suffers from nocturnal enuresis, water should be avoided in the evening. Lithia tablets may be added to the water. It may be prescribed as follows: Drink a cup of warm (almost hot) water before breakfast, plenty of water during this meal and a cup of cold water after breakfast. Drink several glasses of water during the forenoon. Drink a glass of water before dinner, plenty of water during the meal, and a glass of warm water after the meal. Drink an occasional glass of water during the early afternoon.

*May Eat in Moderate Amounts.*—Good bread may be eaten in moderate amounts. The same applies to butter, cheese, hominy, rice, toast, oatmeal, battercakes, and crackers. Beans and potatoes should be eaten in very small amounts, or avoided if possible. Soups may be taken in large amounts (except at supper time in nocturnal enuresis). When preparing soups avoid vegetables named below. Pies, cakes, and fried dishes should be almost avoided.

*Avoid Entirely.*—Candies, syrups, ice-cream, tomatoes, pieplant, oranges, cabbage, cocoa, tea, pepper, grapes, sorrel, carrots, string-beans, garlic, asparagus, celery, spinach, plums, and strawberries. Avoid vinegar. Eat but very small amounts of apples, pears, peaches, and melons.

*Conclusions.*—I shall not detail a list of conclusions inasmuch as but one thought is to be emphasized; viz. the year of 1912 added but little to our knowledge of the oxalurias; but this does not excuse the surgeon from overlooking the fact that when the *x*-ray fails to reveal a stone, and when the symptoms and signs vary in intensity directly with fluctuations in the number of crystals of calcium oxalate appearing in the freshly voided urine, such features deserve very careful attention. As a path-

ological entity, painful oxaluria (*oxaluria dolorosa*) bids strongly for a place in our texts and for our sober consideration. The condition may not be a common one after all, but a study of the question has convinced me that it is not an impossible one. Time will solve the question. But in the meanwhile, why this reluctance? Is it beneath our dignity to investigate, merely because the name "oxaluria" has not yet been dignified?

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109 E. COURT STREET.

## THE PRESENT STATUS OF THE TUBERCULIN TESTS.*

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My first recollection of the use of tuberculin for the diagnosis of tuberculosis, refers to the time when I was an interne in Bellevue Hospital about seventeen years ago. It was then that we injected, subcutaneously, five to fifteen milligrams of the proteid glycerin extract of tubercle bacilli, or Koch's old tuberculin. This was done in two or three cases, wherein the diagnosis of tuberculosis was suspected, but could not be settled by other means. A few days after the injection there was no room for doubt—they certainly had pulmonary tuberculosis, and in a very active form. Our experience was not peculiar, many others observed these severe reactions, and such large initial dosage was quickly abandoned.

At the Adirondack Cottage Sanatorium, for several years, all patients without tubercle bacilli in their sputum, were required to undergo the subcutaneous tuberculin test. So far as I know, this may still be the routine practice in that institution. The method which I understand they employ is to begin with half a milligram, increasing the dose gradually, in subsequent injections, to one, two or three milligrams until a positive reaction is obtained, or until 10 milligrams or more have been given at one dose. This is the method now employed by those who use the subcutaneous test. The maximum dose varies in different hands, from three to ten or twelve milligrams. Four or five days should elapse between injections.

So capable an observer as Dr. Lawrason Brown, after a wide experience, said that he had come to believe that a failure to react to even 10 milligrams of old tuberculin, given subcutaneously, does not exclude clinical tuberculosis. He further stated that he had observed many cases in which the results of tuberculin reaction added only confusion to the clinical data. It has been said, by some observers, that many patients who have experienced rather severe reactions seem to feel generally better after the reaction subsides. I am inclined to believe that this postreactional improvement in the patient's subjective symptoms is really only an unconscious comparison with the great discomfort experienced during reaction. I think it is rather broadly agreed that, in adults and perhaps in children beyond the age of five years, a positive reaction is of no practical clinical value, and yet this is the result which is liable to cause havoc. It has been clearly demonstrated that it is only necessary for an animal or patient to have had, at some time, a bacillary infection, with or without any resulting lesion, for tuberculin to cause a positive reaction, however administered. It has been said that a failure of the subcutaneous injection of tuberculin to cause a reaction in a tuberculous individual is due to either an absence of receptors at the site of the lesion or the presence of antibodies in the blood. This opinion sounds reasonable, when applied to those far advanced cases, with extreme general depletion, who fail to react; but, I do not see how it can explain the occasional failures to react in some moderately advanced cases, where the diagnosis is otherwise provable, and the patient's general nutrition and vitality are good.

It was in May and June, 1907, respectively, that Wolff-Eisner and Calmette called attention to the reactions obtained by dropping a half or one per cent. solution of tuberculin into the eye. This conjunctival test, called the Calmette test (apparently because Calmette seems to have been a better talker than Wolff-Eisner, who first announced the reaction) has in recent years been abandoned by most observers, in favor of the von Pirquet skin test. The Moro test, which is obtained by frictional application of a tuberculin ointment to the skin, is not very generally employed, because it is less accurate and slower in reaction.

Dr. Rathbun and Dr. White have supplied me with a statement regarding some thousand or eleven hundred cases in which we applied the Calmette and von Pirquet tests in the Otisville Sanatorium, upon which the following is based. Our experience with the Calmette test covered about six hundred or seven hundred cases. No eye tests were made on anyone presenting, on careful inspection, anything abnormal in either eye. A drop of a half per cent. suspension of old tuberculin was instilled into the eye with an eye dropper. The eye was inspected each day for the reaction for the next three days. Reactions were graded *slight, moderate,* or *severe.* If no reaction or doubtful reaction occurred, a one per cent. solution was put into the other eye one week later and this eye was inspected daily for three days. There were no untoward results from this test in our experience. We had a few reactions that were rather more severe than we liked to see, but they cleared up without any damage to the eye. In one case the inflammatory reaction lasted ten days or two weeks. Usually the reaction lasted only five or six days. No constitutional reactions were noted in our experience, although they have been reported in the literature.

As to the interpretation of our results with the Calmette test, I would say that in the definite and active cases with positive sputum the reaction was constantly positive, except in a few very advanced cases. In the fairly definite cases, where the sputum was negative, the reaction was almost uniformly positive. In the group of cases where the diagnosis was considered very doubtful, there was no uniformity in the Calmette reactions. However, in the latter group, when the reaction was negative, we felt that it was confirmatory evidence, of some value, that the condition was not tuberculous. Regarding positive reactions, we could not see that

*Read before the Association of Physicians Attending Tuberculosis Clinics, New York City, April 9, 1913.

they were of any clinical value, from either a diagnostic or prognostic point of view.

With the von Pirquet test our experience covered about four hundred cases. Our method was as follows: The forearm was cleaned with alcohol. Three drops of tuberculin were applied to the arm about one and one-half inches apart. One drop was crude, one was 25 per cent., and one 1 per cent. With a small scarifier introduced through the drop, the epidermis was scraped away, much as in the method of vaccination. A control was made nearby with sterile salt solution. The extent of the reaction was determined by the size of the inflammatory areola that developed.

I should mention, parenthetically, that crude tuberculin put into the peritoneal cavity of lower animals has produced lesions similar to those produced by the injection of live tubercle bacilli into the peritoneal cavity. Also that von Pirquet has seen crude tuberculin, when used in his skin test, produce a tubercle-like lesion at the point of application. We never observed any such lesions in our work at Otisville.

Our results made us feel that the von Pirquet is more sensitive than the Calmette test. It certainly gave a higher percentage of positive reactions. Thus, it would seem that a case negative to von Pirquet is more likely to be nontuberculous than one which was only negative to Calmette. I notice that, in his report, which I recently asked for, Dr. White uses the expression "confirmatory value" in connection with the negative results in the von Pirquet test. This shows that he still places the bulk, if not all, of his reliance in other methods of diagnosis. I should add that we observed no constitutional reactions to the von Pirquet tests.

We have had very little experience with the tuberculin reactions in children, where it is said to be of most value. Some have said that, under five years of age, a positive reaction means active tuberculosis.

Last week, at my request, Dr. J. J. Shea, House Physician of the Third Medical Division of Bellevue Hospital, applied the von Pirquet test to twenty-four adult patients in the medical wards. All of these patients were free from any clinical suspicion of tuberculosis in the personal or family history. Among these cases were instances of almost all the diseases commonly found in a general medical ward, except tuberculosis. Several had nephritis, several myocarditis, two had syphilis, two gout, several rheumatism, two had gastric ulcer, peripheral neuritis, chorea, bronchopneumonia, septic endocarditis, intermittent claudication, and chronic endocarditis made up the remainder. Although none of these twenty-four patients had ever been suspected of having tuberculosis in any form, twenty-two of them gave a positive reaction to von Pirquet, and one of the other two became faintly positive after seventy-two hours. Thus leaving one certainly negative result in twenty-four people clinically nontuberculous.

For comparison with these, I have had Dr. Rathbun try the von Pirquet and Moro tests on thirty cases in the Otisville Sanatorium. Ten patients, with negative sputum, in whom clinical data and physical signs are sufficient to justify a diagnosis of pulmonary tuberculosis, were subjected to the von Pirquet test. At the end of forty-eight hours six of these showed a positive reaction and four were negative. At the end of seventy-two hours three of the four negative cases had developed a positive reaction. Thus the ultimate result in these ten cases of clinical pulmonary tuberculosis, of slight extent, was 90 per cent. positive to the von Pirquet test, again 96 per cent. positive in the clinically nontuberculous in Bellevue Hospital. In both groups they were bacteriologically negative. I realize that individual difference, in two seperate men reading the reactions in the two instances, might account for part of this strange result. In ten cases, clinically similar to the ten already referred to, the Moro test—fifty per cent. tuberculin ointment in a lanolin base—was applied. In these ten patients, clinically tuberculous, only two gave a positive reaction to the Moro test. In five advanced cases of pulmonary tuberculosis, five positive reactions to the von Pirquet test were obtained. In five advanced cases, in which the Moro test was used, one was positive, one faintly positive, one showed a few red spots, one was doubtful, and the other one was negative.

Barring children under five years of age, with whom I have had little experience so far as the various tuberculin tests are concerned, I will attempt to summarize, or state as briefly as I can, what is, in my opinion, the present status of these tuberculin tests in diagnosis. The Moro test, from a clinical point of view, is so unreliable that it is a waste of time to apply it. The subcutaneous injection of tuberculin is undoubtedly the most reliable from a scientific point of view. Clinically it is not absolutely reliable, even when negative. Severe reactions in a considerable number of cases are unavoidable. These reactions may, and do in some cases, cause irretrievable harm; therefore it is not justifiable to employ this method as a diagnostic routine. The Calmette test is probably harmless when applied with unfailing care in the choice of cases; but since it is capable of doing injury to the eye, and since it seems to present no advantage over the von Pirquet test, it should not be employed as a diagnostic routine. The von Pirquet test is undoubtedly harmless and is the only one in which I can see no objection to its use as a dignostic routine, although it is of very little practical value beyond the age of five years. In some rare cases, where the diagnosis cannot be reached by any other means and yet, for the patient's interest, it is imperative to either affirm or disprove the presence of tuberculosis, it is justifiable to apply, cautiously, the subcutaneous injection of tuberculin for diagnosis. This applies especially to disease of joints, where the focal reaction can be more easily observed.

In employing any of these reactions I feel that we should have a broad enough judgment to realize that it is not so much our obligation to determine whether or not a person has tuberculosis, but whether or not his tuberculosis has become a *disease* clinically. When we consider what a large percentage of the human race are infected with the tubercle bacillus at some time, the multiplicity of hypersensitive methods at our disposal for detecting it, and the great eagerness of many physicians to discover it, the wonder is that anyone escapes the diagnosis.

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**Pericarditis in Infancy.**—P. Nobécourt believes that pericarditis is common in childhood. It should be looked for in cases of rheumatism, chorea, scarlet fever, and pneumonia. The pericarditis may be fibrinous, serofibrinous, hemorrhagic, or purulent.—*Journal de Médecine de Paris.*

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## THE BILE IN THE LIGHT OF NEWER TEACHINGS.

THE humoral pathology of the ancients accorded to the bile an important place in the vital economy. The words "melancholy," "atrabiliar," "choleric" are surviving relics of primitive physiological teachings. There came a time, however, when coincident with the development of modern anatomy considerable doubt was cast upon the value of the liver and its important secretion in the workings of the body. But the development of experimental physiology during the past half century has shown that the bile has many important functions. The real nature of some of these is still veiled in obscurity.

Without describing the properties which are familiar to every student of elementary physiology, it may suffice to point out that the chapter concerning the functional significance of the bile is not a closed one. There have been many obscure problems wrapped up in its multiple capacity as an excretion and as an important digestive fluid. Within recent years these problems have been attacked by many investigators, but no one has contributed more to their solution than has H. Roger of Paris, who presents a discourse on the subject in the *Universal Medical Record,* April, 1913. He states at the outset that modern workers have shown that although the bile does not possess any direct power as an enzyme, nevertheless, it has a "zymosthenic" influence, inasmuch as it increases the activity of ferments derived from other sources. It enhances the starch-splitting function of the pancreatic juice and activates the lactase of the intestinal secretion. It also exerts a tractor influence, serving to draw forth certain ferments contained in the cells of the intestinal epithelium. The author, in conjunction with H. Chabanier, has shown that the bile is particularly instrumental in evoking invertin from the intestinal cells.

The function of the bile with reference to the absorption and digestion of fats is alluded to. Bile increases the lipolytic power of the pancreatic juice. It favors saponification. It aids in the absorption of fats. These facts have all been clearly established and have been recognized by physiologists for a long time. But according to recent experiments performed by Roger the bile has other important functions. It plays a part in the digestion of proteins. These tend to form in an acid medium certain insoluble compounds with bile. The precipitates thus formed redissolve in an excess of bile. The actual purpose of this precipitation and redissolving is as yet obscure.

The failure of bile to reach the small intestine, whether caused by an obstruction in the biliary passages or by an actual cessation of the secretion of bile, gives rise to a series of phenomena that have been recognized for a long time. "Acholia" was the name first applied more than two decades ago by Cheadle to a condition in which the stools are colorless, contain an excess of fat, and are markedly offensive. The absence of bile from these stools naturally gave rise to the inference that the bile performs the important function of preventing intestinal putrefaction. But Roger now shows that bile is not an antiseptic. When added to broth cultures it does not prevent the proliferation of bacteria. How then can one explain this contradiction, which Roger designates "the paradox of intestinal acholia?" This observer has shown that although bile has no antiseptic power, it nevertheless checks putrefaction by "selectively favoring the development of the less active organisms and, very specially, by modifying the functional activities of such bacteria as do flourish." One of the microorganisms whose propagation is favored by the bile is the colon bacillus, while the growth of the anaërobic agents of putrefaction is inhibited. In *La Presse Médicale,* October 2, 1912, Roger has shown that bile exercises also an antitoxic function by neutralizing certain poisons arising from intestinal putrefaction. The symptoms of "biliousness" resulting from a defective secretion of bile are thus adequately explained.

Another important function of bile hitherto unrecognized is its action with reference to mucus. Mucin is coagulated by a ferment—mucinase—contained in the cells lining the intestine. Bile inhibits the action of this ferment, with the result that the mucus contained in the upper part of the intestine is present in a fluid state. When mucus coagulates it does so in the lower part of the intestine where there is the least amount of bile. In fact, Roger attributes the formation of the pseudomembranes in mucomembranous enteritis partly to biliary insufficiency, the other factors being an excess of mucus and an excess of mucinase. From these facts there is drawn a deduction of therapeutic importance, namely, that the administration of ox-gall is indicated in these cases. Apart from its effect in preventing the formation of the pseudomembranes, the bile would stimulate the function of the liver and the peristaltic action of the intestinal wall.

There can be no doubt that Roger has made a material contribution to both physiology and clinical medicine, by emphasizing the multiple rôle played by bile with reference to the digestion of starch, sugar, protein, and fat; with reference to its antiputrefactive and antitoxic functions; and with reference to certain properties, hitherto unsuspected, in controlling the physical condition of the intestinal mucus. The bile thus provides an illustration of the wise economy of nature in imparting many different functions to one digestive secretion.

## DRUG STANDARDIZATION.

Sufficient attention has not been paid in the past to the very important subject of drug standardization. It is obvious that unless measures are taken to prevent the adulteration and sophistication of drugs their therapeutic and physiological value will be very considerably impaired. Indeed, there are many points which enter into the question, which can be settled in a satisfactory manner only by the establishment of a uniform system of drug standardization. A paper dealing with the subject was read at the thirteenth annual meeting of the American Therapeutic Society by Dr. F. A. Stewart with the collaboration of Drs. A. Parker Hitchens, W. F. Elgin, Charles E. Vanderkleed, and P. C. Pittenger (*Monthly Cyclopedia and Medical Bulletin*, January, February, and March, 1913). Up to the time when the pure food and drugs act of June 30, 1906, was passed, conformance with the standards of the United States Pharmacopeia on the part of the manufacturers was purely voluntary. Since that time it has become compulsory and manufacturers recognize its authority. But as Stewart points out, there is another class of manufacturers dealing with materia medica products, the retail druggists, who are interested in the question of standardization as applied to so-called galenical preparations, and for a time many of these opposed the reform. However, their objections were finally overcome, and standardization was extended more generally to galenical preparations. The results proved so satisfactory that the convention of 1900 resolved that the committee of revision "append assay processes to as many of the patent drugs and preparations made therefrom as it may be found possible, providing that the processes of assay are reasonably simple, both as to methods and apparatus required, and yield fairly uniform results in different hands." This led to the introduction in the present Pharmacopeia of assays for twenty more drugs and their thirty-seven galenical preparations. There are several potent and important drugs which do not admit of standardization by chemical assay and are not included in the list. Among these are digitalis, ergot, cannabis, and strophanthus. During the past two decades physiological or pharmacodynamic methods have been sufficiently perfected to warrant the introduction of more of them into the Pharmacopeia now undergoing revision. There are very wide differences in the amounts of active principles in vegetable drugs, such as digitalis. The tinctures of strophanthus on the market, according to Edmunds and Hale, may vary most widely in strength. As said before, the chemical assay and standardization of some of the most important drugs is impracticable owing to their peculiar constitution. Digitalis is one and ergot is another. Methods of physiological standardization have therefore been adopted for insuring the activity and to a certain extent the uniformity of their preparations. Stewart sums up in favor of drug standardization as follows: "Drug standardization in its large and comprehensive meaning consists in fixing a nomenclature for medicinal drugs, chemicals, and pharmaceutical preparations; in providing methods for insuring uniformity in composition, in physiological action, and therapeutic effect; in adjusting finished products to fixed standards and in devising means for keeping them there for a sufficient length of time to permit their proper application as therapeutic agents; in reducing this knowledge to law and embodying it in system, that we may have a science of materia medica; in embodying this knowledge in text books and teaching it to the medical and pharmaceutical professions, so that it may be used by physicians and pharmacists in the practice of their respective arts. Therefore the importance of drug standardization cannot be overestimated."

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## PRACTICAL EUGENICS.

Eugenics is scarcely a science, but it is a real point of view. The object of the eugenists is to counteract the degenerating tendency of civilization, but their problem is the securing of an adequate supply of normal human capacity. Their scheme deals with both the positive and the negative, that is, they would encourage reproduction in the specially fit, and discourage it in the unfit. This subject has taken up much space in the public press and has had many interpretations placed upon it. As with all subjects which take hold on the popular mind, it has developed a number of enthusiasts who have made attempts to force premature, extreme views, and cataclysmic suggestions upon the public. The majority of eugenists believe in the control of the mating of individuals, the production of the perfectly normal offspring, and the surrounding of that offspring with the best obtainable environment.

There have been some interesting facts regarding birthrate brought out recently, which may prove of interest in this connection. In the *Practitioner* for April, 1913, Dr. G. T. Young quotes from a paper by Mr. Sidney Webb on the birth-rate in Great Britain in which the author formulated the following conclusions: (1) The decline in birth-rate is greatest in those sections of the population that give proof of thrift and foresight; (2) the decline is principally, if not wholly, due to deliberate restriction in the marriage state; (3) this state of affairs is not due to any alteration of the ages of the population, nor to the number or proportion of the married women, nor to the depopulation of the country districts and consequent centralization in the towns; (4) it is equally definite all over the country, and, in fact, every civilized country with the exception of Russia and Japan, shows the same conditions as England; (5) the condition does not prevail in Jewish and Irish Roman Catholic communities. With two-thirds of the married people, and these the best classes of society, regulating their families, and with no restriction on the increase of the more dependent and ignorant classes, the imagination does not have to make a very great leap to foresee a national problem of huge proportions. Webb thinks that the cure for the condition will be found in the encouragement of "the thrifty prudent parents removing the check

which they put upon their natural instincts." There are here many facts to be digested. The chance is also present for the eugenists to demonstrate that their ideas are practical and not wholly theoretical.

### Pancreogenic Diarrhea.

In 1820 Kuntzmann reported the occurrence of fatty stools in a case of induration of the pancreas. Thirteen years later Richard Bright himself recorded the occurrence of fatty and oily stools which appeared to characterize affections of the pancreas. From then onward the legend increased to the generalized statement that with organic disease of the pancreas the ingested fats pass through the bowel but slightly changed or not at all. This fact became demonstrable at will. Remove the pancreas of a dog and the animal will pass fatty matter. In 1894 Ury and Alexander reported that this fat as it occurs in the stools will solidify outside the body at ordinary temperatures. At a recent session of the Silesian Society for Native Culture, Minkowski made an important announcement (*Berliner klinische Wochenschrift*, April 21). In researches conducted with Abelmann he confirmed the existence of fatty stools in pancreatic defect. But whereas these stools have usually been attributed to absence of lipolytic activity, the author was able to show that the defect was not one of lipolysis, but one of emulsification. The administration of a pancreatic preparation was sufficient to emulsify a considerable portion of the dietetic fat and diminish the fat diarrhea.

### Akin to Fee-Splitting.

Now that the custom of financial dichotomy in medical practice has been acknowledged to be an evil and has been in great measure, though not entirely abolished, it is time to call attention to another "corrupt practice" of like nature. An esteemed correspondent recently enclosed a letter received by him from an instrument maker, a copy of which follows, names being omitted:

New York, April 30, 1913.

Dr. A..... B....., New York,

Dear Doctor:

The business sent by you this month is as follows:

X..... Y....., child's truss.. $5.00

Enclosed please find my check for $1.25. Trusting to be favored with your further patronage, I remain

Very truly yours,

It seems hardly necessary to comment on this letter. If it is reprehensible for the family physician to accept a commission from the surgeon or specialist to whom he has sent a patient, how much more so is it to take pay from a tradesman—druggist or instrument maker—for business thrown in the latter's way.

## News of the Week.

**College of Physicians and Surgeons.**—At the annual commencement exercises of Columbia University, New York, held on June 4, the degree of Doctor of Medicine was conferred by President Butler on one hundred graduates of the College of Physicians and Surgeons. At the same time the honorary degree of Doctor of Laws was conferred by the University on Col. William Crawford Gorgas, assistant surgeon-general of the United States Army and chief sanitary officer of the Isthmian Canal Commission, and on Dr. Alexis Carrel, associate in the Rockefeller Institute for Medical Research and winner of the Nobel Prize for 1912.

**New York University.**—Seventy-five graduates of the University and Bellevue Hospital Medical College received their diplomas as doctors of medicine at the annual exercises held at the University on June 4. The announcement of the award of prizes in the college was made by Dean Le Fevre, as follows: The Valentine Mott bronze medal to Noel H. Campbell of Brooklyn; the John A. Fordyce prize in dermatology to Myron Louis Morris of New York; the Glover C. Arnold prize in surgery in equal parts to Thomas Webster Edgar and Irving Gray, both of New York.

**Medical Schools Graduate.**—At the sixth annual exercises of the Starling-Ohio Medical College of Columbus, Ohio, fifty-three graduates in medicine received degrees. The address to the graduates was delivered by Dr. J. A. Witherspoon, president of the American Medical Association.

The degree of doctor of medicine was also conferred upon twenty-one graduates of the Medical Department of the University of Alabama at the annual exercises in Mobile on May 22. Dean Bondurant announced the award of the Bush Prize to Daniel B. Faust of Clio, and of the Rhett Goode Prize to Frederick F. P. Boswell of Mobile.

**Marquette University Medical School.**—The trustees announce the following additions to the Faculty of the Marquette University School: Professor of chemistry, Dr. Chester J. Farmer of Harvard University; professor of physiology, Dr. J. Vander Erve, for the past three years in charge of the same department of the University of Alabama; professor of biology, Dr. D. V. Sullivan of Western Reserve University. The school will graduate seventy-seven doctors of medicine this year.

**University of Buffalo Medical Alumni.**—The thirty-eighth annual meeting of the Alumni Association of the Medical Department of the University of Buffalo was held in Buffalo on May 27 to 30. The following officers were elected for 1913-14: *President*, Dr. Grover W. Wende, '89, Buffalo; *Vice-Presidents*, Dr. George E. Brewer, '84, New York; Dr. George W. Goler, '89, Rochester; Dr. Frank W. McGuire, '94, Buffalo; Dr. Cynthia W. Koser, '06, Williamsport, Pa., and Dr. Wm. Irving Thornton, '99, Buffalo; *Secretary*, Dr. Julius Richter, '04, Buffalo; *Treasurer*, Dr. Wm. F. Jacobs, '08, Buffalo; *Trustee*, Dr. Henry C. Buswell, '88, Buffalo; *Executive Committee*, Dr. Lesser Kaufman, '04; Dr. Harry Mead, '91, and Dr. Edith R. Hatch, '06.

**Civil Service Examinations.**—The United States Civil Service Commission announces an open competitive examination for both men and women, on July 2, 1913, for the purpose of securing eligibles to fill a vacancy in the position of medical interne in the Government Hospital for the Insane, Washington, at $900 a year and maintenance. As considerable difficulty has been experienced in filling vacancies in the positions of medical interne in the hospital service during the past several years, owing to the limited number of eligibles available, qualified persons are urged to enter this examination. The positions are tenable for one year and applicants must be unmarried, and, of course, graduates of a reputable medical college. Persons desiring to take the examination should

apply at once to the United States Civil Service Commission, Washington, D. C., for Form 1312.

The Commission also announces that the civil service examination for dental interne has been postponed from June 4 to June 18, 1913, because only one application for the examination had been filed by the earlier date. Qualified persons are therefore urged to enter this examination also, which is held for the purpose of securing eligibles from which to fill a vacancy in the position of dental interne in the Government Hospital for the Insane, Washington, at a salary of $600 per annum and maintenance.

**Smallpox in Philadelphia.**—A new outbreak of smallpox in Philadelphia on June 1 caused the vaccination of several hundred persons within the area of one square block. Five cases of smallpox were found on one small street, all the patients being colored.

**Report on "Cures."**—The United States Senate on June 6 unanimously adopted the following resolution which was introduced by Senator Bristow of Kansas: *"Resolved,* That the Secretary of the Treasury be and he is hereby directed, if not incompatible with the public interest, to transmit to the Senate such reports as have been made by officers of the United States Bureau of the Public Health and such documentary information as he may have upon the so-called tuberculosis cures."

**Vivisection Charges.**—Backed by the Society for the Prevention of Cruelty to Animals, several of the most ardent anti-vivisectionists of Philadelphia have brought charges of cruel and inhumane treatment against the research workers in the medical department of the University of Pennsylvania, and on June 3 Dr. J. E. Sweet, assistant professor of experimental surgery was served with a warrant calling for his appearance in court. At the hearing before a magistrate on June 7 Professor Sweet was held in $400 bail for trial. The complaining witnesses produced a "gibbet of torture" said to be an exact duplicate of apparatus in use in the laboratories during operations upon dogs, and one of the witnesses stated that once a week for the last six months she had crawled through a hole in the fence surrounding the animal house so as to inspect the condition of the dogs there confined.

**City Death Rate.**—The death rate in New York City during the week ending May 7, was 12.85 per thousand, representing a total of 1,323 deaths, as compared with a rate of 12.86 and a total of 1,275 deaths during the corresponding week of last year. There was an increase of fifty-one in the deaths of persons of sixty-five years and over, and the mortality from measles, diphtheria, and whooping-cough was also much increased. There was an increase also in the deaths due to organic heart disease, pulmonary tuberculosis, and kidney disease, while scarlet fever, typhoid fever, and the diarrheal diseases showed decreased mortalities.

**Milk Stations Opened.**—Ten additional stations for the distribution of pasteurized milk during the coming summer were opened by Mr. Nathan Straus on June 2 in New York City. At these stations whole milk, which has been properly pasteurized, is supplied at one cent a glass, while for the babies milk modified according to various formulæ is also supplied.

**Rockefeller Institute.**—The governing boards of the Rockefeller Institute for Medical Research, New York, have, through the generosity of Mr. Rockefeller, been able to provide pensions for the members and associate members of the Institute. The rules adopted permit of the allowance of pensions amounting to three-fourths of the salary to members of the Institute retiring at the age of sixty-five after fifteen years or more of service, and of pensions amounting to one-half to three-quarters of full pay according to length of service to members and associate members retiring at sixty years. There is also a provision for total disability after ten years of service and for widows and orphaned children. Mr. Rockefeller's gift securing the pensions is said to amount to about one-half million of dollars.

**To Enlarge Mount Sinai.**—The trustees of Mount Sinai Hospital have purchased the property numbered 21 and 23 East 99th street, and have thus almost completed their control of the block bounded by Fifth and Madison avenues and by 99th and 100th streets. On this plot the hospital will erect the new buildings which have been planned, including the children's wards and the pathological laboratory.

**American Medico-Psychological Association.**—The sixty-ninth annual meeting was held at the Clifton Hotel, Niagara Falls, Canada, on June 10 to 13, 1913, under the presidency of Dr. James T. Searcy of Tuscaloosa, Ala.

**Public Health Board.**—Under the auspices of the Public Health Committee of the New York Acadamy of Medicine, representatives of nearly one hundred private charitable organizations, met at the academy on June 4 and formed a central committee for the purpose of securing co-operative effort toward the general conservation of the public health in this city. The aim of the conference was shown in the adoption of the following resolution:

*Whereas,* There are in the city about 100 private organizations interested in the various phases of public health work; and

*Whereas,* The existing lack of close co-operation and co-ordination permits duplication and waste of effort as well as distinct loss in effectiveness of the various independent endeavors; therefore be it

*Resolved,* That a central committee on the public health of New York City, composed of representatives of the various organizations, be chosen to act as a clearing house for the exchange of ideas and information, and for the co-ordination of the varied private health activities of the city and to provide for the institution of an annual conference of the organizations.

The Central Committee is made up as follows: John H. Finley, president of City College, *Chairman;* Dr. E. H. Lewinski-Corwin, *Secretary;* Dr. John H. Huddleston, Miss Lillian D. Wald of the Nurses' Settlement; Dr. Edward L. Keyes, Jr., Director of the Society of Moral and Sanitary Prophylaxis; Dr. C. E. A. Winslow of the American Museum of Natural History, Dr. Luther H. Gulick of the Parks and Playgrounds Association, Dr. Livingston Farrand, Homer Folks, and Dr. Charles L. Dana, chairman of the Public Health Committee of the Academy of Medicine. It was announced that Mrs. E. H. Harriman had offered to meet the expenses of carrying on this work.

**Personals.**—Dr. Simon Baruch, professor of hydrotherapy in the College of Physicians and Surgeons, New York, has presented his resignation to the trustees of Columbia University, and this has been accepted.

The resignation of Dr. Augustus B. Wadsworth, assistant professor of bacteriology in the College of Physicians and Surgeons has also been presented and accepted.

Dr. Raymond F. C. Kieb, first assistant physician at Dannemora Prison, New York, has been appointed superintendent of the Matteawan State Hospital, New York.

**Gifts to Charities.**—By the will of the late Rev. Charles M. Morton, formerly of Philadelphia but recently of Atlantic City, the sum of $5,000 each is bequeathed to the Pennsylvania Hospital, the Children's Seashore House at Atlantic City, and the Mercer Memorial Home for Invalids at Atlantic City, and the sum of $3,000 to the Philadelphia Home for Incurables.

By the will of the late Henry B. Palethorp of Philadelphia, the sum of $5,000 each is bequeathed to the Jewish Hospital, the Wills Eye Hospital, the Pennsylvania Hospital, and the Presbyterian Hospital of Philadelphia.

The Middlesex Hospital of London has received from Mr. Arthur James a gift of $100,000, the income of which is to be used in the research work on cancer conducted by the hospital. The gift is made in memory of Mr. William James.

**Illinois State Medical Association.**—At the annual meeting of this society held at Peoria, the following officers were elected: *President-elect,* Dr. A. L. Britton, Athens; *Vice-Presidents,* Dr. Sumner M. Milner, Peoria; and Dr. Domer G. Smith, Elizabeth; *Secretary,* Dr. W. H. Gilmore, Mount Vernon; *Treasurer,* Dr. A. J. Markley, Belvidere. The next meeting will be held at Decatur.

**Connecticut State Medical Society.**—The following officers were elected at the annual convention, held at Hartford on May 22: *President,* Dr. David Chester Brown, Danbury; *Vice-Presidents,* Dr. William S. Hulbert, Winsted, and Dr. Kate C. H. Mead, Middletown; *Secretary,* Dr. M. M. Scarbrough, New Haven; *Treasurer,* Dr. J. H. Townsend, New Haven.

**West Virginia State Medical Association.**—Officers were elected at the annual meeting at Charleston on May 23, as follows: *President,* Dr. Richard E. Venning, Charlestown; *Vice-Presidents,* Dr. C. M. Scott, Bluefield; Dr. Frank B. Murphy, Philippi, and Dr. James E. Cooper, Cameron; *Secretary,* A. P. Butt, Davis; *Treasurer,* Dr. H. G. Nicholson, Charleston.

**New Hampshire Medical Society.**—At the annual meeting of this association held at Concord on May 13, officers for the ensuing year were elected as follows: *President,* Dr. Abram W. Mitchell; *Vice-President,* Dr. H. K. Faulkner, Keene; *Treasurer,* Dr. Charles R. Walker, Concord.

**Montana State Medical Association.**—The annual convention at Great Falls closed on May 15 with the election of the following officers: *President,* Dr. W. P. Mills, Missoula; *Vice-Presidents,* Dr. James H. Irwin, Great Falls; Dr. E. G. Balsam, Billings, and Dr. Sidney A. Cooney, Helena; *Secretary,* Dr. Herbert D. Kistler, Butte; *Treasurer,* Dr. C. C. Wallin, Lewistown.

**Obituary Notes.**—Major Robert Lauder, M.D., surgeon in charge of Fitch's Home for Soldiers at Noroton, Conn., a graduate of Yale University, Medical Department, in 1871, a veteran of the Civil War, and a member of the Connecticut State and Fairfield County Medical Societies, died at his home from disease of the kidneys after a short illness on May 31, aged 72 years.

Dr. Jackson W. Jones of East Chattanooga, Tenn., a graduate of the Louisville Medical College, Ky., in 1886, died at his home on May 21, from cerebral hemorrhage, aged 58 years.

Dr. Alfred Morton Allen of Wilmington, Mass., died at his home on May 22, aged 59 years.

Dr. John Augustine Magee of Lawrence, Mass., a graduate of the University of Vermont, College of Medicine, Burlington, in 1872, and a member of the State Board of Health, and of the Massachusetts State and Essex North District Medical Societies, died at his home suddenly on May 23, aged 65 years.

Dr. Morris Drossner of Jersey City, N. J., a graduate of the University of Greifswald, Germany, in 1863, died recently at his home, aged 70 years.

Dr. Franklin Benjamin Gottschalk of Chicago, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1894, and a member of the Illinois State and Cook County Medical Societies and of the North Side Physicians' Club, died at his home from blood poisoning following an accident, on May 22, aged 45 years.

Dr. Hugh Baker of Connellsville, Penn., a graduate of the University of Pennsylvania, Department of Medicine, in 1901, and a member of the American Medical Association and of the Pennsylvania State and Fayette County Medical Societies, died in Wilmington, Del., from blood poisoning, on May 29, aged 45 years.

Dr. J. Boyd Risk of Summit, N. J., a graduate of the University of Pennsylvania, Department of Medicine, in 1879, and a member of the American Medical Association and of the New Jersey State and Union County Medical Societies, died at his home on May 30, aged 56 years.

Dr. Walter C. Gilday of New York, a graduate of the Albany Medical College in 1894, and a member of the New York Academy of Medicine, the New York State and County Medical Societies, the Clinical Society of the New York Polyclinic, and the Celtic Medical Society, surgeon to St. Elizabeth's Hospital, and assistant surgeon to the New York Polyclinic Hospital, died at his home, from acute gastritis following ptomaine poisoning, on May 31, aged 42 years.

Dr. Ellmore S. Allbee of Bellows Falls, Vt., a graduate of the Albany Medical College in 1870, a member of the American Medical Association, the Vermont State and Windham County Medical Societies, and the Connecticut River Valley Medical Association, and for more than twenty years health officer of the Town of Rockingham, died at his home from pneumonia, after a short illness, aged 65 years.

Dr. Matthew John Leland of Brooklyn, N. Y., a graduate of the New York University Medical College in 1883, and a member of the American Medical Association, the New York State and Kings County Medical Society, and the Brooklyn Neurological Society, died at his home on May 29.

Assistant Surgeon Frank W. Thompson, United States Navy, a graduate of the Medical Department of Yale University in 1907, and a member of the American Medical Association, died at the Naval Hospital, Newport, R. I., from pneumonia, on May 30, aged 30 years.

Dr. John Pitman of Kirkwood, Mo., a graduate of Washington University, Medical Department, in 1864, a member of the American Medical Association, and of the Missouri State and St. Louis County Medical Societies, and for many years

a member of the Kirkwood Board of Education, died in St. Luke's Hospital, St. Louis, from peritonitis following an operation for appendicitis, on May 28, aged 76 years.

Dr. Allan Mott Ring of Arlington, Heights, Mass., a graduate of the New York University Medical College in 1867, and a member of the American Medical Association, and the Massachusetts State and Middlesex County Medical Societies, died at his home on June 3, aged 68 years.

Dr. John W. Shockey of Columbus, Ohio, a graduate of the Physio-Medical Institute, Cincinnati, in 1874, died at his home on May 26, aged 68 years.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE COMMITTEE—ALIMENTARY TOXEMIA—DRUGS, OLD AND NEW—HOSPITAL SATURDAY FUND—LECTURES—NOTES.

London, May 23, 1913.

Yesterday the insurance committee for London declared it was undesirable for any panel doctor to undertake more than 2,000 insured persons on his list. The chairman, Mr. Dawes, M.P., said that about 930,000 persons had selected their doctors by April 14. A subcommittte had recommended that a surplus sum should be distributed in respect of about 400,000 persons who on April 14 had not selected their doctors. The question was put what authority the committee had to allocate the money? It was answered that a circular of the Insurance Commissioners recommended it. To this it was naturally objected: "We are bound by the Act and regulations and not by a circular." The chairman evidently felt the force of this and said it was a legal point which he could not decide, and he withdrew the proposal, for if payments were made by the committee without justification their position would be difficult. Mr. Rockliff, who proposed the limitation of the doctors' lists to 2,000 insured patients, said an average of 1,149 had been taken and one man had double that number and fixed his hours for panel persons at three on week days and one on Sundays, and so three minutes and a fraction were available for each for whom he prescribed. Dr. Lauriston Shaw thought the warning already given would prevent medical men taking more than they could adequately treat. To fix the number would be contrary to the principle of the Act and interfere with the free choice of doctor. Mr. Wood declared there were many cases which would not get proper attention because the number on the doctor's list was too great. Dr. Evan Jones held that 2,000 was the maximum anyone should have to treat. Sir S. Murphy suggested it would be better to wait until the panel was joined by more doctors before deciding on the matter, but the resolution was adopted by a majority.

The special discussion on "Alimentary Toxemia" has at length been closed. The several adjournments and the numerous speakers who took part in the discussion—not less than sixty—have kept the subject before the profession so long and opened so many side views that it will probably be talked of for a good while to come. Indeed it is now apt to intrude into any casual chat between doctors, though most of them admit they have only been interested in some one or two points. There are those who think these long drawn out debates are rather wearisome functions and the communications more adapted for perusal at leisure than for listening to. Certainly there is a lack of spontaneity when so many speeches (so-called) bear marks of elaborate preparation. Others maintain that it is in such set debates that we are most likely to secure the ripe views of busy men whose large experience is most valuable. Both opinions may easily be defended, and perhaps formal debates on this scale may establish a special claim on our attendance.

To the notes I sent you about the meetings in March and April I must add a few lines on those in the present month to finish it, though each one was worthy of a lengthy description. The products of bacteria were regarded by some as all of them toxic, but others were more than doubtful of this Sir J. Goodhart remarked that the colon had a function and though it had been spoken of as only absorbing moisture, its great surface exposed to the food was for something, and it should be kept full, not empty. Dr. Somerville showed the evils of excessive consumption of proteins, and said it was not what happened in the alimentary canal that mattered so much as what was always going on in the tissues. Dr. Jordan showed a number of skiagrams to prove that kinks in the ileum were seen only in patients with distended duodenum and evidence of toxemia. Dr. Langmead dealt with the thyroid in relation to tetany, goiter, arthritis, etc., and mentioned he had used a vaccine of coliform bacilli. Others traced to intestinal toxemia an array of diseases in the skin, the eye, and various tissues and organs; in fact, most of the "ills that flesh is heir to." But caution was commended by equal authorities.

Dr. Rolleston had a good deal to say about toxemia of intestinal origin, but he admitted too much might be made of it and some of the defects attributed to it might be due to small numbers of organisms passing via the blood to the tissues, as in Adami's subinfection with *B. coli*. The relationship with the digestive processes of many of the disorders that had been discussed had been recognized for a long time. Indiscretions in diet were considered causes of arterial and renal diseases; lately it had been said the suprarenals enlarged in arteriosclerosis. Arthritis in several aspects seemed closely connected with digestion; in acute rheumatism the synovitis was transient and the evidence of toxins accordingly difficult to establish in chronic rheumatoid there might be a focal infection. Thyroid insufficiency might also be induced by autotoxemia and on depression of its secretion blood pressure would rise and arteriosclerosis follow as a consequence.

Dr. D. Wilson said he had had 800 cases at Harrogate which he attributed to toxins absorbed from the colon. They were nearly all treated by irrigations of the mineral water and the other methods of the Spa. Dr. Brook had been accustomed to examine the feces in neurasthenia, and in fifty-four fully detailed cases found the flora abnormal. He used antogenous vaccines (minute doses at first). Of intestinal antiseptics only beta-naphthol and sulphur were of use. Dr. Armstrong said dental sepsis would set up joint mischief, but this tendency had been overrated. Dr. Sibley found various skin affections brought about by toxins. Dr. McCulloch said microbes were most prolific in lymphatic channels and it was the lymph which most needed protection from them. Dr. Briscoe said that in 2,000

p. m.'s in a lunatic asylum, Dr. Mott had not found one with signs of appendicitis, and mentioned other facts showing that serious intestinal disease is rare. Dr. Vincent discussed the biochemical processes going on in the alimentary canal of the healthy infant and contrasted them with the conditions found in intestinal toxemia.

The Gresham lectureship has often been spoken of slightingly, but as it is endowed there seems no reason why it should not give rise to meritorious contributions.

The professor of medicine this year certainly succeeded in interesting a goodly number of people by peeping into early knowledge, his subject being "Drugs, New and Old." He opened by remarking that as man became civilized he perpetuated his knowledge on tombs and other ancient writings from which we learn that castor oil was employed by the ancient Egyptians, about 5,000 years ago; rhubarb by the Chinese long before the Christian era, saffron in remote ages, while opium was well known to the Roman and Greek authors. The knowledge of drugs at present was partly empirical, though chemical qualities may be of service in fixing the uses of some. Many have reached us from uncivilized people, *e. g.* quinine. Botanical gardens cultivated medicinal plants in the seventeenth and eighteenth centuries in European cities and universities. The Apothecaries' Garden at Chelsea, the gift of Sir Hans Sloane in 1686, was noted for its herbs. Animal products were used as remedies from very early times, and faith in them survives in some savage races. The Malays ate tigers' flesh to increase strength and cunning. More civilized people were led by such notions to try most revolting substances, such as fox's lung for cough, a live spider rolled in butter to make a pill for jaundice. Vipers cooked in various ways and salted or powdered were held in the highest esteem. Belief in unicorn's horn is traceable to early time, and much so named (perhaps tusk of a whale) was sold. It was said that a King of France had one valued at £20,000. Most remarkable was the belief in parts of the human body for medicine. Hair, blood, etc.; nothing was too revolting. Most valued were skulls of those who died violent deaths. The head of a hanged criminal would sell from 8 to 11 shillings if moss had grown on it—to make of this a sympathetic ointment as infallible against epilepsy in the seventeenth century. The four physicians of Charles II prescribed twenty-five drops of spirit of human when he was attacked with apoplexy. In the seventeenth century there arose a profound belief in powdered mummy as an internal medicine, but the sceptical denounced it as fraud, showing that more mummies were prescribed than came out of Egypt. The lecturer mentioned some notes from Gerarde, who tended the garden of Lord Burleigh (which was in the Strand), and who had a garden of his own in Holborn, then described as "in the suburbs of London." Gerarde will be well known to your readers interested in old herbal lore, so I will only make one citation. Of Solomon's seal he said: "The root stamped while it is fresh and greene and applied taketh away in one night, or two at most, any bruise, black or blewe spots gotten by falls or women's wilfulnesse in stumbling upon their husbands' fists, or such like." The patient of old, like many today, seemed to like a smack of mystery about his medicine, and the lecturer said the ancient practitioner seemed willing to play up to this weakness. Today it is estimated quack medicines in England are sold to the extent of above £2,000,000 a year, enough to keep up 40,000 hospital beds. This waste of money, mostly by those who can ill afford it, would be bad if only waste, but much is not harmless, but very injurious. Herbals became less important when the study of drugs led to their supersession by pharmacopœias—the first of which issued under authority, being that of Mürenburg (1542).

A meeting of the Hospital Saturday Fund has been considering a flood of complaints against hospitals by insured persons under the new Act. It was found they had not chosen their doctors and had no knowledge that their ordinary ailments would in future have to be treated by practitioners on the panel. It was found that these complaints began suddenly in January, but ceased almost entirely by February 1, bringing the number below the average for that date. It was reported that all complaints had been referred to the hospitals concerned and had been fully investigated, and wherever possible all hospitals had done their utmost to meet suggestions or wishes expressed by the Fund.

The Fitzpatrick lectures were given this year by Dr. Raymond Crawford on "Echoes of Pestilence in Literature and Art." He mentioned that Lucretius seemed to explain the outbreaks on a kind of atomic theory, Varro attributed them to living microbes, and others had associated them with comets, earthquakes, and meteorological phenomena.

The Horace Dobell lecture was given by Dr. C. J. Martin, doctor of the Lister Institute, on "Insect Porters of Bacterial Infection."

An appendix to the report of the Royal Commission on tuberculosis was issued on Monday, in which full details of the experiments are given and a number of charts depicting the results of tuberculin tests on different animals.

A donation of £10,000 has been given by Mr. Tate to the Cancer Research Fund.

Princess Christian on Monday laid the foundation stone of an extension of the Royal Free Hospital, which is estimated to cost £40,000.

## OUR PARIS LETTER.

(From Our Regular Correspondent.)

EXAMINATION OF THE BLADDER IN CASES OF CANCER OF THE CERVIX UTERI—PATHOGENESIS AND TREATMENT OF GOUT—THE STARVATION TREATMENT OF GUELPA—AMBARD'S METHOD OF DETERMINING FUNCTIONAL RENAL INSUFFICIENCY—TECHNIQUE OF THIS METHOD—ITS VALUE.

May 1, 1913.

THE examination of the bladder in cases of cancer of the cervix uteri was the subject of a paper read before the Surgical Society by Pierre Gruet. This observer has studied the bladder in women affected with uterine cancer in order to determine whether this organ gave any information that would be of value from the operative viewpoint. Cystoscopy indeed yielded very interesting results. One of the first changes in the bladder during the course of uterine cancer is the bulging forward of the bladder wall in front of the neoplasm. If the bulging is limited to the region of the trigone, the ureteral orifices are displaced upon the lateral and superior aspects of the arch. At the same time there are important circulatory changes. In some cases there is an increased prominence of the blood-vessels and a multiplication of the latter, owing to the

fact that the faint vascular arborizations become more visible. In other cases when the lesion is more advanced one may detect the presence of elongated transverse folds. These folds are more frequent behind the interureteral muscle. Sometimes there is an edema which may be diffuse, raising the vesical mucosa en masse, and giving it the appearance of a cushion. In other cases the edema forms large parallel folds which infiltrate the bladder. At times one may note a bullous form of edema composed of clear vesicles of various dimensions, from that of a pinhead to that of a grape. Among these may be frequently noted small, irregular, reddish ulcerations covered with a false membrane. In some cases finally there is an invasion of the bladder mucosa directly by the cancer. At first this appears in small, smooth, whitish granulations, embedded in the mucosa, and pinhead in size. Later there appear nuclei the size of a small pea whose capacity and hardness differentiate them from the edematous swellings. At last the cancerous invasion causes an ulceration and perforation of the bladder wall.

Cystoscopic examination enables one to draw conclusions with reference to the question of operability. In fact, the detection of carcinomatous invasion of the vesical mucosa contraindicates any radical operation. The simple bulging of the floor of the bladder has no importance from the operative viewpoint. It is necessary to bear in mind, with reference to the operative indication, the condition of the ureteral orifices. These may be entirely surrounded, compressed, or invaded by the neoplasm. Moreover, the study of the ureteral outflow is even more important. One may detect a delay in the outflow, which may finally come with greater impetus, or there may be an irregularity in the outflow, and at times there may be spasms of the ureteral orifice without any real ejaculations of urine. The determination of these facts is important for they suggest interruptions in the permeability of the ureter or its possible cancerous invasion.

The pathogenesis and treatment of gout was discussed at a recent meeting of the Academy of Medicine. An extensive study of this subject was made by Guelpa. According to this observer the uric acid which is found in gouty individuals in a state of saturation is not in such excess because of an excess in its production, but because on the contrary the dietetic abuses have modified the blood in which the uric acid was present normally in a soluble state. Dietetic excess, particularly an excessive alkalinity and superabundance of mineral constituents causes a precipitation in the blood of uric acid and various salts, particularly the phosphates and the oxalates. Hence results deposition of the tophi which are the tangible and characteristic evidence of gout.

In the treatment of this condition Guelpa recommends the absolute prohibition of food for three or four days, accompanied by the administration each day of a strong purgative which will ensure a watery evacuation. Following this there is given a restricted diet, consisting mainly of meat, while milk and vegetables are avoided. This method of feeding frequently causes acute crises of gout, which are temporarily necessary for the progressive diminution in the size of the tophi. At the same time it is a good plan to add to the diet sweetened beverages which are very useful in calming the painful crises, and in sustaining muscular power.

An interesting discussion followed the reading of the above communication. Bouloumie thought that most of the cases reported by Guelpa were in reality instances of chronic rheumatism and not of gout. Salignat believed that the starving treatment was too exacting for certain individuals. Many gouty individuals are too weak to stand this form of treatment, which would, moreover, make them more susceptible to intercurrent affections, particularly tuberculosis.

Ambard's method of determining renal insufficiency was the subject of a paper read before the Medical Society of Paris by Carrion and Guillaumin. Ambard's method constitutes a new and important step in advance, in its comparison of the simultaneous content of urea in the blood and urine. Ambard has shown that in the healthy subject there is at all times a definite ratio between the urea in the blood and the urea in the urine. This ratio being unchangeable is expressed by a constant figure called the "constant of Ambard." Even in the case of renal disease this ratio is similarly a constant one, from one moment to another, but it has another value and is expressed by another figure than in the healthy individual. Hence side by side with the normal constant there are the pathological constants, which vary from the normal one in direct proportion to the extent of disease in the kidney. Ambard's constant, therefore, furnishes a criterion of diagnostic, prognostic and therapeutic value in the management of renal disorders. Ambard's constant is arrived at by arithmetic. In an individual of known weight the urine excreted in a short period is measured. There is then calculated (1) the urea content in the urine, (2) the rapidity in the excretion of urea, and (3) the content of urea in the blood. If the experiment is tried a number of successive times the same day or on different days, one will obtain different results, for the content in urea varies according to the diet. The urinary content in urea varies according to the abundance of fluid taken, but in this Ambard discovered the law according to which the kidneys maintain the reciprocal relationship between the blood and the urine. This law is expressed by the mathematical constant for the normal man, namely, 0.070. If the secretory function of the kidney is insufficient, this constant rises. Therefore the tendency to uremia is proportionate to the size of the constant. The great interest that attaches to this method depends upon the fact that the content of urea can be determined in a manner at once practical and precise.

The technique of this method is as follows: There are obtained 10 cubic centimeters of blood, which is defibrinated and poured into a conical vessel. There is then added little by little and at the same time triturated with the blood by means of the bottom of a test tube, an exactly equal volume of a 20 per cent. solution of acetic acid, and the mixture is then filtered. There are then taken ten cubic centimeters of the filtrate which are placed in the ureometer. There are then added three or four cubic centimeters of caustic soda diluted with two volumes of water. There is next added a certain amount of water and then the hypobromite of sodium. The reading is made in the usual manner.

The subject on whom the determination is being made should take, one-half hour before the experiment, a half liter of water in order to increase the amount of urine secreted. The urine is then completely voided from the bladder, and a minute later the specimen of blood is obtained by means of wet cupping, a venous puncture, or a venesection. It is necessary to collect twenty cubic centimeters of blood. In about twenty minutes the subject empties

his bladder for a second time, the urine is collected, and it is upon this specimen that the calculation is made. The weight of the subject should be determined, for this enters into the calculation.

The results obtained by "Ambard's constant" are quite interesting. Whatever may be the content of urea in the blood, whatever may be the diet, whatever may be the day or the hour of the experiment, the "constant of Ambard" shows whether the kidney is impaired or not, and if impaired, even to a slight extent, it shows the exact degree of this impairment. No other method is as suitable or as certain.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*May* 29, 1913.

1. Protection of Milk. E. M. Buckingham.
2. The Control of the Careless and Incorrigible Consumptive. M. W. Richardson.
3. Efficient Boards of Health. R. N. Hoyt.
4. Open-Window Schoolrooms. A. G. Rice.
5. Control of the Careless and Incorrigible Consumptive. C. T. Callahan.
6. On the Frequency of the Transition of Ulcer of the Stomach into Cancer. J. Friedenwald.
7. Tuberculous Osteomyelitis of the Digits. R. M. Green.

1. **Protection of Milk.**—E. M. Buckingham states that the production of a good and safe milk is not a hopeless problem. Milk production should be guarded by an efficient official inspection. Pasteurization is efficient, but it, too, has its dangers and should also be guarded by an efficient official inspection. There is some evidence that pasteurization is injurious to young children and that for the present a safe raw milk is to be preferred for them.

2. **Control of the Careless Consumptive.**—M. W. Richardson believes that health boards have support in law for much more drastic action as regards the careless and incorrigible consumptive than has been supposed, and that such legal support can be invoked with success, especially by those communities which are provided with isolation hospitals for consumptives.

3. **Efficient Boards of Health.**—R. N. Hoyt finds that the chief difficulty in the way of cooperative health work is political jealousy. This obstacle is avoided by a plan now being developed by Professors Sedgwick and Phelps of the Massachusetts Institute of Technology, who have organized a staff of trained men prepared to give efficient health protection to any group of towns at actual cost. Being under the wing of an educational institution, the organization is freed from political or commercial affiliations. This plan is already in operation in a group of towns about Boston, comprising Wellesley, Framingham, Needham, Weston, and Belmont. Other towns have accepted part of the service. The organization consists, first, of a board of advisory experts, consisting of professors in the department of biology and public health. Each member is a recognized expert in some line of public health work and stands ready to give his advice and assistance when needed. Second, there is a working staff of trained men consisting of a health officer, a bacteriologist, and chemist and a plumbing and sanitary inspector. These men, with their assistants, plan to care for a circle of towns from a central office and laboratory. An automobile and motorcycle and the telephone furnish quick communication with all parts of the district served. It is expected that similar organizations will shortly be brought together from other districts. This technology plan of expert public health work for small communities marks an important step in the direction of progress. When it shall have been fully developed by careful trial and study and has been made to conform to practical working conditions, it will undoubtedly mark a distinct advance in modern sanitary science.

7. **Tuberculous Dactylitis.**—R. M. Green concludes that tuberculosis osteomyelitis of the digits is essentially a disease of infancy and childhood presenting a definite clinical picture and tending strongly to spontaneous recovery. Pathologically it is characterized by bone destruction and rarefaction and by chronic inflammatory reaction in the surrounding soft tissues. It may heal by resolution and absorption, or by sequestration, suppuration, and sinus formation. Its differential diagnosis from pyogenic osteomyelitis, sarcoma, and syphilitic dactylitis may be made by clinical signs and *x*-ray examination. Its prognosis for anatomical and functional recovery is good and is proportionate to the amount of bone destruction and scar-formation. Therapeutically primary emphasis is to be laid upon general hygiene and local fixation. Incision should rarely be resorted to, since it complicates the dressing, protracts convalescence, and increases subsequent deformity and disability. Amputation is almost never indicated. Probably treatment with the *x*-rays, or other forms of irradiation, is a valuable adjunct to the conservative therapeutic measures above described, since it expedites recovery by stimulating natural reparative processes.

### New York Medical Journal.

*May* 31, 1913.

1. Restoring Mobility after Bony Ankylosis of the Joints. R. Tunstall Taylor.
2. The Care of the Tuberculous Employees by the Corporations as Employers. A. H. Doty.
3. The Philosophy of Preventive Medicine. A. C. Reed.
4. Hospital Uranalysis. V. C. Myers.
5. Enchondroma of the Scapula. W. D. Miningham.
6. Pylorospasm with Gastric Tetany. R. L. Pitfield.
7. Mitral Stenosis. M. Schulman.
8. The Old Method of Treatment of Syphilis versus the New. M. B. Parounagian.
9. Report of Three Cases of Epidemic Septic Sore Throat in One Family. M. B. Gordon.
10. The Care and After-Care of the Consumptive, with Special Reference to New York City. B. S. Horowicz.
11. Acute Intestinal Obstruction. R. A. Barr.
12. The Successful Treatment of Atrophic Rhinitis and Ozena; A New Remedy. L. Jacobs.

2. **Care of Tuberculous Employees.**—A. H. Doty believes that the most practical and economical means of securing additional accommodations for the isolation and care of tuberculous patients would be to allow individual companies or corporations to erect and equip on the grounds of the State or municipal sanatoria, cottages or small buildings capable of holding eight or ten patients, similar in construction and appearance to those already in use, or modified as the State or municipal authorities might direct, and solely for the care of employees of such individuals, companies, or corporations; provided that the employees are also residents of the municipality or State supporting the sanatorium in question, and therefore equally eligible with others for admission whenever a vacancy should occur. The advantage secured under this plan consists in the certainty with which the beneficiaries may promptly enter the sanatorium, without remaining indefinitely on the waiting list. Furthermore, this in no way interferes with the admission of others who are applicants for care and treatment in the said institution through the ordinary channels. Neither the individual nor the company constructing these buildings, nor the employees occupying them, should be entitled to receive any additional privileges, or a voice in the management of the institution. The patients sent in by the company would be under the same discipline and jurisdiction as those entering in the ordinary way. It would simply mean that those who were selected for treatment in the companies' buildings would secure prompt admission.

8. **The Treatment of Syphilis.**—M. B. Parounagian outlines as follows his method of treating a fresh case of syphilis in an adult: After demonstrating the spirochetes one should excise if possible the primary sore, particularly before the eruptive stage, as this would remove an important focus of spirochetes. If the excision is not prac-

ticable, inunctions of calomel ointment, thirty-three per cent., should be applied to the chancre. Injection (intravenous) of three or four doses of salvarsan should be given, if possible in rapid succession, and then, notwithstanding the absence of clinical symptoms and a possible negative Wassermann reaction, the patient should be subjected to a vigorous course of mercury, perhaps corresponding to one-half the amount and time which would have been devoted to this form of treatment had salvarsan not been given at all. For those having the advantages of large clinical and hospital facilities, and who can follow their patients for years, the treatment with salvarsan alone may suffice; but by the average general practitioner, who sees patients in a more transient way, the combination treatment should be used. That is, the patients should be given the chance of cure which salvarsan holds out, but should not be denied the benefits which we know follow the use of mercury. Moreover, if for any reason it were incumbent upon the practitioner to choose between the two remedies—in the light of the experimental stage of salvarsan at the present day, and in justice to the time-honored remedy, which has survived for four centuries—the author believes mercury should be given the choice, at least for the present.

11. **Acute Intestinal Obstruction.**—R. A. Barr emphasizes the following points: Digestive disturbances, with colic, following abdominal operations, should be treated with opiates and not with purgatives. A suspected mechanical obstruction should never be treated or tested by purgatives by the mouth. Under such circumstances the painful peristalsis should be quieted with opiates. Attempts to move the bowel should be made only with enemata. Patients with suspected strangulation of the bowel, or with mechanical obstruction of any type that does not yield promptly to opiates, gastric lavage, purgative enemata, and hypodermoclysis should be treated by section. In all patients, except desperate cases that are operated on a search should be made for the obstruction, provided no adhesions are present. This search should, if possible, start with the cecum, and should proceed up or down the gut, as determined by the flaccid or distended state of the cecum. If the obstruction is not located after a brief search, enterostomy should be done at the lowest point in the distended gut that is practicable. This should be made by fastening in a rubber tube with sutures, after the manner of a Kader or Senn gastrostomy. There is one technical point that the author presents. It concerns a plan he has used only once. When resection is done for damaged gut, and anastomosis is considered justifiable, one should use the lateral suture method, and establish gut drainage by fixing the proximal end of the gut in the operating wound, or in a stab wound, after fixing a tube in it by two or three successive purse strings of catgut. By this means the proximal bowel is given an outlet for its accumulations, and the suture is absolutely relieved from stress and strain due to distention of the gut. Spontaneous closure of the fistula is practically assured, since a portion of it is lined with peritoneum.

12. **Treatment of Atrophic Rhinitis and Ozena.**—L. Jacobs presents the following conclusions: The substance known as scarlet red may be applied to the nasal mucous membrane without producing any constitutional symptoms. The best excipient for this application is mucilage of acacia. Lasting results of great benefit in atrophic rhinitis may be obtained by the use of this remedy. The treatment is simple and of short duration.

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Journal of the American Medical Association.

*May* 31, 1913.

1. Whooping-Cough. A Plea for More Efficient Public Regulations Relative to the Control of this Most Serious and Fatal Disease. J. L. Morse.
2. Basic Fuchsin in Chronic Leg Ulcer. A Preliminary Report. E. S. May and M. L. Heidingsfeld.
3. The Treatment of Nephritis and Allied Conditions. M. H. Fischer.
4. Acute Posterior Ganglionitis Simulating Surgical Conditions in the Abdomen. L. Litchfield.
5. A Comparison Between Zoster of the Face and that of the Leg, as Shown in Two Cases Recently Observed. D. W. Montgomery and G. D. Culver.
6. Treatment of Superficial New Growths by Pure Radium Bromid. F. H. Williams and S. W. Ellsworth.
7. Method of Bone-Plating. Carl E. Black.
8. An Operation for Ventrosuspension by the Round Ligaments. H. Neuhof.

2. **Fuchsin in the Treatment of Chronic Leg Ulcer.**—E. S. May and M. L. Heidingsfeld treated twenty selected cases of chronic leg ulcer with an ointment made up as follows: Fuchsin (Grübler's) 5 parts; eucalyptus oil, 10 parts; anhydrous wool fat, 100 parts. The results were remarkably good. The ulcerations cleaned rapidly and pus and all evidences of secondary inflammation disappeared promptly with relief of pain. In a few cases, however, the use of the remedy over a period of several weeks caused a mild inflammatory reaction and dermatitis, and the formula was changed to the following: Fuchsin (Grübler's), 1 part; petrolatum, 5 parts; anhydrous wool fat, 100 parts. This has been well borne in all cases. The authors insist on the importance of the character of the fuchsin employed and believe that in this class of cases basic fuchsin possesses the most satisfactory therapeutic efficiency.

3. **Treatment of Nephritis.**—M. H. Fischer summarizes his method of treatment as follows: One should give alkalies, salts and water—the alkalies to neutralize the abnormal acid in the kidney and elsewhere, the salts because the various changes induced in the kidney colloids by acids are counteracted by adding any salt, even a neutral one, and the water is given in order to have more of it present in the body than is necessary to saturate all the body colloids, otherwise we would have no "free" water for the secretion of urine. In most cases after attacking the toxic and other causal factors, removing them as far as possible and attempting to render the others innocuous, one should attempt to reduce the concentration of the acid by giving water systematically, and a good way is to give a glass every hour, day and night. If it contains an alkali, so much the better; but the dietary can be made an excellent vehicle for introducing alkalies and salts into the body, and the author would not restrict the amount of table-salt used. If the gastric route is not sufficient the rectal can also be employed to introduce the remedies. In severe cases the best and quickest method is to inject something into the blood. The author finds that one of the same formulas given for the rectal method (sodium carbonate, 10 grams, and sodium chloride, 14 grams, in 1,000 c.c. of water) does very well if injected directly into the vein in case of suppression or convulsions, persistent vomiting, etc.; from 1,800 to 2,000 c.c. of the solution should be given for the first dose and proportionately less for a child. If this fails he gives a second injection still larger at a period of from six to twelve or twenty-four hours after the first, the injections to be given as slowly as conveniently possible. The author mentions that some reactions that may follow cannot always be avoided and that the patient should be protected and guarded against chills. When the condition has advanced to one not of pure nephritis but one complicated with failing heart, alkalies and salts cannot supply the needs if the heart has dropped to its lowest level of efficiency and has lost its recuperative powers.

6. **Radium Treatment of Superficial New Growths.**—F. H. Williams and S. W. Ellsworth note that the application of pure radium bromide in sufficient amount, properly used, is a harmless, painless, and efficient method of treating early superficial new growths. Radium is well adapted to cancers of the face, as the cosmetic results are excellent, and particularly to the eyelids, where operation may offer special difficulties and disadvantages. With

proper care there is no danger to the eye. Operation is still considered to-day the method of choice in early skin cancers by most practitioners, but the results obtained here and abroad show that radium should be used first in early cases and operation reserved for such as are not readily controlled by it. Radium is more successful when it is the first treatment employed than when it is used after operation, *x*-rays, or other forms of treatment, although even under these circumstances it does well. The number of treatments required in some cases is from two or three to ten, while in others more than twenty are needed. Improvement usually takes place after two or three applications of the radium. Many people dread the knife, even for a simple operation, and fearing surgical interference will be advised, delay coming for treatment, thus lessening the chances of recovery. Radium is free from dread, as its action is painless. The analgesic action of radium is noteworthy. For keloids, unless extensive, radium is by far the best treatment known to us. Where radium is obtainable, it would be well to use it for skin lesions of small area which do not heal readily under simple applications. All powerful remedies have dangers, but they can be avoided if care is taken. During the seventeen years the *x*-rays have been used at the Boston City Hospital no patient has been burned, nor have any untoward results occurred in about ten years during which radium has been employed there.

## The Lancet.

*May* 24, 1913.

1. The Electrical Action of the Human Heart. A. D. Waller.
2. Alimentary Toxemia: A Summary and Reply. W. H. White.
3. Growths in the Gall-bladder and Growths in the Bile Ducts. S. Phillips.
4. The Dangers and Complications of Salvarsan Treatment. H. W. Bayly.
5. A Case of Phthisis with Complete Cavitation of the Left Lung. D. W. C. Jones and E. S. Worrall.
6. A Method of Counting Bacteria in Water. R. Donald. With Remarks upon the Bearing of the Method upon the Subject of "Saline Fever," by P. Fildes.
7. A Case of Facio-Hypoglossal Anastomosis. E. C. Bevers.
8. Man's Mental Evolution, Past and Future. H. Campbell.

**3. Growths in Gall-Bladder and Growths in Bile Ducts.**—S. Phillips notes that the only evidence to be expected of a growth in the gall-bladder is the presence of a tumor, often with a history of long-standing cholelithiasis. And there may be no tumor detectable in cases of soft growth projecting into the interior of the viscus. On the other hand, where the growth grows eccentrically the tumor may be enormous. Adhesions of the tumor to surrounding parts, interfering with its mobility with respiration, may render its identification as a gall-bladder tumor very difficult, and this identification may be quite impossible where the tumor invades and occupies the usual position of the liver. The cases of growth in the bile ducts contrast with those of the gall-bladder by the constant presence of jaundice without tumor; although, as Mayo Robson points out, catarrhal jaundice may occur in the course of growths of the gall-bladder, it is not the same early prominent symptom that it is in cases of gall-bladder growth which also give rise to tumor, and the difficulty of the diagnosis of growths in the bile-ducts is to distinguish them from growths in the pancreas rather than from growths of the gall-gladder. The occurrence of jaundice without tumor is an important indication that the disease is not a growth in the gall-bladder; and when with tumor of the gall-bladder there is jaundice the growth is probably not limited to the gall-bladder. A tumor of the gall-bladder with no jaundice gives hope that relief or cure may result from operation. And the frequency with which calculi are found with growths both of the gall-bladder and ducts is a strong reason for removal of gallstones by operation at the earliest possible moment.

**4. Dangers of Salvarsan Treatment.**—H. W. Bayly concludes that the risk of death is so small that if due care taken in preparation of the patient, and no errors are made in preparation of the solution of the drug, technique of administration, interval between injections, or subsequent treatment, fear of death cannot justifiably be advanced as a reason for withholding salvarsan treatment. The slight risk of serious complications or sequelæ is more than counterbalanced by the therapeutic results obtained. All sufferers from syphilis, in whatever stage, and all cases of early parasyphilis should, as a matter of routine, be permitted the advantage of salvarsan treatment.

## British Medical Journal.

*May* 24, 1913.

1. The Treatment of Pernicious Anemia. B. Bramwell.
2. Acute Perforation of the Gall-Bladder: with an Account of Six Cases. L. R. Braithwaite.
3. The Incidence of Ophthalmia Neonatorum in London. N. B. Harman.
4. A Preliminary Note upon an Experimental Investigation of Concussion of the Spinal Cord and Allied Conditions. A. Newton.
5. Pseudo-Fractures of Transverse Processes. O. L. Rhys.
6. A Case of Tetanus Treated with Intraspinal Injections of Magnesium Sulphate. H. L. Tidy.
7. Cesarean Section, with Especial Reference to the Rarer Indications for the Operation. W. H. Maxwell.

**1. Salvarsan in Pernicious Anemia.**—Byrom Bramwell reports the results in eleven cases of undoubted pernicious anemia, and in one doubtful case treated by salvarsan; of the eleven undoubted cases, four have been apparently completely cured—whether in these cases a relapse will occur or not the author is unable to say; in two cases there was very striking improvement; in one case there was very considerable improvement, but ultimately a relapse and death; in one case there was slight improvement and death from bronchopneumonia while under treatment; in two cases there was no improvement; and in one case slight improvement, the patient being still under treatment. The author has had nearly forty years' experience with the ordinary arsenical plan of treatment of pernicious anemia, and he believes that the salvarsan treatment is superior to the ordinary arsenical treatment. Further experience is, however, required before one can say whether the beneficial effects, which it undoubtedly produces in many cases, will be lasting or merely temporary. In giving salvarsan he has always given it intramuscularly, the dose used being 0.3 gram, which is half the dose usually employed in syphilis.

**2. Acute Perforation of the Gall-Bladder.**—L. R. Braithwaite states that as Sir Berkeley Moynihan has frequently pointed out, in every case of gall-bladder trouble provided the history is carefully noted, there is a complaint of flatulent indigestion over a long period. Attacks of severe pain in the region of the gall-bladder, with shivering fits of great or small intensity, may be present in nearly all cases in which there is an infection of any degree of severity. It is of great interest to find that the sudden agonizing pain characteristic of the rupture of a hollow viscus, followed by a zealous rigidity of the neighboring body wall, does not occur in all cases; probably both conditions depend to some extent upon the virulence of the invading bile. At the moment of perforation there is always severe pain in the region of the gall-bladder, followed in two or three hours by pain referred to the umbilicus. Moynihan showed how the fluid from a perforated duodenal ulcer gravitates over the bend of the hepatic flexure to the right iliac fossa; fluid escaping from the gall-bladder follows the same course, and gives rise to swelling and pain in the region of the appendix. It is a matter of much interest and of some importance to note that the effusion of a quantity of bile of a degree of virulence sufficient to cause a peritonitis will in the course of a day or two give rise to a definite fluid swelling simulating in every way an appendix abscess. The degree of rigidity is most variable and there is hardly ever the "marble" hardness found in other abdominal catastrophes. In none of the cases seen by the author has there been that degree

of involuntary stiffness and inability to move about seen in other grave abdominal conditions. It would appear that the absorption of bile from the peritoneal cavity slows the pulse-rate, just as absorption of bile in cases of jaundice reduces the normal pulse-rate. The pulse-rate after twenty-four hours will depend upon the virulence of the infection and the kind of peritonitis. The temperature may remain subnormal until the formation of an abscess or the onset of acute peritonitis.

4. **Concussion of the Spinal Cord.**—A. Newton presents the following provisional conclusions based upon his experiments: The spinal cord is extremely sensitive to slight degrees of concussion and compression; despite the slight anatomical changes demonstrable after lesser degrees of injury, the resulting disturbance of function is considerable; after concussion which has quite abolished motor efferent conduction, sensory conduction can still be demonstrated; arrest of the spinal cord circulation by aortic compression abolishes spinal cord function in from fifteen to thirty seconds; these experiments support the view that there is an organic basis for the signs and symptoms of "railway spine" and allied conditions of traumatic neurasthenia.

## Berliner klinische Wochenschrift.

*May* 19, 1913.

**Circumscribed Inflammatory Tumor Formation in the Abdominal Cavity.**—Von Schmieden refers to growths which originate in the omentum. The condition is a relatively new one, or rather newly described, and has sometimes imposed itself as a form of malignancy. Search through literature during the past few years has revealed but few cases, and the older literature has little or nothing which can be regarded as belonging under this head. The patients have been middle-aged, obese individuals, and the omental fat shows a central necrosis. One naturally thinks of such known conditions as strangulation of the omentum or of epiploitis plastica; but a study of the new cases shows that they possess a distinct individuality, as indicated by the title. The author describes one case in detail, and further terms them the Kuttner type, because that surgeon first worked out the individuality of the condition. The intimate nature and causal factors are still utterly obscure. Although inflammatory, no parasitic cause is yet in evidence. Central necrosis does not necessarily occur. The treatment is satisfactory because the masses are readily removed, and if neglected would certainly cause pressure symptoms. The blood vessels of the omentum seem to be concerned in the genesis of the masses (embolism, thrombosis, hemorrhage). Cases may have been masked as lues or actinomycosis.

**Rhinitis Posterior in Nurslings.**—Göppert mentions our increased knowledge of snuffles of nurslings, with especial reference to posterior rhinitis. He relates a specimen case as follows: Child aged 5 months; characteristic facial deformity and typical thorax of obstructed nasal passages. This was a permanent condition. Upon this basis the infant had developed in succession pneumonia, an angina an anterior rhinitis, bronchitis, more angina, repeated coryzas, and finally otitis media. The child was under observation seventeen months in all and the growth rate was much in abeyance. In such cases there may be a complete arrest of growth during the period of illness. In such cases, while there is swelling in the nasopharynx the actual site of stenosis is at the posterior choanæ. This furnishes a suggestion for radical cure by dilatation of the choanæ; a phenomenon which normally comes about of itself by the end of the first year. The author does not appear to favor forcible dilatation, nor curettage of the nasopharynx, and treats the mucosa with adrenalin and silver nitrate, in such manner as to prevent occlusion and secondary morbidity.

**Opening of the Lacrymal Sac Through the Nose in Dacryostenosis.**—West reports over 100 cases of this operation from Professor Silex's Berlin clinic. To reach the sac by the nasal route the author cocainizes the nasal chamber, and opening the inferior turbinal, chisels through the ascending process of the superior maxillary and the lacrymal bone to expose the distended sac; whereupon a new passage between eye and nose is established. This intervention has the advantage of reestablishing physiological conditions. Not only are the tears conducted away but if pus forms at any time drainage is already at hand.

## Münchener medizinische Wochenschrift.

*May* 13 *and* 20, 1913.

**Emin Pasha and the Mosquito Origin of Malaria.**—Sehrwald, who makes no allusion to more ancient theories of the mosquito origin of malaria, is content to show that Emin Pasha, physician, naturalist, and explorer, preceded Ross by about twenty years in demonstrating that mosquitos transmit the disease from man to man. He protected himself for many years by mosquito netting, and apparently never contracted the disease at all. According to Sehrwald's accounts, however, Emin never accused the mosquitos, but some kind of emanation from swampy land which could not penetrate the netting. It is therefore not surprising that Stanley regarded the netting in the light of a visionary notion, something to be laughed at. Stanley himself was always at work on the origin of malaria and made many recorded observations in regard to altitudes, still or running water, etc., and never once came near the mosquito theory; while all goes to show that Emin was equally in the dark, and did no more than wrap himself in netting while sleeping in swampy ground. To assert that Emin was the logical predecessor of Ross seems quite unwarrantable. Emin began his African sojourn in 1876, and when he met Stanley in 1888, had long been using the netting. A feature of interest not touched upon is the use of netting against the mosquitos alone. According to Schrwald's account, it could not have been an ordinary camp supply, but was taken along especially for Emin's own use.

**Successful Treatment of a Tonsillar Sarcoma.**—Wolze and Pagenstecher report the cure of an inoperable malignant tumor with the combined use of cuprase and the *x*-ray. The growth involved the right tonsil and pharyngeal wall, and was badly ulcerated. Patient, an elderly man, was much reduced in physical condition, due no doubt in part to interference with swallowing. The *x*-ray was unable to arrest the growth, either alone or combined with antimeristem. For the latter substance cuprase was substituted. The latter was at first tested alone, but without much success. It was then used in combination with the rays and the tumor began to undergo involution until its final disappearance, the patient in the meantime having resumed his occupation. The microscopic diagnosis of sarcoma had been made before the treatment, and at present only latent residues persist. The interval is naturally too brief to speak of a cure in the usual sense.

**Traumatic Rupture of a Cerebral Aneurysm.**—A condition hardly possible to diagnosticate in life from an ordinary extravasation of blood in the brain is reported by O. Orth. The diagnosis in this case was actually made before death by means of lumbar puncture. The case being one of fatal traumatism, had a medicolegal side. The patient had been a healthy man, aged 42, who worked for years as a stonemason, building towers. During this period he never was dizzy. He changed, however, to a lighter form of labor, and in the course of his day's work had but one straining effort to make, to wit, the carriage of a fifty pound load for some distance at 10 a. m. While so engaged he had seemingly an ordinary apoplectic stroke,

but no serious paralysis followed. A number of evidences of meningeal irritation developed and death occurred after 11 hours with Cheyne-Stokes breathing. Autopsy revealed a perforated aneurysm of the anterior inferior cerebellar artery of the right side. There were no evidences of any general diseased state of the arteries, and after injury the blood pressure had been but 120. There were none of the conditions which predispose to aneurysm. The latter was no larger than a pea, and its occurrence could not be explained. Forensically, death was due simply to trauma.

**Blood Pictures and Convulsive States.**—Jödicke emphasizes the necessity of drawing upon all our resources for differential diagnostic purposes. Thus we see one after another of the criteria which have served us in the past to distinguish hysteria from epilepsy prove untrustworthy with wider experience. It therefore occurred to the author to test various blood counts from this viewpoint. We have records of numerous labors concerning epileptic blood counts. The first step to ascertain referred to post-paroxystic leucocytosis—is it inevitable? The author has a large epileptic but small hysterical material, so that he chose more or less at random two cases of major epilepsy, one of petit mal and one each of hysterical convulsions and hysteroepilepsy. The finds were as follows: after each attack of essential epilepsy there was a leucocytosis, the count being over twice as high as in the intervals. This includes the case termed petit mal which also exhibited major attacks. The leucocytosis appeared after petit mal and abortive attacks as well as after major attacks. The two hysterical cases showed no leucocytosis after convulsive seizures. The research along these lines should prove of interest, and especially in relation to the affect epilepsies of Bratz and of Oppenheim. We are, of course, quite unable to pronounce as yet on the factors which make for leucocytosis at epileptic crises.

**Therapeutic Research Concerning Thorium Chloride in Animal Cancer.**—Caan is engaged in this research at Ehrlich's institute. In the first series two cancerous mice were injected with the chlorid. One who had an ulcerated tumor the size of a walnut died without any improvement, death probably the result of sepsis. The other mouse recovered. In a series of rats the experiments were marred. In the second series, in which both cancer mice and sarcoma rats participated, some animals were lost from infection, but there was a series of eight complete recoveries. In the third series several animals were likewise saved. In all these experiments the salt was injected locally, and the remedy will next be treated intravenously.

**Biological Diagnosis of Pregnancy.**—Stange of the Obstetrical Clinic at Magdeburg furnishes evidence entirely corroborative of Abderhalden's teachings concerning the serodiagnosis of pregnancy. He writes in part to offset some unfavorable testimony of recent date. At first he studied only the sera of surely pregnant women, seventy-three in number, and obtained a positive reaction in every case. Women who not known to be pregnant were not nearly as available, as it is by no means a simple thing to exclude pregnancy. The author is therefore not yet ready to report on this series. In the few cases thus far examined, with pregnancy surely excluded, all reacted negatively. Only the method of dialysis has been used thus far. Simple as it seems at first sight it is in reality a very subtle procedure with many chances for technical errors. The crucial point appears to be the condition of the placental fragment in regard to purity, a positive ninhydrin reaction showing the presence of foreign matter.

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### Deutsche medizinische Wochenschrift.

*May 8, 1913.*

**Infectiousness of the Milk of Syphilitic Women.**—Uhlenhuth and Mulzer have taken up a question which a generation and much less ago was regarded as forever settled in the negative (after a prolonged controversy). Alleged cases of milk transmission had been shown to depend on actual lesions, and experimental results were negative. When the spirochete appeared on the scene it could not be discovered in milk. Nevertheless, disregarding the parasite, the authors began to inoculate rabbits with milk from syphilitic women and succeeded in causing the typical syphiloma of the testicles. To exclude accidental products from the nipples, the latter were sterilized, and the milk expressed manually or by a Bier cup. From 1 to 2 cm. of milk thus obtained was thrown directly into a rabbit's testicle, and in some cases a few ccm. of the woman's blood was also injected. The results were by no means uniform, but of special interest was the fact that milk from symptom-free women could produce positive results in the animals, while the corresponding milk of women with active syphilis might give negative results. Matters thus far stand as above and we can only contend that in a certain per cent. of cases the milk of syphilitic women can communicate the disease.

**Varicella in Adults.**—Krause has recently seen four cases of chicken pox in adults. Naturally the question of excluding variola became one of paramount interest. One case is described in which there is much to be said of local accidents, although the general condition was but slightly altered. In order to exclude smallpox the author ordered the patient vaccinated. Two vaccination pustules then duly appeared on the victim's arm. Patient had been successfully vaccinated in childhood. The author, having consulted various standard works, expresses his unbounded surprise that chickenpox in adults is almost ignored in some quarters, despite its great significance as a varioliform affection. Much space is taken in the effort to contrast variola with adult varicella, every modern resource being invoked. The points of dissimilarity are numerous and there is hardly any likelihood of confusion in typical cases. Borderline cases, however, must occur, and, generally speaking, we know all too little about varicella in adults.

**Correction of Lateral Curvature.**—This is nominally an article by Abbott of the State of Maine, U. S. A., but it appears in translation by Max Böhn of Berlin. The Abbott treatment of sclerosis appears to have aroused the greatest interest in Germany; and aside from this in another article, men like Vulpius and Joachimsthal have in a manner endorsed it as a revolutionary procedure of great promise. The matter is one of unusual interest. Dr. Abbott, who is active clinically in but a small provincial field, and who has published his doctrines chiefly in general medical weeklies, suddenly finds himself famous throughout the surgical world because he has built up a system of treatment which is actually antagonistic to the time-honored conception of the management of scoliosis. Long before he has had time to popularize his views in his own country we see him on the continent of Europe participating in the proceedings of the orthopedic societies. He is ignorant of the language of his hosts, who do their best to translate his English into familiar speech. It recalls the best days of Marion-Sims in his visits to Europe. Orthopedics, no less than gynecology, is an American subject, and Abbott seems to be repeating the conquests of Sayre in this field.

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**Case of Trophic Changes of Obscure Origin.**—H. Campbell, M.D., reports the case of a woman, aged 26, in whom there occurred a disappearance of the subcutaneous fat from all parts of the body above the pelvic region. The intraorbital and mammary fat is retained. The fat began to disappear from the face when the patient was aged about six, and since then the process of absorption appears to have spread downward at the rate of about an inch yearly.—*Proceedings of the Royal Society of Medicine.*

## Insurance Medicine.

**A Letter to Examiners.**—The following letter to examiners, having as its object to secure an intensification of selection, was recently issued by Dr. W. H. King, Medical Director of The Fidelity Mutual Life Insurance Company of Philadelphia:

Dear Doctor: As a Fidelity Examiner you are the eyes and ears of the Company on the ground, the resident guardian of the Company's interests. You will, therefore, be interested in any information that would be of assistance in your work.

Of the total claims presented in 1912, fifteen, aggregating $24,000, occurred during the first policy year. Eighty-two claims, representing $155,796.60 were on policies less than five years old. If by intensified effort we can effect a 50 per cent. reduction in these figures—and this is a reasonable hope—you can see what it will mean to the Company and to our own record as an efficient medical corps. Deaths among the policyholders, especially in the early policy years, may be classified into two divisions, preventable and non-preventable. Accidental death or death from acute infectious disease may be considered as non-preventable. By elaborating any special hazard or unhealthfulness attached to an applicant's occupation, more than is usual for that occupation, you will enable us to appraise each case at its true value. Acute disease might be dismissed with the thought that an epidemic of typhoid or peculiar exposure to infection from this disease should be mentioned in your report. As regards malaria,—environment, social status, prophylaxis, sanitation, should be investigated and approved before you can rate the risk normal.

Passing then to the diseases that might be considered as preventable, let us first consider tuberculosis. You will agree with us that it is the unusual case that should die of tuberculosis within one year of its examination. Therefore, we ask your especial attention to this subject, realizing the vast importance of eliminating it as a factor in the early mortality of the Company. Naturally, if the applicant be underweight, or have a family history of tuberculosis, you will make a searching examination of the bared chest, using every means of diagnosis within your knowledge to eliminate any active process in the lungs or upper respiratory tract. Do not neglect the applicant's appearance. Accurately determine his height, weight and measurements. Take the blood pressure. Record the pulse and afternoon temperature. Tell us what effect his occupation may have on his longevity, and what effect his habits or mode of life, outside of working hours, may have upon him. Then exposure to infection should be carefully investigated. Each case in the near or remote family history should be given its actual bearing as a factor in infection, and the dates of death of each individual in the family that has died of tuberculosis or lung disease should be recorded accurately with the extent and intimacy of exposure to the applicant. The means employed to prevent the spread of the contagion, the thoroughness of the grasp by the affected household of what genuine prophylaxis means in caring for tuberculosis should have due weight in your study of the case. Any non-familial, incidental, or accidental, exposure should be investigated and given its true value. When you have searched a case of this character and feel sure that tuberculosis can be eliminated at the time of examination and the family history is given proper presentation, we can at the Head Office dispose of the case in a manner that would be fair to the applicant and to the Company, and avoid, as far as possible, the untimely deaths from tuberculosis.

Another group of the preventable diseases comprises those entrants dying from affections of the cardiovascular system. In this class fall the heavyweights. We must look to you to help us properly gauge the bearing overweight may have upon a risk. In the first place, if a man be above normal weight, his height and weight should be accurately obtained. The abdominal girth and the chest measurements should be carefully taken, and his general make-up accurately recorded. Is he broad-shouldered, muscularly built, with large limbs and large bones, or is he short-necked, with pendulous abdomen, flabby, his overweight due largely to fat, and not proportionately contributed to by the bony skeleton or muscular development? Such an applicant's habits regarding eating and drinking should be investigated. Is he a gourmand? Does he indulge regularly or to excess in the use of spirits or malt liquors? Is his occupation confining and contributory to the increase in weight? Is his size peculiar to himself or handed down from a long-lived ancestry? The blood pressure should be carefully taken, and the systolic and diastolic pressures recorded by the auscultatory method.. You will in this class of cases gauge as well as you can the functionating ability of the heart and determine as accurately as possible from the uranalysis the exact condition of this excretion. All of these factors, if properly presented, help in the satisfactory selection among the heavyweights.

Minimizing our losses from preventable diseases in the early years, presents a definite field in which we can work improvement. If you, the examiners, the first line in selection, will intensify your efforts in the examination, we at the Head Office will be better equipped thereby to decide equably for the Company and the applicant.

**Tuberculosis and Life Insurance.**—T. D. Lister notes that a life insurance company must consider the entire risk of liability to early death from tuberculosis on three grounds, one, two, or all of which may exist in the proposer coming before it. The first, or hereditary vulnerability, may be supposed to decrease during the course of life as a source of extra risk. The second, or acquired vulnerability, may be supposed to increase during life, if the proposer continues to be exposed to the causes of it. It includes drink, other poisons, chronic lung disease, and unhealthy environment. The third is a constant, striking at the natural resistance all through life, and is the danger of infection. This is possibly a little more intense in active adult life, and may be increased by many causes, such as co-dwelling with consumptives and poor physique, and, so little faith is there in the permanence of acquired immunity, by a past history of the disease in the proposer. So many individuals recover from tuberculosis without its being revealed during life, that a past history of revealed tuberculosis cannot be ignored. It means that the natural resistance broke down badly once. Why not again? The machinery has been proved to be defective or damaged. This point tends to be confused nowadays by the great number of "successful" cases of immunization, based on the injection of tuberculin.—*The Practitioner*, January, 1913.

# Book Reviews.

A System of Clinical Medicine. Dealing with the Diagnosis, Prognosis, and Treatment of Disease, for Students and Practitioners. By Thomas Dixon Savill, M.D., Lond. Third Edition. Thoroughly Revised. Price, $4.00 net. New York: William Wood & Company, 1912.

This book, written, as the title page announces, for students and practitioners, amply fulfills its purpose. It is a most ambitious work, almost entirely covering the range of medical diseases, and in addition chapters are given on examinations of pathological fluids and clinical bacteriology, and formulæ of useful prescriptions. This, the third edition, follows the same general plan and treatment of the subjects as in former editions, viz., approaching the disease to be discussed from the symptomatology to the cause or the disease itself. The cardinal symptom, or the symptom chiefly complained of by the patient, is first presented for study; accompanying symptoms following in natural order. Differential diagnosis is one of the strong features of the book, in short, it treats of the effects of diseases, working to their causes and diagnosis.

The work is arranged in a systematic manner; each group of related organs, or systems, with their associated diseases being given in separate chapters. Under each group, the cardinal symptom complained of by the patient, physical examination found under normal conditions followed by the diseased conditions with their differentiations, prognosis, and treatments, are given. The arrangement of the groupings of diseases is original, as shown in the chapters on the Abdomen, General Debility, and the Extremities. The work has been brought thoroughly up to date, and has been written in a scholarly, yet practical manner. The wonder is, how so much necessary knowledge can be given in such a concise but interesting way. The size of the book makes it convenient to handle, and the illustrations are exceedingly well chosen, sufficiently numerous to elucidate the subjects, yet entirely subordinate to the text—such not always being the case in medical works. The book is to be recommended as a decidedly practical, yet delightfully prepared work on clinical medicine.

Manual of Human Embryology. Written by Charles R. Bardeen, Madison, Wis.; Herbert M. Evans, Baltimore, Md.; Walter Felix, Zurich; Otto Grosser, Prague; Franz Keibel, Freiburg i. Br.; Frederic T. Lewis, Boston, Mass.; Warren H. Lewis, Baltimore, Md.; J. Playfair McMurrich, Toronto; Franklin P. Mall, Baltimore, Md.; Charles S. Minot, Boston, Mass.; Felix Pincus, Berlin; Florence R. Sabin, Baltimore, Md.; George L. Streeter, Ann Arbor, Mich.; Julius Tandler, Vienna; Emil Zuckerkandl, Vienna. Edited by Franz Keibel, Professor in the University of Freiburg, i. Br., and Franklin P. Mall, Professor of Anatomy in the Johns Hopkins University, Baltimore, U. S. A. In two volumes. Volume II. With 658 illustrations. Price $10.00. Philadelphia and London: J. B. Lippincott Company, 1912.

With the appearance of this second volume there is completed the most extensive textbook on purely human embryology. The high opinion expressed as to the first volume when it was published some years ago applies equally well to this. The most important chapters are those on the development of the nervous system, of the sense organs, of the gastrointestinal tract, of the vascular system, and of the urogenital organs. It is manifestly impossible to consider here in detail the contents of a volume of over a thousand pages with more than 650 illustrations. The chapters are divided about equally between German and American authors, and the translation of the German sections can be commended as highly satisfactory, with the exception of that by Grosser on the development of the pharynx and organs of respiration. Owing to the great subdivision necessary in assigning titles, the text is somewhat incoordinated and irregular in its value, but the questionable points are largely ones of opinion on subjects in which investigation to date cannot be considered as complete, owing to the lack of suitable human material. There is also considerable variation in the chapters as regards the value of the illustrations. For example, in the chapter on the development of the nervous system the cuts are almost all labeled with their legends, making it a very simple matter for the reader to understand at what he is looking without constant reference to the usual badly printed and occasionally erroneous key to the hieroglyphics attached to the figures, so often seen in embryological texts. In contrast to this the chapter on the development of the pharynx and organs of respiration, for example, has a number of cuts which have been taken from the German originals without alteration of the lettering. An important illustration is frequently labeled with the meaning of one or two of the key letters, while for the remainder reference is made to a previous cut. Unfortunately, they are not always found in the cut referred to, so that it is necessary for the reader to re-label the drawings for himself before the text can be read with any comfort. Why anatomists submit to such an imposition is difficult to understand, but there has been a crying need for reform in this direction for years, and as in this volume so much has been admirably done it is a pity to have even an occasional plate which sins against common sense. Such minor defects, however, do not in any way detract from the great value of this work which remains a standard book of reference for all teachers and investigators of human embryology.

A Textbook on the Practice of Gynecology. For Practitioners and Students. By William Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society; Professor of Gynecology in the Medico-Chirurgical College, and Gynecologist to the Medico-Chirurgical Hospital, Philadelphia; formerly Lecturer on Gynecology in the Jefferson Medical College, Philadelphia; one of the Founders of the Congrès International de Gynécologie et d'Obstétrique; Member of the American Medical Association, etc. With 1050 new line drawings illustrating the text, by John V. Altender. Fifth Edition, thoroughly revised. Price, cloth, $6.50 net; half morocco, $8.00 net. Philadelphia and London: W. B. Saunders Company, 1912.

Five editions of this work have appeared during the past seven years—an ample test of its popularity. The present edition contains many changes and additions, a mere enumeration of some of which will suffice to show how the author has been quick to incorporate in his comprehensive treatise the most recent and advanced methods in the developments of modern gynecology. These changes and additions include the following: The blood in relation to surgery; De Keating-Hart's method of thermo-radiotherapy; the *x*-ray treatment of fibroid tumors of the uterus; the *x*-ray treatment of obstinate menorrhagia and metrorrhagia, and desiccation in the treatment of warty growths of the vulva. Fulguration as practised by De Keating-Hart is advised as a routine treatment in operations for cancer. The use of acetone and sulphate of quinine is advised in the palliative treatment of cancer of the uterus and vagina, and the use of Coley's toxins in the treatment of sarcoma of the genitourinary tract. The use of stock vaccines, as recommended in the treatment of gonorrheal vulvitis in children. The hormone theory is discussed in relation to puberty, ovulation, menstruation, and the menopause. These are but few of the many additions to this work. The section on operative technique is particularly full, and contains the most detailed directions for carrying out the various operative procedures. The work may be recommended to the student and practitioner as one of the best of its kind.

Kompendium der Röntgen-Therapie (Oberflächen und Tiefenbestrahlung). By Dr. H. E. Schmidt, Berlin. Third enlarged and revised edition. 80 illustrations. Price 5 marks. Berlin: August Hirschwald, 1913.

This book, the author states, is for practitioners who desire to get a general view of the subject. Within 228 pages he has given the essentials in a form easily understood, and at the same time has gone sufficiently into detail to give any one, not *au fait* with the subject, a fair working knowledge. There are numerous good illustrations.

The book is divided into two parts—technical and therapeutic. In the former the author discusses the consistency of Röntgen rays saying that they are probably a movement of mass, *i. e.* particles from the cathode. He describes their production, going into the details of the induction soil, hard, medium, and soft tubes. The hardness is measured variously, one method being by the measurement of the thickness of water will allow one-half through and absorbs one-half. In the therapeutic part the author begins with a short history of radiotherapy since the first empirical treatment of lupus. The general technique is described, placing the tube, etc. Then follows a résumé of the indications and possibilities in different diseases. Psoriasis, eczema, lichen, and severe cases of acne are treated with good results. In lupus and rhinoscleroma wonderful cures are achieved. Even leukemia is arrested, though not cured. Tuberculosis of bones and glands and fistulæ are cured. There is, however, no record of cure of an inoperable case of carcinoma, while on the contrary sarcoma is reduced. The book is excellent for those interested in this branch.

# Society Reports.

## AMERICAN THERAPEUTIC SOCIETY.

*Annual Meeting Held at Washington, D. C., May 5 and 6, 1913.*

(Special Report to the MEDICAL RECORD.)

DR. NOBLE P. BARNES OF WASHINGTON, PRESIDENT, IN THE CHAIR.

**President's Address.**—Dr. NOBLE P. BARNES of Washington, after treating of recent advances in therapeutics, spoke of the medical needs of the day, especially the need of a properly limited materia medica with a rational scientific classification for the use of lecturers, examiners and students. Many students were so confused in the study of pharmacology, so discouraged in memorizing the mass of details, that they failed to collect and retain the wheat and in due time became drug nihilists. If we would treat and practice only with the absolutely proven drugs, materia medica and therapeutics would be placed upon a sound and rational basis. Such a work should include only indispensable drugs and, so far as practicable, only those that had been assayed chemically or tested physiologically. The accurate knowledge gained from the study and use of these drugs would soon restrict the multitude of recognized and unrecognized remedies, give better control and better quality to these remedies, and enable the student to master everything from solubility to incompatibility, everything from methods of administration to variance in action.

**The Absurdities and the Commercialism of the Proposed Ninth Decennial Revision of the United States Pharmacopeia.**—Dr. OLIVER T. OSBORNE of New Haven said that among the articles that should have no place in the new Pharmacopeia were drugs having no therapeutic value, like lemon peel and saffron; metals and chemicals of little or no drug value, like aluminum hydrate and uranium nitrate; drugs not needed or whose effects could better be obtained from other drugs already official, like anthemis, cimicifuga, yerba santa, gambir, cottonroot bark, prickly ash, sarsaparilla, leptandra, etc.; preparations inferior to others, like fluid extract of digitalis (tincture better), fluid extract of gentian, fluid extract of cinchona; mixtures and compounds, like Basham's mixture, and elixir adjuvans; drugs that could not be standardized, like lemon peel. It was also unnecessary to include the parent substance just because it was desired to include a derivative, for example, the spices because it was desired to include their volatile oils.

Dr. HARVEY W. WILEY of Washington, D. C., said that no doubt some of Dr. Osborne's criticisms were justified, but there was a great difference of opinion upon this point among medical men. If 15,000 prescriptions were collected and it was found that one particular ingredient appeared in a considerable number of them, it seemed reasonable to conclude that the ingredient had some therapeutic value. Some of these humble drugs might yet become the headstone of the concern. Even if a plebeian were invited to the feast it would not hurt the others; the rest would be none the less good. Dr. Osborne had done much for the Pharmacopeia; it was a much better book than it would have been had he not been a member of the Committee. But it would be found to be a good book in spite of any defects that it might have.

Dr. OSBORNE did not think the 15,000 prescriptions a good test. The frequency with which a drug was used was no test as to its value.

**The Treatment of Diabetes in Pregnancy.**—Dr. REYNOLD WEBB WILCOX of New York said that if hydramnios existed, or the amount of glucose was excessive and uninfluenced by treatment, or the loss of flesh and strength was marked and, absolutely, if the fetus was dead, the uterus should be emptied at once. The viability of the child was usually problematical. A diabetic woman should not marry, or, if married, should not be allowed to become pregnant. If a pregnant woman became diabetic, the dangers of labor were increased, not only from impaired vitality and lessened resistance to infection, but because in severe diabetes a dead and even macerated child might result, or if the disease was mild, one of inordinate size. By successive pregnancies a curable might be converted into an incurable diabetes. Each patient should be carefully studied, and the procedure adopted that was justified by the condition of the patient and the persistence of the glycosuria. A case was cited in illustration.

Dr. ALEXANDER D BLACKLADER of Montreal, Canada, related two cases of diabetes of pregnancy: in one there had been no return of the glycosuria after term: the other had gone on to confirmed diabetes.

Dr. ROBERT T. MORRIS of New York said that many cases of glycosuria were due to pancreatitis and consequent squeezing of the islands of Langerhans caused by the effects of bacteria escaping from the duodenum. As soon as the pancreatitis was relieved, the glycosuria disappeared. The indication was to do away with infection if possible.

Dr. J. J. KINYOUN of Washington, D. C., said that in 200 autopsies at the tuberculosis hospital he had noted changes in the pancreas with squeezing of the islands of Langerhans in a considerable proportion of cases. Only in rare instances, however, had the patients given a history of diabetes.

Dr. OSBORNE of New Haven suggested that, according to good authority, uranium nitrate was a poison, particularly to the kidneys, and in his opinion it had no therapeutic value commensurate with its dangers.

Dr. WILCOX said that any danger there might be could be obviated by frequent examinations of the urine.

**The Treatment of Arteriosclerosis.**—Dr. LOUIS F. BISHOP of New York read this paper. Arteriosclerosis was the reaction of the individual to the proteins that caused the disease. It set in when something occurred in the individual to make him more susceptible to the disease. Accordingly, he had adopted the "few protein diet." All eggs, fish, meats, and soup, were excluded. Cheese was allowed as furnishing protein in a safe form, and later chicken was added tentatively. An ounce of castor oil was ordered every forty-eight hours for three doses, then another dose at the end of the week, and later a dose not less than once a month. Nitroglycerin was the great symptomatic remedy for all emergencies. Exercise and out-of-door life were essential. For the cure of the arteriosclerosis, the underlying causes should be removed, and among these mental stress was important.

Dr. J. MADISON TAYLOR of Philadelphia spoke of the importance of an early recognition of the disease. It was fortunate in some cases if the individual had some other form of breakdown, as then the arteriosclerosis might be recognized and treated in its incipient stages.

Dr. EDWARD D. FISHER of New York said that alcohol, over-eating, gout, etc., were only predisposing causes. Laboring men were especially susceptible to arteriosclerosis, but as a rule they were neither excessive eaters nor drinkers. But they were hard workers, and work and heredity were important factors in the etiology. Each one was given vessels good for a certain time under proper conditions; if he used them conservatively he might live out his allotted time; if he did not his life was shortened accordingly. A proper diet, open air exercise, a quiet life, and freedom from worry and care—all of these were important factors in the treatment. Diet should be regulated to meet the needs of each individual patient. It should not be too strict where the patient was weak, or when his occupation demanded great exertion. General principles of treatment should be broken as conditions necessitated.

Dr. MORRIS suggested that the response of the blood pressure to certain proteins might be utilized as a test for arteriosclerosis in its early stages.

Dr. BLACKADER said that while he could not help agreeing to a certain extent with Dr. Fisher as to heredity, it was a depressing view. He preferred to think that some individuals were more susceptible to certain poisons than others. Some children, for example, were poisoned by eggs. Such substances should be excluded from the diet of those susceptible to hardening of the arteries. Until the factors causing the disease were removed, treatment would prove unavailing. Treatment should be directed to the undue susceptibility of the tissues.

Dr. OSBORNE emphasized the danger of changing the diet too suddenly or radically. He had obtained good results from the use of potassium iodide.

Dr. SPENDER L. DAWES of Albany suggested that the salines or calomel were preferable to castor oil. He had found the after-constipating effect of the oil a decided objection to its use.

Dr. GEORGE HERBERT EVANS of San Francisco said that he was impressed with the frequency with which syphilis occurred in arteriosclerotic patients. Cases ascribed to overwork, overeating, etc., were not infrequently the results of syphilis. It should be eliminated as the causative factor treatment was instituted.

Dr. F. M. POTTENGER of Los Angeles said that typhoid fever was sometimes followed by hardening of the arteries. Some hardening was usually present in tuberculous patients after two years.

Dr. Kinyoun said that in the postmortem examination of tuberculous subjects he had found marked arterial changes in a considerable proportion of cases. They antedated the tuberculosis, however, and must be due to other causes.

Dr. Bishop said that in his experience no cause could be assigned in about nine-tenths of the cases. In the remaining tenth the cause was usually alcohol, syphilis, or one of the other factors ordinarily cited. Too much attention was paid to the advanced cases and not enough to the insidious cases, although the later were the most important. He did not believe in excluding all protein from the diet. Effort should be made to ascertain the particular protein causing the trouble and eliminate it. It was revealed by the special craving of the patient for it when it was withdrawn. He cited a case in illustration. As to salines, table salt and all salts were unfriendly to arteriosclerosis.

**Antityphoid Inoculations.**—Dr. F. F. Russel, Med. Corp, U. S. A., summarized the effects of antityphoid vaccination up to the close of the year 1912 in the U. S. Army, both at home and abroad, among the officers and enlisted men. During the last four years approximately 200,000 persons had been immunized, without fatalities or untoward results. The custom at present was to revaccinate at the beginning of each four year period of enlistment, not because all immunity had disappeared, but because it seemed unwise to trust to anything than the maximum immunity obtainable. Antityphoid vaccination had been a pronounced success in the naval and military services, in hospitals, schools, institutions, among pleasure seekers, and in contractors, especially those located on water-sheds; in fact, everywhere in civil and military life where it had been used. Its more general use, especially among the young, was advisable. The fact that it occasionally failed to afford complete protection was not a valid objection to its use, but rather an indication for its repetition, at intervals to be determined upon in the future. Its extended use would hasten the time when typhoid fever would become a negligible factor in our public health problems.

**Current Developments and Problems in Vaccine Therapy.**—Dr. A. Parker Hitchens of Philadelphia suggested that the limitations which at present characterized the treatment of infections by vaccines were not permanent and that further investigation would result in a wide extension of their field. After discussing autoserotherapy, regional infections, anaërobic bacteria, the preparation of vaccines, etc., the writer said that mixed vaccines were often of service in the common acute, subacute and chronic catarrhal inflammations of the respiratory mucous membranes. The most promising field of study for the laboratory man today was the relation of the infecting bacteria to the blood and lymph supply,—the possibility of bringing the antibodies formed as a result of the injection into contact with the infecting bacteria.

Dr. Osborne inquired with regard to the value of stock antistreptococcic and antistaphylococcic vaccines in pneumonia and urethritis.

Dr. F. E. Stewart of Philadelphia suggested that some of the good results reported after antityphoid inoculation might be due, in part at least, to modern hygienic methods, screening from flies, etc.

Dr. Kinyoun said that his experience with mixed vaccines had been unsatisfactory. The secret of success lay in determining the cause of infection in each instance as nearly as possible, and acting accordingly.

Dr. Hitchins said that there was authority for the statement that vaccines were of value in pneumonia. They failed not infrequently, however, and it was impossible to predict when this would occur. A hodge-podge or shot-gun vaccine could not be condemned too severely; but in some cases of mixed infection the indications were clear, and mixed vaccines could be used to advantage.

Dr. Osborne asked Dr. Hitchens whether he had had any experience with anti-rheumatic vaccination.

Dr. Hitchins replied that he had had none. If, however, rheumatism was caused by a specific germ and the antibodies formed as a result of the injection could be brought into contact with the bacteria, he believed that clinical results would be obtained.

**Neosalvarsan in Syphilis of the Nervous System.**—Dr. Edward D. Fisher of New York. This comparatively new remedy was an important aid in the treatment of syphilis of the nervous system, both in the early manifestations and in the so-called parasyphilitic forms of tabes and general paresis. It should be remembered, however, that after definite pathological changes had taken place neosalvarsan could have no effect beyond preventing the extension of the disease by the still active agents. Too much emphasis therefore could not be placed upon the importance of early diagnosis.

Dr. Kinyoun said that during the last two and a half years he had examined a number of tuberculous patients for syphilis, and had found a strong positive Wassermann reaction in about thirty per cent. of cases.

Dr. Fisher said that use of a new remedy like this so easy of administration was liable to be carried to extremes, and on this account he thought it well to sound a note of warning as to the small proportion of cases in which a cure could be expected after a certain point had been reached.

**Copper Chemotherapy with Special Reference to the Double Tartrate of Copper Oxide and Sodium.**—Dr. Wilfred M. Barton of Washington, D. C., said that the only compound of copper at present available for intravenous injection was a double salt such as the double tartrate of copper oxide and sodium. The minimum fatal dose in terms CuO was, for frogs (weight 30 gms.) 0.0005 gm., for rabbits (weight 1 kilogram) 0.0159 gm., for dogs (weight 3 kilos) 0.15 gm. The chief effects of poisonous doses were a primary stimulation and subsequent paralysis of the peripheral terminations of the motor nerves, involuntary muscle, and heart muscle. The solution of the double salt was powerfully antiseptic. One half c.c. of the solution of the double salt representing 0.0026 gm. of CuO could be injected intravenously into a rabbit weighing two pounds without subjective or objective symptoms.

**The Application of Some Muscular Tissue Adapted to Physiological Standardization.**—Dr. F. E. Stewart of Philadelphia, in collaboration with Paul S. Pottenger of Philadelphia, presented this paper. It was a preliminary report describing experiments for the standardization of fluid extract of ergot by measuring its physiological action upon non-striated muscular tissue. The muscular tissue of uteri from non-pregnant guinea pigs was used. The technique was explained in detail and the results shown upon charts.

**The Treatment of Pneumonia with Mercury and Sulphur Internally.**—Dr. Louis Kolipinski of Washington, D. C., had used teaspoonful doses of the following mixture: corrosive sublimate, ½ grain; precipitated sulphur, 2 drams; boiling water, 4 ounces. It was administered every two hours by day and three hours by night, for two or three days. When the thirty-second dose did not produce catharsis, half an ounce of castor oil was administered. When the evening temperature was normal and recovery began the mixture was given for several days at four to six hour intervals. Should no change in the symptoms occur by the end of the third or fourth day, the treatment had failed, and the cause would usually be found in a complication not previously detected or an error in diagnosis. The method had given good results in Dr. Kolipinski's hands.

**Recent Improvements in the Quinine Treatment of Lobar and Lobular Pneumonia.**— Dr. S. Solis-Cohen of Philadelphia said that apart from fresh air, dependence had been placed upon the following measures: First, the effective use of the very soluble hydrochloride of quinine and urea in 50 per cent. solution by intramuscular injection; second, the hypodermic injection of cocaine hydrochloride solution or an extract of the posterior lobe of the pituitary body for the maintenance of blood pressure; third, in cases of prolonged fever, delayed resolution, or tardy convalescence, the injection of bacterins (pneumococcus or "mixed" vaccines, personal or stock). The method of giving the treatment was described in detail. No invariable maximum limit had been fixed for the number of injections of quinine or of pituitary liquid, but it was not considered wise to continue the three-hourly injections beyond the first twenty-four, and in only a few cases had it been necessary to use them as long as this. Other measures were employed according to indication. In Dr. Solis Cohen's hands the treatment had reduced the mortality in the severe cases one-half, and the relief afforded in all cases was remarkable.

Dr. Riley questioned the use of the bichloride of mercury, as suggested by Dr. Kolipinski, particularly in old people, and in those suffering from renal disease. The method had only been employed to a limited extent, and further investigation would be necessary before arriving at a conclusion as to its value. Statistics as to the prevalence of pneumonia were somewhat unreliable and he was inclined to doubt whether there had been any notable increase in the proportionate number of cases as suggested by Dr. Solis Cohen. Quinine had been found to be a dangerous drug for hypodermic use. It had given rise to tetanus in a number of cases, even when given carefully and under antiseptic precautions. In explanation it

had been suggested that the tetanus spores existing in the patient otherwise innocuous, were aroused to activity by the injection. Anyway the procedure had not been found free from danger, and it was well to bear this in mind in deciding upon the injection treatment. He had obtained good results from the use of large doses of digitalis. Of late he had employed acetylsalicylic acid in combination with it.

Dr. Osborne said that he did not know of any one "best treatment" for pneumonia. The agents and methods to be employed depended upon the conditions present, and the treatment should always be adapted to meet the needs of the individual patient. Whether or not digitalis should be employed depended upon circumstances. He was opposed to employing it in every case as a routine practice. Its injudicious use had done serious harm in more than one case of pneumonia. When properly given, it acted perfectly. Quinine raised the blood pressure but its use was followed by a secondary reaction, and he was averse to giving a drug of this kind if he could help it. The use of the blood pressure apparatus in private practice had its drawbacks. Among other things it disturbed the patient and made him nervous, and it was doubtful whether the information obtained by its use made up for the disadvantages. About all it was necessary to know could be learned with the finger.

Dr. Albert E. Roussel of Philadelphia emphasized the importance of watching the blood pressure rather than the temperature in pneumonia. A pulse of 130 to 140 meant a failing heart and low blood pressure, and the chief indication was to raise the pressure. He had considerable faith in digitalis in these cases. If it failed, pituitary extract or some of the other drugs that had been mentioned could be used. He had recently used the treatment described by Dr. Solis Cohen in five cases of pneumonia with good results. The measures to be employed depended upon the conditions present in each individual case.

Dr. Evans said that the results obtained in the first case that he had treated by Dr. Solis Cohen's method were so satisfactory that he had subsequently employed it in others. The pituitary liquid gave a prompt increase in blood pressure. There was, however, no one successful treatment for pneumonia. The majority of cases went steadily on to one termination or the other in spite of any treatment that might be employed.

Dr. Pottenger spoke of delayed resolution in pneumonia. The examination of tuberculous subjects had led him to believe that the time required for resolution was much longer than was ordinarily supposed. If the disease was due to bacterial invasion and the proper vaccine could be used there should be a shortening in the length of the attack and in the time required for resolution. Success in treatment was chiefly due to individualization and the observance of minutiæ.

Dr. Kolipinski said that in the combination suggested by him the corrosive sublimate did not seem to act as a poison. He had given large doses of it without any injurious effect.

Dr. Morris suggested that the invasion of the grippe bacillus might account in part for the increase in the number of cases of pneumonia observed in recent years. Whatever method of treatment was employed, it should be given with confidence.

Dr. Solis-Cohen said that he had not met with a case of tetanus in over 5,000, possibly 10,000, injections. The element of confidence was undoubtedly of the highest importance. He believed that the increased mortality of the disease in later years was partly due to the wave of therapeutic nihilism that had spread over the world. Many of the patients might have recovered if they had been under the care of someone who had confidence in his own treatment. Under the treatment he had described defervescence usually occurred by lysis rather than by crisis. This, and the great relief afforded by the quinine without corresponding change in the pulmonary condition indicated that the treatment was antitoxic in character. It would seem as though pneumonia poison and the quinine counteracted or neutralized each other. In closing, he emphasized the fact that there was no treatment for all cases; and in individualization lay the key to success.

**Pulmonary Syphilis, with Report of a Case Promptly Responding to Specific Treatment.**—Dr. Albert E. Roussel of Philadelphia, after dealing with the distinctive features of the disease, and particularly the diagnosis from pulmonary tuberculosis related a case which had come under his observation. Female, colored, single, 24, admitted January 31, 1913; discharged April 1, 1913. Family history negative as to tuberculosis. Six weeks before admission there had appeared chills, fever, drenching sweats, cough with offensive muco-purulent expectoration and rapid loss of weight. Temperature for weeks reached 106°, and occasionally it would fall as low as 96.2°. Sputum negative. Percussion showed scattered but distinct areas of dullness over both lungs, particularly at right base; both apices were hyper-resonant, free from rales, and the seat of supplementary or puerile breathing; breathing was bronchovesicular and bronchial over the dull areas; vocal resonance increased; subcrepitant rales. Wassermann test positive. In March a gumma developed and a history of syphilis was obtained. Under vigorous treatment with mercurials and potassium iodide there was almost immediate improvement and rapid recovery.

Dr. Thomas E. Satterthwaite of New York said that at various times he had tried to bring up a discussion upon this subject. At first he could hardly get anyone to believe that there was such a disease as syphilis of the lungs. The cases were thought to be instances of pulmonary tuberculosis. The chief difficulty lay in the differential diagnosis. The rapid improvement under antisyphilitic treatment and a positive blood reaction were significant aids.

Dr. Pottenger spoke of the difficulty in making a correct diagnosis. The absence of tubercle bacilli was not conclusive evidence. Some tuberculous patients but rarely presented bacilli in the sputum. He cited a case in illustration. Whenever he suspected syphilis, he employed antisyphilitic treatment in addition to antituberculous treatment.

Dr. Osborne spoke of the value of potassium iodide from a diagnostic standpoint. It was contraindicated in many cases of pulmonary tuberculosis. If, however, there were no tubercle bacilli in the sputum it could be given and if, afterward, bacilli were found, the diagnosis was clear. The iodide seemed to increase the number of bacilli thrown out in the sputum.

Dr. Evans said that there was yet another affection that should be taken into consideration in making the differential diagnosis. He referred to lymphosarcoma and cited a case in illustration.

Dr. Morris related a case that was first diagnosed as tuberculosis of the lungs, then pulmonary syphilis, and which finally turned out to be a case of blastomycosis.

Dr. Pottenger said that he had used potassium iodide in many cases of pulmonary tuberculosis with beneficial effect.

Dr. Osborne said that according to his experience the iodide was liable to stir up the pulmonary condition in incipient cases and make matters worse. In chronic cases the effect was somewhat similar, but it enabled the patient to expel the bacilli.

**A Case of Influenzal Meningitis in the Adult Complicated by Pneumonia; Recovery.**—Dr. Thomas E. Satterthwaite of New York said the case was somewhat unusual in that it presented three types of grippe infection, the respiratory, the gastrointestinal, and the nervous. It was, so far as Dr. Satterthwaite knew, the only recorded instance of full recovery in influenzal meningitis. Male, 25, normal physique. There had been the usual symptoms of a mild influenza. When first seen he was unconscious, pupils irregularly dilated and irresponsive, breathing rapid and labored. Temperature 103.5°, pulse 138, respirations 26. Under bromides consciousness returned but there was restlessness and twitching of right leg and facial muscles. On the second day the signs of pneumonia were easily recognizable; temp. 105°, pulse 120, resp. 40; 300 grains of bromides were given during the day. On the third day there were nausea and vomiting, and on the fourth, vomiting of dark fluid and blood. Calomel 1 grain in divided doses; urotropin 10 grains in a pint of water, 30 grains in all during the day; strychnine sulphate 1/60 grain every four hours. Sixth day, low muttering delirium; bromides were given freely, urotropin suspended. Seventh day, camphor 3 grains in aseptic oil, hypodermically, every six hours. Strychnine continued. Temperature had fallen to 99°, pulse to 84, and respirations to 24. Tenth day, camphor suspended. From this time recovery was rapid and uneventful.

Dr. Stewart commented upon the infectious nature of the case. Some authorities recommended the use of camphorated water instead of the oil. He would like to see more study along this line.

Dr. H. B. Anderson of Toronto reported two cases of meningitis due to influenza. 1. Student had suffered for some years with ear trouble, but of late it had been quiescent. He was taken down with grippe and soon developed violent headache, restlessness, and delirium, and died after a few days. 2. Woman, 45; taken down with influenza of the ordinary type; while improving there suddenly developed marked symptoms indicative of meningitis, and she died after a few days. Lumbar puncture had failed to disclose the organism.

**Climatic Conditions in California and Their Influence**

**in the Treatment of Tuberculosis.**—Dr. George Herbert Evans of San Francisco, after describing the advantages of the California climate in respect to the treatment of tuberculosis, the writer pointed out that provision for adequate medical care should be a first consideration in sending patients away from home. The selection of a suitable climate, based upon a careful consideration of the needs of the individual case; a proper correlation of rest and exercise; attention to nutrition; tuberculin,—all of these were important factors in therapy. No theoretical argument, however, as to climate could weigh for a moment against the abundant testimony of successful treatment by men trained in the handling of these patients, irrespective of the locality in which they lived.

**What Does Treatment Offer to the Advanced Tuberculous Patient.**—Dr. Francis M. Pottenger of Los Angeles, after describing the clinical features of the disease in different stages, the paper dealt with treatment including the advantages of sanatorium treatment for chronic cases. A careful régime, suited to the individual and persistently carried out, was an important factor in the treatment. Failure often came from giving up too soon. A case was not hopeless so long as the patient could digest and assimilate food and the heart was capable of performing its functions. Early diagnosis and treatment were, however, of the utmost importance. The early tubercle was comparatively easy to heal but the disease became progressively more difficut to handle as it advanced.

Dr. Spencer L. Dawes of Albany emphasized the point that the patient, wherever he might be, should have careful, individual, medical attention. If one had to choose between care without climate, and climate without care, he would do well to choose care without climate.

Dr. Stewart agreed with the previous speaker upon this point. He had visited Dr. Pottenger's sanatorium, and could testify that much of his abundant success was due to the careful personal attention that he gave the patients individually.

Dr. Osborne said that one way to lessen the number of chronic cases was to secure an earlier recognition and treatment of the acute cases. Every patient recovering from pneumonia, typhoid and other diseases, and even those suffering from slight debility, should be carefully watched.

Dr. J. W. Chappell of Washington, D. C., said that tuberculous patients should never be given up. Recovery had occurred in cases that seemed absolutely hopeless. The physician could learn a lesson from the way the patients themselves held on to life. As to incipient cases, whenever he had a patient who was running down steadily without any known cause he strongly suspected tuberculosis.

Dr. John Blake White of New York emphasized the importance of early diagnosis and treatment.

Dr. Kinyoun said that any form of treatment that failed to restore the patient to his former physical condition fell short; for example, one that only enabled the patient to live and do light work in the place to which he had been sent, but not to return home, was a mere apology for a cure.

Dr. Morris said that surgeons often sent some of their patients (with tuberculosis of the knee for example) to an altitude of three thousand or four thousand feet and then to the seashore, and then to the mountains again, keeping this up for the beneficial effect upon the blood and circulation, but he had not heard that the method had been adopted or discussed by medical men. He requested information upon this point.

Dr. Pottenger said that the method was impracticable in pulmonary cases. The only salvation for these people was to find a physician in whom they had confidence and to stick to him. Changing and moving around from place to place was fatal.

**The Medical Treatment of Cholelithiasis.**—Dr. H. B. Anderson of Toronto said that while surgical procedure was frequently the best, and often the only, means of offering a chance of relief, its advocacy based on certainty of cure and assurance of non-recurrence was unwarranted. The object in view could often be obtained by non-operative treatment, especially in early and mild cases, and particularly after first attacks before serious local damage had been done by the infection. Medical treatment should be given when the patient's physical condition did not warrant operation, when operation was refused, as a preliminary to operation, and in all cases after operation to prevent reinfection and recurrence if possible.

Dr. Roessel cited an instance in which failure to provide proper post-operative medical care had been attended with unfavorable results.

Dr. Stewart suggested the treatment of cholelithiasis by bacterial vaccines.

**Orthotherapy; The Power Which Correct Posture, Organic Adjustments, and Mobility Exert upon Health and Its Recovery.**—Dr. John Madison Taylor of Philadelphia in this paper discussed the deformities caused by posture and costume and the ways in which they impaired the health. A conspicuous stoop, a lateral twist, a sagging waist, a hollow chest, etc., were often looked upon as merely evidences of bad taste or as finger marks of fate. Sometimes they were imitated and even exaggerated. They have a grave significance, however, when it was realized that they were capable of inducing degenerative changes in nerve centers or conduction-paths, morbid slackness in tissues, impaired nutrition in important structures, etc., all tending to produce even worse conditions in vital organs.

**Treatment of Splanchnoptosis, with Report of Cases.**—Dr. Elmer B. Freeman of Baltimore said that cases without adhesions, or with loose adhesions, could often be relieved by proper medical treatment. Cases with firm adhesions which caused a definite kinking or constriction of any part of the gastro-intestinal tract, with symptoms of chronic obstruction, required surgical intervention. Among the medical measures suggested in the paper were, exercises to increase the capacity of the abdomen and develop strong abdominal muscles, improvement of nutrition, the correction of gastric disturbance, the removal of constipation, and an increase in the nervous and muscular tone. Forced feeding, rest in bed, and the use of a suitable support might be required. The author preferred the corset recommended by Dr. Gallant some years ago.

Dr. A. Ernest Gallant of New York discussed the mechanical treatment of visceroptosis, and described the support referred to by Dr. Freeman.

Dr. Zueblin of Baltimore discussed the etiology, referring particularly to the importance of heredity as a factor. The indications were to remove the cause of the displacement, if possible, and furnish a support for the sagging organs. Effort should be made to improve the muscular tone by exercise, posture, massage, etc. Disturbances of the stomach and other organs should be corrected, if possible. Attempt should be made to improve the general nutrition.

**The Effect of Scarlet Red in the Treatment of Ulcer of the Stomach and Duodenum.**—Dr. Julius Friedenwald of Baltimore, in collaboration with Dr. T. F. Leitz of Baltimore, presented this paper. Scarlet red was a useful adjuvant in the treatment of gastric ulcer. While it could not replace the usual forms of treatment, when administered with them it increased the beneficial effect. It was particularly serviceable in the treatment of ambulatory cases. It did not interfere with the administration of other remedies, and indeed the effect of its combination with the alkalies or belladonna was at times most beneficial.

Dr. W. Wayne Babcock of Philadelphia spoke of seventeen cases of gastric ulcer with perforation that had come under his observation. In sixteen of them there had been no symptoms prior to perforation. Treatment was surgical. All of the patients recovered.

Dr. Morris discussed the surgical treatment of the cases with perforations.

Dr. Freeman had used the scarlet red in one instance. The spray was used over a period of eight days, during which the patient improved rapidly. The pain subsided and the symptoms disappeared.

Dr. Gallant spoke of the treatment from a surgical standpoint.

Dr. Friedenwald said that the thirty-seven cases treated with scarlet red were subacute cases. It was not a specific but it was a useful adjuvant.

**Newer Notes on the Subject of Peritoneal Adhesions.**—Dr. Robert T. Morris of New York presented this paper, which dealt with cobweb adhesions in the upper part of the abdomen, insidious in character. In many cases they were undoubtedly of toxic origin. Bacteria penetrated the wall of the bowel; as a result of irritation, the endothelium was shed and the lymph that exuded gave rise to more or less permanent adhesions. In some cases there was also hyperplasia of connective tissue which gave rise to firmer adhesions. The treatment of these insidious cases was chiefly medical.

Dr. Babcock suggested that there might be two kinds of these adhesions, one due to ordinary causes and the other to toxic influences. It was worthy of note that the old type of post-surgical adhesions were now but rarely seen.

Dr. Morris suggested that too much attention had formerly been given to the toilet of the peritoneum.

**The Dangers and Disadvantages of Spinal Anesthesia.**—Dr. W. Wayne Babcock of Philadelphia presented a paper based upon between 4,000 and 5,000 injections. The conclusions reached were in part as follows: Ether for general use remained the standard anesthetic in spite of its many disadvantages; the newer methods of anesthesia had a use restricted to those who had particularly qualified themselves; spinal anesthesia was dangerous in myocardial degeneration, particularly with obesity, and it should be used with care and avoided in grave shock and hypotonicity of the vaso-motor system; severe headache and abducens palsy might follow the use of improperly prepared solutions or a faulty method; excessive dosage, high point of injection, improper position or handling of the patient, might be followed by respiratory or circulatory arrest. If the patient could not be watched constantly for an hour after the injection, or if the operator was not familiar with the technique or was unprepared to meet emergencies, spinal anesthesia should not be used.

**Prolonged Precipitate Parturition Due to Disengagement of the Disproportionate Head.**—Dr. A. Ernest Gallant of New York related a case to illustrate the condition. Everything appeared to be all right but the head repeatedly came down and went back again and there was little, if any, actual progress toward delivery. When the baby did come, it came all at once. The delay was due to the disproportion between the size of the small head and the inlet. The remedy was to press the head down either by pressure on the fundus or otherwise. Several methods of managing the condition were described.

**Officers.**—The following officers were elected for the year 1913-1914: *President*, Dr. Howard Van Rensselaer, Albany; *First Vice-President*, Dr. Robert T. Morris, New York; *Second Vice-President*, Dr. Francis M. Pottenger, Los Angeles; *Third Vice-President*, Dr. J. Madison Taylor, New York; *Council*, Drs. Frederic H. Gerrish, Portland, Me.; John Blake White, New York; Clarence John Blake, Boston; Thomas E. Satterthwaite, New York; Francis P. Morgan, Washington, D. C.; D. Olin Leech, Washington, D. C.; Noble P. Barnes, Washington, D. C.; Edward D. Fisher, New York; A. Ernest Gallant, New York; J. Madison Taylor, Philadelphia; James C. Wilson, Philadelphia; Alexander D. Blackader, Montreal; Reynold Webb Wilcox, New York; Spencer L. Dawes, Albany; Lewis H. Taylor, Washington, D. C.

## NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

*Stated Meeting, Held January 3, 1913.*

Dr. George Woolsey, Chairman pro tem.

**Fracture of the Femur, Treated by Steinmann's Extension Method; Six Cases.**—Dr. John C. A. Gerster presented these cases. Two were pertrochanteric fractures of the neck; one occurred in a man, thirty years old, and showed a perfect result with no shortening, no displacement of the fragments, and good function. The other occurred in a man sixty-five years of age; the result was good, but there was not what might be called a perfect result owing to the premature discontinuance of extension. There was shortening of three-quarters of an inch and a slight coxa vera; flexion and extension were fair; internal rotation was limited, but the external rotation was good. Three were oblique fractures of the shaft in children aged five, nine, and eleven years, respectively. There occurred no shortening and there was perfect function in each case. The boy of five years was nailed on the twenty-first day and six pounds traction was applied. There was absolutely no interference with the joint function and to-day he was running around as well as ever. Dr. Gerster presented another case of a girl, seven years of age, with a supracondyloid fracture, one inch above the epiphyseal line, probably the result of direct violence. In this case there was no shortening and he obtained perfect function.

**Fracture of the Femur, Treated by Steinmann's Extension Method.**—Dr. Seth M. Milliken presented a man, fifty years of age, who was admitted to the Policlinic Hospital by ambulance on November 22. He had fallen in front of a car which ran over his right foot, thereby causing a traumatic amputation through the tarsus. On admission there was much swelling around the upper end of the right thigh and a shortening, on this first day, of one and a half inches. This shortening subsequently increased to two and a half inches. Steinmann's nail was introduced by Dr. Gerster three days after admission and an extension weight of 14 pounds applied; this was later increased to 20 pounds. The diagnosis had been made of a fracture through the shaft of the femur three or four inches below the trochanter. The traction gave him some pain in the hip at night, but during the day he was very comfortable. He had no elevation of temperature. The nail was removed on the twenty-first day. He made an uninterrupted convalescence. There was to-day but three-quarters of an inch shortening. The *x*-ray of the fracture was shown. There was now a passive flexion of 45 degrees. The patient entered the hospital six weeks ago. Dr. Milliken presented a second case that had been admitted to the Lincoln Hospital September 22. The patient tripped on a curbstone and sustained a fracture. A plaster-of-Paris cast was placed on the limb and the *x*-ray picture taken. The patient suffered greatly from asthma and emphysema, had a mitral insufficiency, and was in such a condition that the cast had to be removed. The fragments overlapped and there was one and three-quarters of an inch shortening. Because of the marked evert position of the limb the case seemed to be practically hopeless. A weight of 25 pounds was applied after the patient had been in bed six weeks. The fracture was about five inches below the tip of the great trochanter; the upper fragment was forward and overlapped about one and a half inches. The nail was removed on the twentieth day. A weight of 30 pounds was applied and the patient felt perfectly comfortable. To-day the patient weighed 270 pounds. The nail holes closed in five days and there was now about one-quarter of an inch shortening.

**Fracture of the Femur.**—Dr. Franz J. A. Torek presented an *x*-ray picture of a fracture of the femur just above the knee joint. The epiphyseal end was at a marked angle to the femur. There was a large triangulation between the upper and lower fragments. The nail, one of his own construction, was passed through the upper end of the tibia. There was an immense hematoma and Steinmann warned against placing a nail through hematomas. Extension was on for four and a half weeks. He found at the end of that time there was some mobility but no displacement. He then applied a plaster-of-Paris cast and kept it on until the middle of the seventh week. The *x*-ray picture of his result was shown. There was a large amount of callus. The man had been perfectly comfortable from the beginning to the end of the treatment and the results were good.

**Intussusception in an Adult; Resection; Recovery.**—Dr. Emily Dunning Barringer reported this case which came under her care in her service at the New York Infirmary in June, 1912. The patient had previously been admitted to the medical ward with the following history: She was sixty-three years of age, a widow, and gave a negative family history. She had been rather delicate in childhood, but since adolescence had always been well and strong until her present illness. Her menstrual history was normal and her menopause occurred at the age of forty-four. Her obstetric history was normal. She had had two children. For several years past the patient had suffered somewhat from shortness of breath and constipation, the bowels moving on an average of three to four times a week. There had been no history of diarrhea, jaundice, or goiter symptoms. She had been a hard working woman, a laundress, and had continued to work up to the time of her admission to the hospital. Her present illness began four months ago when she noticed that she had abdominal distress which she thought was due to the poor food she had been getting and, since that time, she had suffered from occasional cramps which, as she expressed it, "go across the upper abdomen." For the past two days they had been coming more frequently, were only fairly severe, and lasted a very short time. She relieved herself of the pain by pressure and rubbing the abdomen from above down. There had been no vomiting until two nights ago after a dose of calomel. Between these attacks of pain the patient would be entirely comfortable. She had been held in the medical ward for observation and diagnosis and the usual routine examinations had been carried out. The stomach analysis showed a normal condition. The blood examination showed a normal leucocytic count and the urine picture was negative. Examination of the heart and lungs proved negative. The abdominal findings had been negative for enlargement of the liver, spleen, and kidney, and no tumor masses had been observed. The vaginal and rectal examinations also proved negative. Constipation, however, had become almost complete and high medicated enemata failed to bring about a satisfactory fecal return. The temperature had ranged between 99° and 100° and the pulse between 90° and 100°. Vomiting had become a troublesome symptom; she vomited large quantities of fluid which was yel-

low or dark brown in color. On June 14, the patient suddenly became alarmingly worse, having an area of tenderness over the right inguinal region, frequent attacks of intense intestinal pain, and almost incessant vomiting. Realizing that some acute surgical situation had arisen, the patient was transferred to Dr. Barringer's service. When Dr. Barringer first saw the patient she found her to be an old woman, thin and wiry, with skin lying in loose folds suggestive of a recent considerable loss of flesh. She was obviously in great pain, though the pain came in paroxysms when the suffering seemed to be intense; in the interval she seemed to rest, being in a mildly stupid condition suggesting the toxic look of a beginning peritonitis. The abdomen was considerably distended and tympanitic and possibly slightly tender in the right inguinal region. No mass could be detected owing to the distension. During the paroxysm of pain coils of intestine stood out and visible peristalsis was quite apparent. The diagnosis of intestinal obstruction was made, but the cause was in doubt. Dr. Barringer ordered a high ox gall and turpentine enema, with absolutely no result. A rectal examination again was negative. She advised immediate operation, which the patient declined. At the end of six hours, when she was *in extremis*, with constant fecal vomiting, she consented. A median abdominal incision was made in the hypogastrium between the umbilicus and the symphysis and a gangrenous mass was found lying in the right inguinal region, obviously an intussusception in the lower part of the ileum. There were evidences of a beginning peritonitis. The patient's condition was so extreme that in spite of hypodermoclysis which was being administered it appeared doubtful whether the patient could live through the operation; therefore, an end to end anastomosis with the Murphy button was done, resecting the tumor mass; further exploration was made, the abdominal wound being closed as quickly as possible, allowing a small cigarette drain to remain. The patient was critically ill for twenty-four to thirty-six hours following the operation, but after the shock had passed convalescence was uneventful although somewhat slow, a certain amount of infection occurring at the site of the wound. This, however, healed satisfactorily, and she was discharged from the hospital in good condition, and was now in excellent health and spirits.

Dr. Howard Lilienthal said that these cases were exceedingly rare and that he had seen but two. One case promptly died; it was a dreadful case of gangrene. The other case was quite interesting. The patient was forty years old and had for many months suffered from symptoms of a mild intestinal obstruction. A mass could easily be felt in the upper abdomen and a diagnosis was made of a probable chronic intussusception. Monsel, an Australian surgeon, devised an operation which originally was intended for cases of this sort. This was the one employed by Dr. Lilienthal.

Dr. Frank J. A. Torek said that in adults the diagnosis of intussusception was quite difficult. He remembered one case that was sent into the hospital with the diagnosis of appendicitis and who got better in a few days; soon a recurrence took place and infiltration was noted in the ileocecal region. The patient again got better. The third attack occurred and a mass at the transverse colon was readily felt and a diagnosis of intussusception was easily made.

Dr. George Woolsey said he had had but one experience with intussusception occurring in an adult. These cases had been spoken of as not having symptoms similar to those found in children, that was, mucus and blood in the stools.

Dr. Barringer said that she saw the case only after the picture had been definitely shown.

**Overriding Fracture of the Femur; Open Reduction and Lane Plating; Non-Union; Removal of Plate and Introduction of Bone Graft from Tibia; Union.**—Dr. Walter M. Brickner demonstrated these cases:

Case I.—This patient was a young woman admitted in February, 1912, to Dr. Lilienthal's service at Mount Sinai Hospital with a six months old fracture of lower third of femur malunited with three inches of overriding, and considerable angulation. In spite of the marked contracture of the muscles Dr. Brickner succeeded by open operation in bringing the fragments into perfect alignment and good apposition. A Lane plate was applied with four steel screws, and then plaster dressing. Two months later slight bowing was noted and patient was put back to bed. In spite of subsequent treatment by massage and ambulatory splint, non-union persisted. Three and a half months after the first operation (which had been followed by primary union of the soft parts) Dr. Brickner re-opened the thigh and removed the plate, which had remained in place and the screws of which were not much loosened. Very little callus had formed. To excite bone production the operator cut an osteo-periosteal graft from the tibia of the same extremity, about three inches long by three-quarters of an inch wide, and in thickness extending almost into the medulla. This graft was then laid across the line of fracture along the outer side of the femur, the surface of which was freshened with a chisel. Periosteum and muscles were sewed over it and a plaster cast applied. Radiographs, taken at intervals thereafter, were exhibited, which showed the gradual bony fusion of the graft with the femur. The last radiograph, three months after the operation, showed no absorption whatever of the graft, which corresponds, as far as it goes, with MacEwen's contention that large bone grafts are not absorbed, as believed by Murphy and others. The operation was followed by solid union and excellent functional result, with shortening of only one-half inch.

Case II.—This patient was a lad about twenty years of age, whose case was a parallel to the first one, except that his fracture, in the midshaft of the femur, was a fresh one. He was admitted in April, 1912, to Mount Sinai Hospital, where, manual efforts at reduction failing, Dr. Lilienthal reduced the fracture by open operation and applied a Lane plate and a typical plaster dressing. A radiograph made a few weeks later, while the dressing was still in place, showed that in spite of the plate and the plaster there had developed marked forward angulation of the fragments. Seven weeks after the operation, careful examination revealed non-union. In June Dr. Brickner repeated in this case the same operation he had performed in the other. Here considerable callus was present, however, and no effort was made to overcome the angulation. In this case also solid union resulted, with but slight shortening and excellent function. Dr. Brickner remarked that in neither of these two cases, one a recent and the other an old fracture, had there been any infection or constitutional cause for non-union after the plating. He emphasized that the bone transplant was not used in any sense as a splint; it was not nailed or sutured to the bone nor placed in a trough, but merely held against the bone by suturing over it the muscles and periosteum. Its purpose was solely to excite osteogenesis at a place where this process had failed. Dr. Brickner said that the mere removal of the plates might have been sufficient to effect union. These cases were the first ones recorded, he believed, in which a bone graft was applied in this way.

**Ununited Fracture of Humerus in Obese Subject; Open Reduction and Lane Plating Under Local Anesthesia; Non-Union.**—Dr. Brickner reported this third case in which internal splinting was followed by non-union. The patient was a very obese man (350 pounds) who had been referred to the speaker for operation because of an ununited transverse fracture of the middle of the left humerus of one year's standing. There was no known cause for the non-union, except that the huge bulk of the man's short arm had evidently made immobilization impossible. The patient's obesity made him a likely candidate for post-operative pneumonia or other bad complication of a general anesthetic and he consented to undergo the operation under local anesthesia. Alypin was used in the skin line of incision and Schleich's solution to infiltrate the subcutaneous and muscular tissues. The great bulk of the arm made the exposure of the musculospiral nerve, the preparation of the fractured surfaces, and the introduction of the metal splint and plate, a tedious and difficult operation. Yet throughout it all the patient suffered no pain whatever, except from the constrictor placed above his shoulder and, momentarily, when the medulla was scooped out to receive the ends of an Elsberg intramedullary splint. This was used as well as a Lane plate for it was felt that neither alone would serve to keep the fragments aligned in such a fat and heavy arm. The extremity was dressed on a triangular axillary splint, with plaster bandages, which immobilized it fairly well. In spite of primary union of the soft parts the ultimate result was a failure, non-union, as before.

**Case Illustrating a New Method of Short-Circuiting for Colonic Stasis.**—Dr. Frank C. Yeomans presented this case:

Mrs. R., aged forty-eight years, consulted him in January, 1911. The birth of her first child twenty-one years ago was followed by "peritonitis," "uremia," and constipation. The latter has persisted to date and had been very severe the past five years, now requiring three cathartic pills at night and an enema in the morning to secure a movement. Physical examination showed a large well nourished woman. Owing to the thickness of the parietes nothing could be determined as to the abdominal viscera. The sigmoidoscope passed readily twelve inches

and showed a capacious sigmoid flexure. A radiograph was made by Dr. Cole, January 26, 1911, after an enema of bismuth in suspension. The bismuth passed up to a point on a level with the umbilicus. There was a long, tortuous loop of colon which passed up to a level with the first dorsal vertebra, and then turned downward on a line with the umbilicus, where there was apparently a marked constriction. There was a suggestion of the bismuth passing through the constricted area and slight indication of a descending colon and splenic flexure behind the distended loop. The diagnosis was: "Strong evidence of a constriction of the descending colon on a level with and about two and a half inches to the left of umbilicus. The long, distended loop is sigmoid." Confirmatory radiograph was made January 31, 1911. The diagnosis was: "Bismuth has only passed into the transverse colon. The long, tortuous loop which passed up to splenic flexure in the original plates now traverses the pelvis to the right side. There is partial obstruction of the descending colon near splenic flexure. From the lack of worm-eaten appearance one would be suspicious of adhesions rather than new growth." Operation was performed on February 10, 1911, at the Polyclinic Hospital. As the patient was very stout it was difficult to see the region of apparent obstruction. Adhesions might have been present, causing obstruction, but no growth, bands, or adhesions could be felt. The sigmoid, about three inches in diameter and twenty-four inches long, would of itself explain the symptoms. The problem, then, was to short-circuit the constriction in the colon and to drain the sigmoid. Though he had not heard of it before, it occurred to him that lateral union of cecum to sigmoid would be the correct surgical principle, leaving as it would no blind pouches for accumulation of feces, fermentation, and intestinal toxemia. Accordingly this was done by a double row of sutures eventful. The bowels were moved by oil enemas on the through a right rectus incision. Convalescence was uneighth day and the patient left the hospital on the seventeenth day. Since then she had had regular movements without enemas or cathartics and had enjoyed perfect health. The radiograph made October, 1911, eight months after operation, showed site of cecosigmoidostomy and that the bismuth had passed freely through the anastomosis, outlining the entire colon and sigmoid.

**Resection of Sigmoid for Acute Diverticulitis.**—Dr. John Douglas presented a patient who, two years ago after an exposure, had a severe attack of cramps below the umbilicus which was accompanied by marked abdominal distention. He had a second attack while in Boston. He then returned to New York after having been ill for ten days; he had then a temperature of from 100° to 101° F. and had pain localized mostly in the median part of the abdomen below the umbilicus. He then was comparatively well until January 5, 1912, when he had a similar attack of cramps, but this time more severe. Large quantities of salts and cathartics were given, but the bowels would not move. Dr. J. Finley Bell of Englewood, N. J., reported the patient as having a temperature of 101° F., pulse 100, a leucocyte count of 13,772, polymorphonuclears 76 per cent. The day following the temperature was 103° F., pulse 120, and polymorphonuclears 88 per cent. The pain had become more severe. From the symptoms presented it was believed that there was some acute inflammatory condition within the abdomen. Upon careful examination the abdomen was found to be slightly distended and tender. Rectal examination revealed a mass above the prostate and adherent to the posterior wall of the bladder. During the latter part of the attack there was pain on micturition and he complained of pain if gas rumbled through that portion of the intestine. A diagnosis of diverticulitis was made and an incision made in the median line. On opening the abdomen the sigmoid was found with an enormous thickening as the result of the inflammatory condition and an abscess of the mesosigmoid. The mesosigmoid was as thick as one's fist and adherent to the bladder. Pus escaped because of the abscess in the mesosigmoid. The question arose as to what was the best thing to do in such a case. There was so much thrombosis in the vessels of the sigmoid that it was believed that the only thing to do would be a resection. Then the question arose, what sort of anastomosis should be done? Mikulicz operation seemed to be indicated. In this case there was no acute obstruction or dilatation of the large intestine. He could not do a lateral anastomosis because the trouble was so low down. The choice, therefore, lay between an end to end anastomosis or an end to end anastomosis by the method advocated by Gibson, or the Mayo operation with resection of the rectum. An end to end anastomosis was done in this case. The drain was removed at the end of the fifth day. A fistula developed which was very slow in healing. Dr. Douglas said he presented this case because of an unusual condition and he wished to state that he believed that these cases were not as unusual as commonly supposed. These cases of diverticulitis had been anatomical curiosities for many years. In an encyclopedia published in 1904 the condition was spoken of to no extent. In 1906 an article was published reporting a case of acute peritonitis due to perforation of the diverticulum. In 1907 Mayo published an article in which he reported seven cases. In the London *Lancet* 109 cases were published, but most of them were only discovered at autopsy. Since 1907 to 1912, there had been ten or twelve articles published. In one report of 27 cases, the diagnosis was made in only seven before death occurred. In this report it was noted that in 25 per cent. of them carcinoma was engrafted upon the diverticulum. This condition was twice as common in men as in women. When the symptoms occurred, they were due to the inflammatory condition about the diverticulum.

**Partial Gastrectomy and Resection of Part of the Liver for Old Perforated Gastric Ulcer with Carcinomatous Degeneration.**—Dr. John Douglas presented these cases:

Case I.—The patient was a man, 30 years of age, a butcher by occupation. Twenty months ago he complained of water brash and indigestion, and soon he started in vomiting. In six months he complained of very severe pain which was occasionally relieved by vomiting and sometimes by eating. He only weighed 112 pounds. He had an ulcer of the lower curvature near the pylorus, and where the ulcer was there had been a perforation of the stomach. The liver had so been pulled down that it had become adherent to the stomach and closed the perforation. The tissue did not look like liver tissue at all, but was white and more like scar tissue. The ulcer was stony hard and it looked as though there was present a carcinomatous degeneration. He thought that the wisest thing to do would be a resection of the whole thing. A wedge shaped piece was removed from the liver and a posterior gastroenterostomy performed. The patient made a perfect recovery. The report of the pathologist was that there was present a carcinomatous degeneration, but the liver apparently was not involved.

Case II.—This patient was a Spaniard, 50 years of age, a carpenter by occupation. He had great difficulty in bending over in doing his work. His face was congested and blue as well as his right arm. There was a marked dilatation of the veins of the abdomen. When he entered the hospital he was much emaciated. The question of the cause of this condition came up. The *x*-ray showed a shadow in the mediastinum. The only explanation that could be arrived at was that there was some obstruction or pressure upon the vena cava, or possibly an obstruction in the azygos veins. The patient had complained of indigestion for twenty years, but the attack only became acute seven weeks ago when he began to vomit. The *x*-ray pictures were shown and bismuth was found to have remained in the stomach twenty-six hours after the bismuth meal. An operation was performed on November 12 and a carcinoma was found which was half again as large as one's fist. Of seven cases of carcinoma of the stomach that he had, six occurred in the same situation. The growth was adherent to the pancreas. In both the cases there was free hydrochloric acid present. The prognosis was bad. Out of seven cases there had been but one recurrence. All the patients gained from 18 to 35 pounds in weight.

**Experiences with Steinmann's Nail Extension Method in Fractures of the Femur.**—Dr. John C. A. Gerster read this paper. The method consisted in transfixing the soft parts and bone with a nail, the projecting ends of which formed the sole point of attachment for suitable traction upon the lower fragment. The duration of each traction was usually three weeks, exceptionally somewhat longer but never more than five weeks. All was done under the most rigid aseptic and antiseptic precautions. The method was indicated in recent fractures where the usual traction methods were not satisfactory, in compound fractures, in obese people, etc. Also it was indicated as a preliminary to Lane plating when the latter was indicated (interposition of soft parts, etc.). The absence of shortening or even increased length of the fractured limb greatly facilitated the technique of plating. In mal-unions of several months' standing with much contraction of the soft parts, the Steinmann method applied after breaking up of the mal-union was the only means of restoring such a limb to its original length.

**Cholecystostomy by Oblique Fistula.**—Dr. Joseph Wiener presented this paper in which he described the technique which he was now using in the operation of cholecystostomy. He stated that it had long been thought that if some of the drawbacks of cystotostomy could be eliminated by perfecting the technique of the operation much good would result. The drawbacks to cholecystostomy were: 1. Persistent fistula. 2. Post-operative pain and discomfort. 3. The reformation of stones. 4. Cancer. By their method the only cases of persistent fistula had been in cases of stricture of the cystic duct or empyema of the gall-bladder, and they no longer did cystostomy in these two classes of cases. It was largely to overcome this objection that they had developed the technique which they now employed. With regard to the post-operative pain and discomfort, it was evident that much of this pain and discomfort was due to the extensive adhesions resulting from suturing the gallbladder to the parietal peritoneum all around and using numerous gauze packings besides. They no longer fastened the gall-bladder all around to the parietal peritoneum and they were using less and less drainage. As to the reformation of stones, this might be said never to happen, or at least to occur very rarely, if all the stones were removed at the operation. With their technique they were now irrigating the gall-bladder through the drainage tube daily after the fourth or fifth day. In this way they had several times ducts following the operation. They had in several cases washed out small stones that came down from the hepatic acute cholecystitis that were not in good condition found the hepatic ducts packed full of small stones. To split up the hepatic ducts to remove every stone in such cases was to court disaster, but cases of this nature had been repeatedly cured by milking out as many stones as possible and irrigating the gall-bladder for ten days after operation. The danger of cancer developing in a gall-bladder that no longer contained stones or ulcer was, he believed, very small. In cases of gangrene or extensive ulceration of the gall-bladder, they regularly did a cystectomy. New growths, gangrene, extensive ulceration, empyema, stricture of the cystic duct, atrophy or marked hypertrophy of the gall-bladder, extensive pericystic adhesions, all had been rightly mentioned as indications for cystectomy. But there were a goodly number of cases that did not come under these categories in which the operation to be described was suitable. Their usual technique was to palpate the liver under deep anesthesia. If this organ did not extend below the free border of the ribs their incision started just below the free border. If the liver reached further downward, they started the incision from a point opposite the lower border of the liver. If they were in doubt about the lower border of the liver they made a very small incision well below the free border of the ribs. The object of all this was to avoid making an unnecessarily long incision. The incision was carried through the skin and anterior sheath of the rectus, the fibers of the rectus were bluntly separated, and the posterior sheath of the muscle and the peritoneum were incised. The first incision was always a short one and was used for exploration with two fingers. The incision was then enlarged upward or downward and the gall-bladder and ducts carefully palpated. If the gall-bladder was distended, it was emptied by a syringe or a small trocar, after packings had been carefully placed about the gall-bladder. A small incision was then made into the gall-bladder near its fundus, at the site of the aspiration, the remaining contents being squeezed out and mopped away. Then the gloved finger was inserted into the bladder, stones still remaining were removed, stones in the duct were, if possible, milked back into the bladder and removed. A large new catheter or rubber drainage tube was then introduced into the gall-bladder, sometimes into the cystic duct, or even into the duodenum. The incision was made into the fundus of the bladder so that when the bladder contracted the drainage tube would still be below the free border of the ribs. They now established an oblique fistula by suturing the tube into the bladder as they did in performing a Witzel or Kader gastrostomy. If the exposed area of the bladder was long and narrow, they used the Witzel methods of suture; if the area was wide and not very long, they sutured according to Kader. The result in either case was the same. They now used plain catgut exclusively for these sutures. They usually passed one suture partly through the wall of the bladder and through the tube to make doubly sure that the tube would remain in place. They no longer sutured the gall-bladder all around to the parietal peritoneum. Very little drainage was necessary. They formerly used gauze packings around the bladder, but with increasing experience they found that in most cases a drain of rubber dam placed under the fundus of the gall-bladder was all that was needed. They sometimes closed the abdomen with three layers of sutures, plain gut for the peritoneum, chromic gut for the rectus and its sheath, and silk for the skin. Often they used only two layers, through and through number three chromic gut sutures to include all layers except the skin, with a few fine chromic sutures for the anterior sheath of the rectus, and silk for the skin. After the fourth day the gall-bladder was irrigated daily with saline or a weak astringent solution. They believed that these irrigations shortened the time of convalescence, removed inspissated bile, and small fragments or even complete stones. The drainage tube was connected with a bottle attached to the patient's bed. The first dressing was done on the seventh or eighth day, when the rubber dam drain was removed. They usually removed the tube between the tenth and fourteenth day, being guided somewhat by the character and amount of bile being drained and also the general condition of the patient. The patient got out of bed about the twelfth day and left the hospital, usually with a superficial sinus, about the twenty-first day. They had given up extensive gauze drains as they were not necessary with this technique and they undoubtedly delayed convalescence. They had also found that if gauze or rubber dam drains were left more than a week after the operation the healing of the wound would be delayed. To get the best immediate as well as remote results, attention to all the apparently unimportant points mentioned was, they believed, essential. As regards the immediate results of operation, they considered the duration of the operation as of the greatest importance. They had computed the average time consumed in doing their cholecystostomy operation during the past four years, and found it to be less than thirty-nine minutes. In many of the earlier cases they sutured the gall-bladder to the peritoneum which took several minutes and this they now dispensed with, thus shortening the time of operation still more. After citing a number of cases in which this operation was done, Dr. Wiener declared that the operation offered the following advantages: 1. Low mortality. 2. Low morbidity. 3. Retained function of the gall-bladder. 4. Rapid healing. 5. No danger of permanent fistula. 6. Ease of second operation. 7. Great advantage in icterus as benefit was derived from drainage as long as the tube was left and also because not a great deal of dissection was required and hence there was less danger of post-operative shock and hemorrhage. 8. There was no leakage along the tube and very little or no packing was needed which meant much quicker healing. They recommended this procedure to others for trial in suitable cases with every assurance that they had presented this matter impartially and had not overstated the case.

**The Relief of Intractable and Persistent Pain Due to Metastases Pressing on Nerve Plexuses by Section of the Opposite Anterolateral Column of the Spinal Cord, Above the Entrance of the Involved Nerves.**—Dr. Edwin Beer made this preliminary report from the Fourth Surgical Division, Bellevue Hospital: Dr. W. G. Spiller had suggested the operation of cutting the anterolateral column of the cord for the relief of persistent pain of organic origin and published the first case illustrating this procedure, the operation being performed by Dr. E. Martin. The importance of obtaining relief for these cases was self-evident and having seen a number of such cases dragging out their sufferings over months, more or less chronically poisoned with morphine, the suggestion of Dr. Spiller appealed to him. Compared with cutting of a large number of posterior roots to effect a similar result, it seemed a much simpler and safer procedure. Moreover, if the physiology was correct patients so operated on would lose only pain and temperature sense in the affected parts, whereas section of the posterior roots produced loss of all three sensibilities. In the patient Dr. Beer reported, the persistent right-sided pains stopped at once after section of the left anteroposterior column at the level of the tenth dorsal lamina. The relief obtained was most striking and as the patient was walking about eleven days after the operation, a more satisfactory outcome could not have been desired. Dr. Beer concluded that: (1) Surgically considered, the operation of cutting the anterolateral column without doing serious damage to the rest of the spinal cord was perfectly feasible and not difficult. (2) Therapeutically considered, the freedom from pain produced by this surgical intervention met the indications presented in the case reported and in many other sufferers a similar intervention, he felt sure, would give a similar relief. (3) Physiologically considered, complete section of the anterolateral columns produced (*a*) loss of pain sense on the opposite side of the body, (*b*) a disturbance in the thermal

sense which suggested that the fibers for heat and cold were dissociated in the cord, and (*c*) right-sided disturbance of deep pressure sense and the slightest disturbance in touch sense, both being impaired, without producing any disturbance of the sense of position.

## Books Received.

*The* MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading; but this is with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

REPORT OF THE ROYAL COMMISSION ON UNIFORM STANDARDS FOR FOODS AND DRUGS IN THE STATES OF THE COMMONWEALTH OF AUSTRALIA; TOGETHER WITH EVIDENCE AND APPENDICES. Paper; 282 pages. William Applegate Gullick, Government Printer, Sydney.

FORMULAIRE CONSULTATIONS MÉDICALES ET CHIRURGICALES. By G. Lemoine, E. Gerard. Leather; 1044 pages; price 8 Fr. Sixth Edition. Vigot Freres, Paris.

CONFERENCES SUR LES ACCIDENTS DU TRAVAIL ET LES AFFECTIONS TRAUMATIQUES. By Olivier Lenior; paper; 214 pages; price $3.50. Vigot Freres, Paris.

LE LABORATOIRE DUE PRATICIEN. By Paul Gastou. Illustrated; paper; price 4 Fr.; 84 pages. A. Poina, Paris.

PRACTICAL GUIDE TO DISEASES OF THE THROAT, NOSE, AND EAR. By WILLIAM LAMB, M.D., C.M., M.R.C.P., London. Third Edition. Cloth; price $2.75 net; illustrated; 352 pages. William Wood & Company.

SURGERY OF THE LUNG. By C. GARRE, and H. QUINCKE. Second Edition. Illustrated; cloth; price $4.00 net; 271 pages. William Wood & Company.

STUDIES IN SMALL-POX AND VACCINATION. By WILLIAM HANNA, M.A., M.D., D.P.H. Cloth; illustrated; price $3.00 net; 52 pages. William Wood & Company.

DER MAGENSAFTFLUSS UND VERWANDTE SEKRETIONSSTÖRUNGEN. By Dr. A. GÜNZBURG. Volume 4, part 7; paper; illustrated; 69 pages; price 2 mks. Carl Marhold, Halle a. S.

DER NORMALE MENSTRUELLE ZYKLUS DER UTERUSSCHLEIMHAUT. By R. SCHRÖEDER, M.D. Cloth; illustrated; price 16 mks. August Hirschwald, Berlin.

GOLDEN RULES OF DIAGNOSIS AND TREATMENT OF DISEASES. By HENRY A. CABLES, B.S., M.D. Second Edition. Cloth; price $2.25; 318 pages. C. V. Mosvy Company, St. Louis.

SCHOOL HYGIENE. By FLETCHER B. DRESSLAR, Ph.D. Cloth; illustrated; price $1.25; 369 pages. The Macmillan Company, New York.

CLINICAL LABORATORY METHODS. By ROGER SYLVESTER MORRIS, A. B., M.D. Cloth; illustrated; 343 pages. D. Appleton & Company, New York and London.

THE NARCOTIC DRUG DISEASES AND ALLIED AILMENTS. By GEO. E. PETTEY, M.D. Cloth; illustrated; price $5.00 net; 516 pages. F. A. Davis Company, Philadelphia.

COMMERCIALIZED PROSTITUTION IN NEW YORK CITY. By GEORGE J. KNEELAND. Cloth; price $1.30 net; 334 pages. The Century Company, New York.

MEDICAL ELECTRICITY. By H. LEWIS JONES, M.A., M.D. Sixth Edition. Illustrated; price $4.00 net; cloth; 551 pages. P. Blakiston's Son & Company.

CLINICAL PATHOLOGY. By P. N. PANTON, M.A., M.B., B.C. Cantab. Illustrated; cloth; price $4.00 net; 440 pages. P. Blakiston's Son & Company.

THE EXAMINATION OF WATERS AND WATER SUPPLIES. By JOHN C. THRESH. Second Edition. Illustrated; price $5.00 net; cloth; 644 pages. P. Blakiston's Son & Company.

THE DIFFICULTIES AND EMERGENCIES OF OBSTETRIC PRACTICE. By COMYNS BERKELEY, M.A., M.B., B.C., Cantab., F.R.C.P., London, M.R.C.S., England, and VICTOR BONNEY, M.S., M.D., B.Sc., London, F.R.C.S., England, M.R.C.P., London. Illustrated; cloth; 787 pages. P. Blakiston's Son & Company

WHAT HEART PATIENTS SHOULD KNOW AND DO. By J. H. HONAN, M.D. Cloth; 204 pages; price $1.20 net. Dodd, Mead & Company, New York.

SURGERY OF THE EYE. By ERVIN TOROK, M.D., and GERALD H. GROUT, M.D. Cloth; illustrated; 507 pages. Lea and Febiger, Philadelphia and New York.

ANALYSE DES HARNS. By A. ELLINGER, and others. Paper; price 27 mks.; illustrated; part two. C. W. Kreidels, Wiesbaden.

HERBALS, THEIR ORIGIN AND EVOLUTION. By AGNES ARBER, D. Sc., F.L.S. Cloth; illustrated; 253 pages; price 10/6 net. Cambridge University Press.

## Therapeutic Hints.

**The Treatment of Lupus Erythematosus.**—C. Sabatié details his method of treatment as follows: During the acute attacks all active treatment is avoided, and soothing ointments, such as cold cream, glycerite of starch, etc., are applied to the lesions. The constitutional treatment is directed against the vasomotor element. For this purpose the following is administered:

℞ Quinine sulphate,
Ergotin, āā 0.05 gram.
Extract of belladonna, 0.001 gram.

This should be given in pill form, six to eight times a day.

For the centrifugal form of erythema there should be lightly applied to the diseased patches every other day by means of a cotton swab the following mixture:

℞ Tincture of iodine,
Acetic acid, equal parts.

Or the lesions may be painted every other day with the following:

℞ Precipitated sulphur,
Resorcin, āā 5 grams.
Tincture of green soap (20 per cent.), 30 grams.

For the first application this should be diluted with an equal part of eau de Cologne; later it may gradually be employed pure.

The following ointment is useful:

℞ Biniodide of mercury,
Iodide of potassium, āā 0.10 gram.
Lard, 20 grams.

The proportions of the medicaments may be gradually increased.

All of the above applications are designed to produce an irritation which should not be excessive, and should be suspended when the irritation is too great. In this case they should be alternated with soothing applications.

Scarifications are of distinct value. They should be superficial and regular and should form a square pattern. This form of treatment should be applied once a week.

For the fixed variety of lupus erythematosus the same treatment, but of a more energetic degree, should be applied. The scarifications should be deeper, and may be supplemented by the application to the scarified areas of a ten per cent. solution of lactic acid.

Various physical agents have demonstrated their value in these conditions. The high frequency currents are indicated above all in the centrifugal form of erythema. The maximum effect is obtained if the high frequency currents are applied in conjunction with and immediately following the scarifications. Photo-, radio-, and radiumtherapy furnish good results, but occasionally the reaction is too strong and is followed by an extension of the disease. The use of these measures should be restricted exclusively to the fixed type of lupus erythematosus.

One of the best forms of treatment is the application of carbonic acid snow for ten to twenty seconds in such manner as to produce an ulcer and a superficial eschar; as soon as this is healed, in about fifteen days, the application is repeated.

Although many methods of treatment have been employed against it, lupus erythematosus may persist in spite of all treatment. —*Le Progrès Médical*, April 26, 1913.

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## Original Articles.

### INCOMPETENCY OF THE ILEOCECAL VALVE.

#### DISORDERS ARISING FROM THIS CONDITION AND THEIR TREATMENT.

By JOHN H. KELLOGG, M.D.,
BATTLE CREEK, MICH.

Of the more important structures of the body, the ileocecal valve seems to have been most of all neglected. This interesting structure was discovered by Caspard Bauhin in 1579.[1]

Piccolomini published an account of the valve as described by Bauhin in 1586.[2] Tulpius wrote about the ileocecal valve in 1641.[3] Veslingio published a description of the valve with a rude drawing in 1676.[4] (Fig. 1.)

John Mason Good in his "Study of Medicine" (1822)[5], described the ileocecal valve as a "muscular structure" and recognized its double function. He stated its use to be "To moderate the flow from the small intestine into the latter (colon), and to prohibit a regurgitation of the feces into the former (small intestine)."

Kopsch, the German anatomist, describes the ileocecal valve [6] as consisting of two folds which act as do the two folds of the mitral valve of the heart, permitting the intestinal contents to move forward but not backward.

Cunningham calls attention to the fact that the ileocecal valve is formed by a partial inversion or telescoping of the small intestine.[7] Cunningham also notes the fact that the valve varies considerably in form. Viewed from the interior of the colon it may be either rounded or slit-like and with sloping or infundibuliform edges.

Common forms of the ileocecal valve are shown in Figs. 2 to 4.

Kraus and other German anatomists note that the human ileocecal valve owes its structure to the fact that the cecum is folded around the end of the ileum as shown in Figs. 5 and 6.[2] This form of the large gut which is found only in man and the higher apes is produced by a muscular band, the *habenula* (Fig. 6), which passes behind the valve, puckering the large gut so as to form several folds about the end of the ileum, a series of haustræ, thus producing an intussusception of the small intestine. This intrusion of the small gut into the large gives rise to the folds which form the mechanical structure of the valve (Fig. 18).

*The Physiology of the Ileocecal Valve.*—Although the muscular character of the valve was recognized by John Mason Good nearly a century ago, the fact that the valve is not only a mechanical structure but a true sphincter was apparently forgotten until suggested by Keith in 1903, and proven on the dog by Elliott in 1904.[8]

That the integrity of the ileocecal valve is essential to health may well be inferred from the fact that it is almost universally present in vertebrate animals. (Figs. 7 to 10.) The ileocecal valve serves to separate the mid-gut from the end-gut just as the pylorus forms a line of demarcation between the fore-gut and the mid-gut. The small intestine or mid-gut is the principal organ of digestion and absorption. The contents of the small intestine are held back by the ileocecal sphincter until the digestible portions of the food have been digested and absorbed. Carbohydrates are practically all absorbed in the small intestine, only about two per cent. passing into the colon. A somewhat larger proportion of fats escape absorption, and a still larger amount of protein.

The colon is a receptacle for unused ingesta, mucus, bile, and various excretory products. These materials readily undergo putrefaction in the large intestine under the influence of warmth and moisture, and of the presence of putrefactive bacteria which abound in this part of the alimentary canal.

Says A. Schmidt: "Fermentation of carbohydrates takes place normally both in the lower part of the small intestine and in the colon. *Putrefaction of protein on the other hand occurs exclusively in the large intestine. The ileocecal valve forms a sharp line of demarcation above which putrefaction never occurs except under pathological conditions.* If protein decomposition extends up into the small intestine, far greater quantities of indican appear in the urine than ever occur through the absorption in the colon."[9]

Sir William Macewen enjoyed the rare opportunity to make numerous observations upon the behavior of the ileocecal valve in a case in which the valve was exposed to view through a large opening in the cecum and abdominal wall. He noted that material passes through the valve from the small intestine into the colon in small quantities at a time and in the intervals between discharges "the ileocecal valve seemed to close, probably by reflex action."[10]

"It appears to me," Sir William added, "that at the ileocecal valve there is a controlling reflex agency regulating the flow of partially digested food into the cecum."

The recent observations of Cannon[8] clearly demonstrate that the ileocecal sphincter acts in a manner very similar to the pylorus, retaining the foodstuffs in the small intestine until the digestive work of the mid-gut is complete and the digested foodstuffs have been absorbed.

Within the last few years Holzknecht, Schwartz, Groedel, Case, and numerous other roentgenologists have clearly demonstrated the functional activity of the ileocecal valve in controlling the movements of foodstuffs from the small intestine into the colon. These observations establish the necessity of the ileocolic valve for the following purposes:

1. To hold back the digesting material in the small intestine until the digested portion has been transformed by the several digestive juices and absorbed.

2. To pass the mixture of unusable food residues,

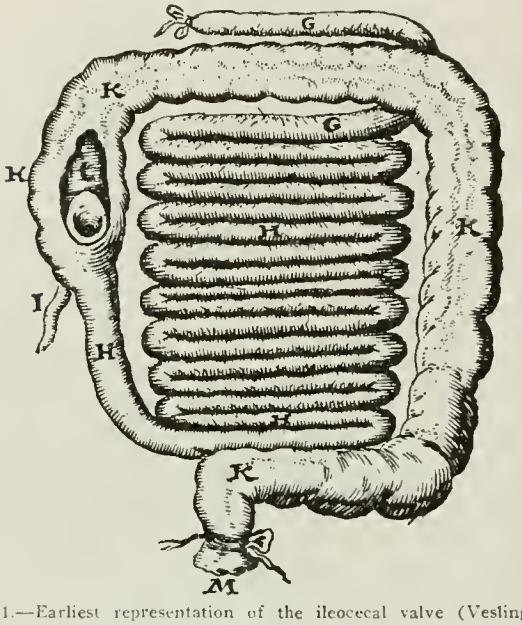


Fig. 1.—Earliest representation of the ileocecal valve (Veslingio).

mucus, bile, and other excretions from the small intestine into the colon in small successive doses so as to give the colon, the chief function of which is the absorption of water and the discharge of unusable food residues and excreta, an opportunity to deal with the successive portions of material brought to it without being overloaded. (The contents of the small intestine are nine-tenths water when passed into the colon.)

3. To prevent a reflux of material from the colon into the small intestine, which is accomplished by cooperation of the muscular sphincter of the proximal side and the mechanical action of the membranous folds on the distal side of the ileocolic junction. The importance of this function of the ileocecal valve is greatly emphasized by the demonstration by Cannon, Schwartz, Hertz, Case, and others, of the existence of an antiperistaltic action in the proximal half of the colon. Cannon gives[8] a most graphic description of the powerful anti-

Fig. 2.—Normal ileocecal valve (Cunningham).

peristaltic waves (as seen in the cat) beginning at about the middle of the transverse colon and passing rapidly backward along the colon to the cecum, compressing the liquid contents of the cecum so strongly as to cause a backward rush through the advancing ring of constriction. Case has confirmed these observations in the human subject.

The tight closure of the ileocecal valve alone prevents the contents of the cecum from being forced by these powerful antiperistaltic waves backward

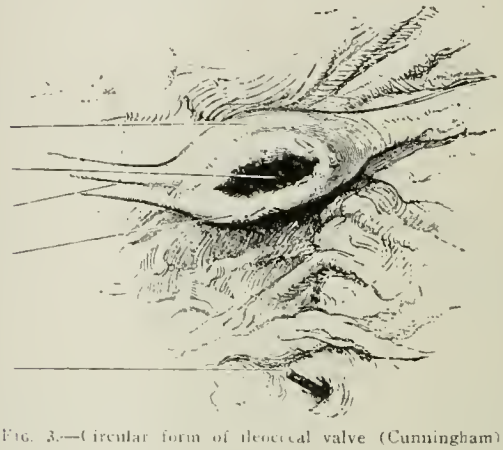

Fig. 3.—Circular form of ileocecal valve (Cunningham).

into the small intestine. At intervals the antiperistaltic waves cease momentarily while the ileocecal valve relaxes and small portions of material are passed into the cecum from the small intestine; then the antiperistaltic waves again begin churning the liquid material, spreading it over the surface of the cecum and ascending colon, thus encouraging absorption while at the same time exerting a pumping action upon the venous and lymphatic vessels so that the contents of the cecum are rapidly dried down to the proper consistency. Fig. 11 is a reproduction from a radiograph of a colon in which colitis existed in the ascending colon with exaggerated antiperistalsis, as shown by the great accumulation of material in the cecum and ascending colon.

Of these several and important functions of the valve, Cannon says: "It gives new meaning and value to the location of a sphincter or valve at the opening of the ileum. For, inasmuch as the valve is normally competent, the constrictions repeatedly coursing toward it force the food before them into a blind sac. The effect on the contents must be the same as the effect seen in the stomach when the pylorus remains closed before the advancing waves. . . . About twenty-five waves in the cat affect

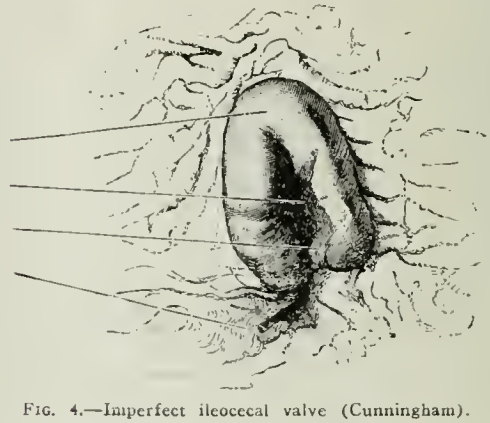

Fig. 4.—Imperfect ileocecal valve (Cunningham).

thus every particle of food in the colon during each normal period of antiperistalsis."[8]

Each of the two functions of the valve is of essential importance to the integrity of the digestive functions and the welfare of the body.

*Morbid Conditions Which Arise from Incompetency of the Ileocecal Valve.*—That the ileocecal valve may become incompetent was recognized by John Mason Good, who called attention to the fact that fecal vomiting could not occur unless the ileo-

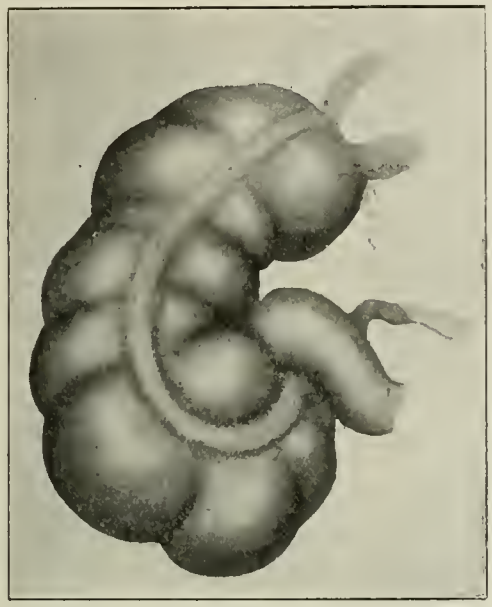

Fig. 5. Normal cecum and terminal ileum.

cecal valve had become incompetent.[5] Moreover, Max Hertz of Vienna, in 1897, demonstrated that the ileocecal valve frequently becomes incompetent, and pointed out some of the disorders which arise from incompetency of the valve.[11]

A. Schmidt of Dresden, some years later,[9] called attention to the evils resulting from incompetency of the ileocecal valve and recently roentgenologists have shown that the bismuth meal shows incompetency of the ileocecal valve to exist in a very con-

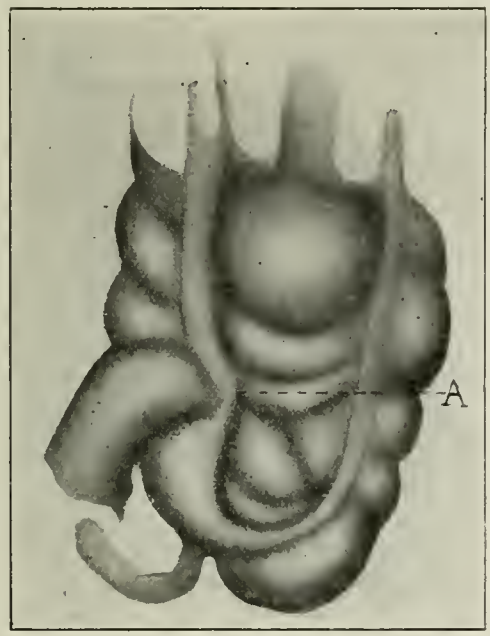


Fig. 6.—Normal ileocolic junction, bowel rotated outward showing habenula, A.

siderable proportion of cases. Holzknecht found the valve incompetent in three out of fifteen cases studied with the bismuth meal. Case found the valve incompetent in 33 cases of 200 examined, or one in six.[12]

The writer's attention was first called to the frequency with which incompetency of the ileocecal valve occurs by Dr. J. T. Case, the roentgenologist of the Battle Creek Sanitarium, in November, 1910. A study of the subject since that time has convinced

Fig. 7.—Ileocecal valve of a dog.

the writer that this morbid condition is one of considerable importance not only in relation to pathological disturbances of the alimentary canal, but also numerous varied and serious functional disturbances and degenerations elsewhere in the body.

The opportunity for making the extended study of clinical cases upon which this paper is based has been afforded by the thoroughgoing scheme of roentgenological study of the alimentary canal perfected by Dr. Case, whose interesting observations have been reported before several scientific bodies in this country and Europe, and published in various

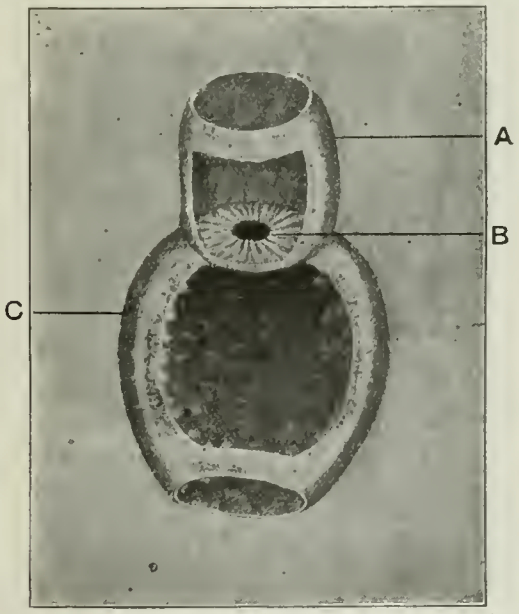


Fig. 8.—Ileocecal valve of a Conger eel. A, ileum; B, ileocolic valve; C, colon (Huntington).

medical periodicals[13] during the past two years.

The accompanying radiograph (Fig. 12), made by Dr. Case, shows incompetency of the valve, permitting the injected bismuth solution to pass into the small intestine for many feet.

As regards the causes which produce incompetency of the valve, Kraus holds that the principal cause is the breaking (Fig. 14) or stretching (Fig. 15) of the habenula. Stretching or rupture of the habenula may be caused by overdistention of the

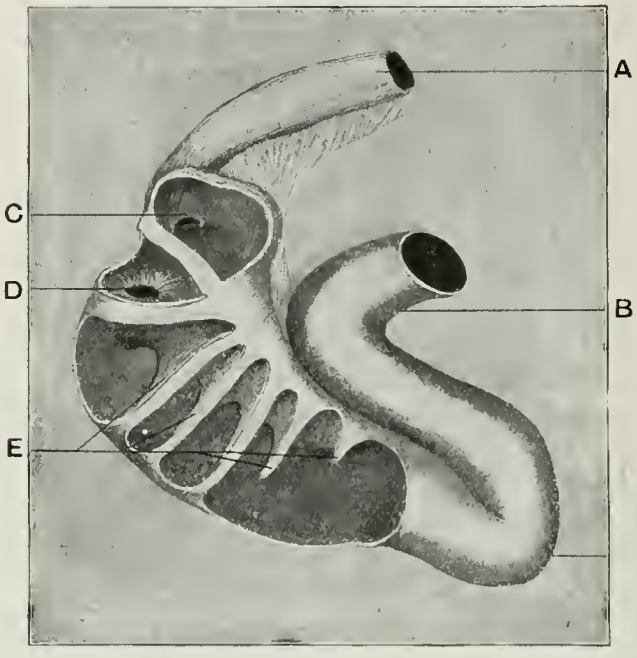


Fig. 9.—Ileocecal valve of a South American lizard (Huntington). A, ileum; B, colon; C, ileocolic junction; D, secondary valve; E, spiral valve.

large gut. This may result either from constipation or from gas accumulation. By overdistention of the gut the ileocolic junction is subjected to such a severe strain that the folds which form the valve are straightened out (Figs. 16 to 18). In other words, the small intestine is pulled out of the large gut. The normal intussusception is obliterated. The normal curve of the large gut upon itself disappears and in very pronounced cases the lumen of the small intestine at its junction with the colon becomes funnel-shape. This overstretching destroys both the mechanical structure of the valve by which reflux from the large into the small intestine is prevented, and also the sphincter which controls the movement of material from the small intestine into the colon.

It is probable that competency of the ileocecal valve may also be destroyed by distortion of the folds resulting from cicatricial contraction, caused by ulceration or inflammation.

The observations of Max Hertz convinced him that the valve may become incompetent through atrophy of its tissues, the natural result of chronic colitis, and the valve may be destroyed by tubercular disease.

Temporary incompetency may probably result from overdistention either by accumulation of gas or liquid contents or by the introduction of a large amount of water by enema (Cannon, Case). Dr. Case has observed that the valve may be rendered temporarily incompetent by the presence of a foreign body (a string in the case observed) in transit through the orifice.

When the ileocecal valve becomes wholly incompetent, numerous morbid conditions arise, among which are clearly demonstrable the following:

1. In complete incompetency of the ileocecal valve, the passage of a large amount of undigested material from the small intestine into the colon may cause irritation and diarrhea.

2. When the contents of the small intestine pass rapidly into the colon instead of being introduced in small successive quantities, the colon is overdistended, stasis occurs, putrefactive processes are encouraged, colitis, pericolitis, or appendicitis may result, and conditions are produced which prepare the way for the development of tuberculosis and cancer, pathological conditions which occur with special frequency in this part of the alimentary canal.

Stasis is a natural and a necessary consequence of incompetency of the ileocecal valve. The integrity of the valve is absolutely essential for positive movement of the intestinal contents in the forward direction. The sphincter at the ileocolic junction acts as a check valve which is essential at this point because of the special function of the cecum and ascending colon which requires retention of liquid material introduced from the small intestine to permit the absorption of water. The ingesta is held back and retained for a definite period at three points in the alimentary canal, at each of which it is subjected to special and essential processes, viz., (1) the stomach, in which it is held four or five hours by the pylorus for disintegration and preliminary digestion; (2) the terminal ileum, where it is held by the ileocecal sphincter for the completion of digestion and absorption; (3) the cecum, where it is retained for the absorption of water not by means of a valve but by reversed contractions of the colon—antiperistalsis.

Most authors agree that antiperistalsis does not exist in the small intestine, at least under normal conditions. For this reason the pylorus remains open when the stomach is empty without any evil effects resulting; but the powerful antiperistaltic movements of the colon necessitate the thorough protection of the ileum against reflux. When the ileocecal valve is incompetent, the contents of the cecum, instead of being churned and mixed, are forced back into the small intestine and thus the intestinal contents are prevented from advancing in the normal way, but are held in the cecum and terminal ileum.

Absorption is going on in the meantime, and the consistency of the intestinal contents is increased to an abnormal degree, so that advancement be-

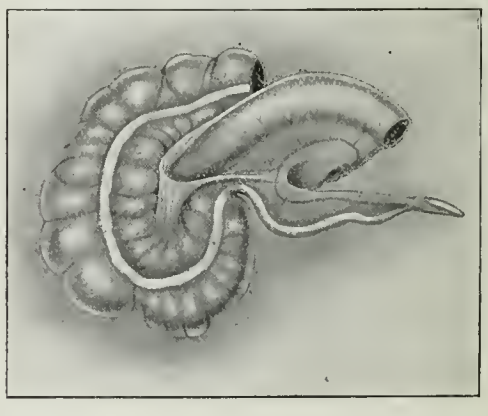

Fig. 10.—Ileocolic junction in chimpanzee (redrawn from Huntington).

comes still more difficult. The writer, in operating upon the intestine, has in several cases found the small intestine half filled with fecal matter of the consistency of putty, and at points several feet above the ileocecal valve.

3. The drag of this accumulated material upon the root of the mesentery, first pointed out by the late Dr. Byron Robinson of Chicago,[14] produces obstruction at the junction of the duodenum and jejunum, and so causes duodenal and gastric stasis.

Fig. 11.—Radiograph of cecum and ascending colon showing stasis due to excessive antiperistalsis in a case of colitis in the descending colon (Case).

Cannon has demonstrated that dilatation of the duodenum causes closure of the pylorus and thus produces stasis in the stomach.[8] The natural consequence of stasis in these parts as in every other part of the alimentary canal, is the abnormal development of bacteria and toxins with infection of the mucous membrane; hence result gastritis, duodenitis, gastric, and duodenal ulcer, cholecystitis, cholangitis, gallstones, pancreatitis, adhesions about the pylorus and the duodenum with chronic pain in the pyloric region, and various other morbid conditions connected with the stomach and digestion.

4. Appendicitis and the various troubles attributed to adhesions about the ileocecal region are a natural, almost necessary consequence of incompetency of the ileocecal valve. A diseased condition of the appendix was found in 63 per cent. of the 60 cases studied, and either Lane's kink or appendicitis was found in 77 per cent. of the cases.

Whether Lane's kink is the result of evolutionary processes as held by Lane or of embryonic origin as Flint[15] contends with so much convincing evidence, it is clear that the stasis produced by incompetency of the ileocolic valve in the cecum and the terminal ileum must tend to exaggerate the evils resulting from this condition.

5. Incompetency of the ileocecal valve interferes with the movement of gases even more than with the movement of liquid material. Liquid as well as solid material may be moved along in the large intestine even though the lumen of the gut is not completely closed during a contraction. Peristalsis in the colon differs from peristalsis in the small intestine. In the latter, contraction rings traverse the whole gut in such a way as to produce a positive forward movement of the entire contents of the intestine, both liquid and gaseous. Material is passed from the cecum upward through the ascending colon by shortening and mass contraction which is made possible by the fixation of the gut at the hepatic flexure. (Max Herz.) With a closed ileocecal valve, the contents of the cecum and ascending colon must move forward toward the transverse colon when the capacity of the gut is lessened by contraction; but when the valve is incompetent, although the forward movement of both liquid and solid material is still possible, though retarded, the intestinal gases are controlled scarcely at all. As the large intestine contracts, the gases rush back through the ileocecal valve, distending the small intestine, and so oscillate back and forth between the large and small intestine making little or no forward movement. It is on this account that patients in whom the ileocecal valve is wholly incompetent are usually subject to a most distressing accumulation of gas in the intestine. The abdomen is greatly distended, and while small quantities of gas escape from time to time by mouth and anus, complete relief is never obtained. This form of flatulence is quite characteristic of complete incompetency of the ileocecal valve and was observed in 35 per cent. of the cases studied. When the ileocolic valve is incompetent, the bowel is practically unable to deal with gaseous material.

6. Constipation is another of the consequences of incompetency of the ileocolic valve. The valve is rendered incompetent by distention of the cecum and ascending colon which may be due to the accumulation of liquid or solid material but is most commonly produced by the development of an excessive amount of gas through the putrefaction and fermentation of retained fecal matters; but incompetency of the ileocecal valve may also cause constipation or at least greatly aggravate this condition by interfering with the forward movement of the intestinal contents. The result of this delay is the absorption of an excessive amount of water so the intestinal contents become almost or quite solid in consistency. The lower ileum and cecum being adapted to the handling of limpid liquid matters are not prepared

Fig. 12.—Radiograph after bismuth injection of the colon showing many feet of ileum filled with bismuth through incompetency of the ileocecal valve (Case).

to deal with this heavy, adhesive material and so the feces stagnate in the lower ileum and cecum, and are only slowly moved along the colon and when finally discharged resemble the feces of sheep.

Such fecal masses may often be felt in the cecum by external examination, usually giving to the examining fingers the impression of a mass of putty, although the consistency may be lesser or greater, according to the length of the delay. In these cases

Fig. 13.—Incompetent ileocecal valve.

x-ray examination may show retention of bismuth for several days in the cecum or even in the small intestine. The appendix is often visible,[12] the protective valve at its mouth having been forced open by the undue stretching of the gut. This patency of the appendix is a natural accompaniment of incompetency of the ileocecal valve, being produced by the same causes. This condition was found in 19 (32 per cent.) of the 60 cases studied in connection with this paper.

7. Incompetency of the ileocecal valve gives rise to conditions which may well lead to the highest degrees of intestinal intoxication. Schmidt has pointed out[9] that there is normally no putrefaction in the small intestine, putrefactive processes being confined wholly to the colon and normally prevented from extending into the small intestine by the ileocecal valve. When the valve is incompetent, putrefactive processes may extend not only by continuity but by reflux of the putrefying material from the colon into the small intestine. Schmidt has shown that the absorption of indican and other products of putrefaction is far greater when putrefaction occurs in the small intestine than when this condition exists only in the colon. The small intestine is evidently not so well prepared as the colon to defend the body against the attacks of putrefactive and toxin-producing bacteria. It is not surprising then that in cases of incompetency of the ileocolic valve we find most pronounced symptoms of autointoxication, the sallow, atrophic, pigmented skin, incipient and advanced arteriosclerosis, and other old age conditions occurring prematurely, with cardiovascular-renal disease, chronic rheumatism, neuritis, insomnia, and various groups of distressing symptoms to which the term neurasthenia is commonly applied.

In an analysis of the symptoms of 60 cases in which the ileocolic valve was shown by x-ray examination to be incompetent which have come under the observation of myself and my colleagues at the Battle Creek Sanitarium within the last few months (April, 1912, to January, 1913), the characteristic symptoms of intestinal stasis were found constantly present. In 87 per cent. of cases the patient complained of constipation. In eight cases (13 per cent.), the patient complained of too frequent bowel movements, a condition which was found to be due either to irritation arising from stasis or to the passage of undigested material into the colon. The following table gives the leading symptoms noted in these cases and the percentage of cases in which each symptom occurred as a prominent feature, omitting the various nervous or neurasthenic symptoms which in varying form and degree were noted in all:

| | Per Cent. | | Per Cent. |
|---|---|---|---|
| Constipation | 87 | Gastritis | 5 |
| Diarrhea | 13 | Colitis | 63 |
| Marked gastric pain | 35 | Hemorrhoids | 23 |
| Obstinate indigestion | 62 | Flatulence | 35 |
| Gastric ulcer | 15 | Enlarged liver | 20 |
| Ileal stasis | 43 | Hepatic insufficiency | 7 |
| Cecal stasis | 38 | Casts and albumin | 11 |
| Cecal dilatation | 31 | Pigmented skin | 28 |
| Ileal or cecal stasis or dilatation | 71 | Headache (migraine) | 45 |
| Adhesions about duodenum | 22 | Chronic rheumatism | 25 |
| Duodenal ulcer | 10 | Neuralgia or neuritis | 23 |
| Patent (visible) appendix | 32 | Bronchitis | 10 |
| Diseased appendix | 63 | Arteriosclerosis | 25 |
| Lane's kink | 33 | Mental and nervous depression | 45 |
| Obstruction in colon (adhesions, kinks) | 37 | Insomnia | 30 |
| | | Intestinal autointoxication | 100 |

A study of the grouping of typical symptoms is very interesting. Lane's kink was found associated with gastric, duodenal, or ileal stasis, or gastric ulcer, in 16 cases, or only 27 per cent.

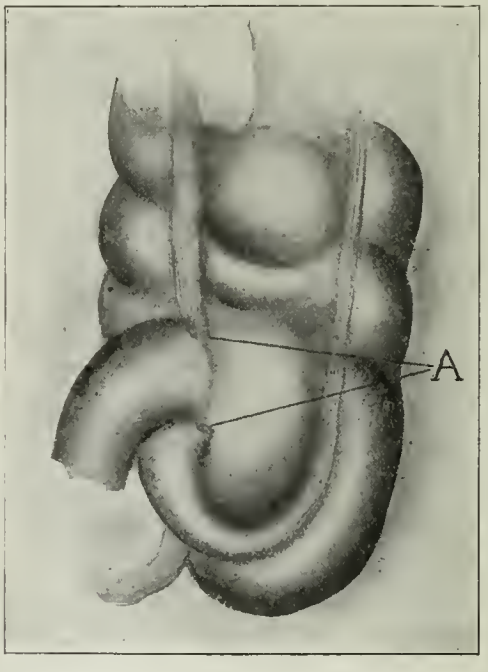


Fig. 14.—External appearance of ileocolic junction in case of incompetency of the ileocecal valve due to rupture of the habenula (See Fig. 6) (Redrawn from Kraus).

Lane's kink was absent in 27 cases in which gastric stasis, duodenal stasis, ileal stasis, or gastric ulcer was found, or 45 per cent. of the whole number of cases.

In 53 of the 60 cases, or 88 per cent., one or sev-

eral of the following conditions was found present: Gastric stasis, gastric ulcer, duodenal stasis, ileal stasis, adhesions about the pylorus or gall bladder, Lane's kink, enlargement of the liver, hepatic insufficiency, gastritis.

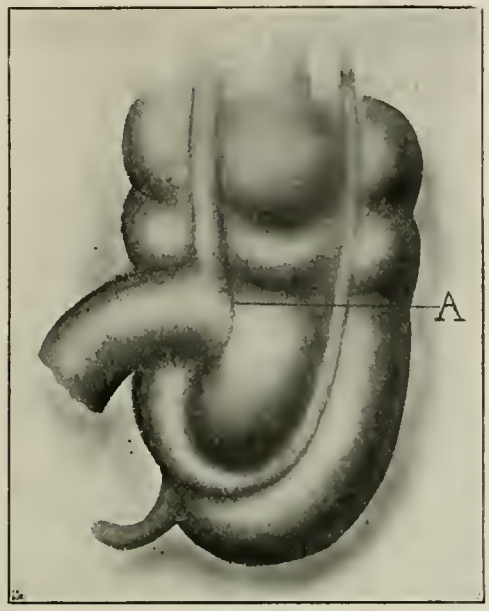


Fig. 15.—External appearance of the ileocecal junction with incompetency of the valve due to stretching of the habenula (redrawn from Kraus).

One or several of the following named conditions was found in each one of the 60 cases (100 per cent.): Gastric stasis, gastric ulcer, duodenal ulcer, duodenal stasis, ileal stasis, cecal stasis, dilated cecum hepatic or pyloric adhesions, Lane's kink, rheumatism, albumin or casts, migraine, gastritis, hepatic insufficiency, enlargement of the liver.

The small number of cases of diarrhea, only 13 per cent. (8) of the whole number of cases, is explained by the existence of colitis in a very large proportion of the cases. In these cases, the incompetency of the valve was evidently compensated by increased antiperistalsis. It is certainly evident that diarrhea is not a common symptom of incompetency of the ileocolic valve, as has been heretofore believed.

It is highly significant that one or several of the following symptoms appeared in 97 per cent. (58) of the cases: Gastric ulcer or stasis, duodenal ulcer or stasis, cecal stasis or dilatation, ileal stasis, Lane's kink.

From the above data it is evident that Lane's kink was not the determining cause of the various morbid conditions present. On the other hand, the constant association of incompetency of the ileocecal valve with gastric stasis, duodenal stasis, gastric and duodenal ulcer, ileal stasis, Lane's kink, intestinal intoxication, and other morbid states which arise out of the conditions named, must indicate either a causative relation or the existence of a common cause to which all these morbid conditions are due, including incompetency of the ileocecal valve. It must be conceded, at least, that incompetency of the ileocecal valve is a condition which must greatly intensify the evil effects of colonic stasis or whatever other condition may be the determining cause of such incompetency, and of intestinal intoxication.

*Palliative Treatment of Incompetency of the Ileocecal Valve.*—It is probable that in certain cases incompetency of the ileocecal valve may be a temporary condition due to acute overdistention of the colon and may be recovered from by the removal of the cause. In the great majority of cases, however, the condition must be regarded as a permanent disability which can be radically remedied only by a proper surgical procedure. Fortunately, however, the condition is one in which palliative measures may be applied with such success that the chief dangers and inconveniences arising from this disability may be completely overcome or to such a degree mitigated that they cease to be either a source of physical discomfort or a serious menace to health. Non-surgical measures which the writer has found especially efficient in these cases are the following:

*Increased Activity of the Bowels.*—It is the writer's belief that the bowels should move normally three times a day or after each meal. This is the rule with the peasantry of Turkey and Bulgaria, who live simple, active lives, as well as with the wild tribes of Africa, whose conditions and habits have not been perverted by an abnormal diet and a sedentary life. The keeper of the big apes of the London Zoo stated to the writer that the orangs and chimpanzees move the bowels four times a day. Whether or not so frequent bowel movement is essential for persons in ordinary health, it is certainly necessary for persons whose colons have been crippled and whose ileocecal valves are incompetent, in order to maintain sufficient activity in the stream of material passing through the intestinal canal to prevent stasis and the resulting putrefaction and other mischiefs which quickly develop when stagnation occurs in any part of the intestinal tract.

Three bowel movements a day are easily secured in many cases by the use of a bulky, laxative diet. In obstinate cases, agar-agar and paraffin oil should be used and will almost certinly secure the desired results. Even in extremely obstinate cases of constipation, electrical stimulation of the pelvic colon by means of a bipolar electrode applied through a proctoscope, massage of the colon, special gymnastics, improvement of the general health by out-of-door life, cold bathing, and other appropriate measures

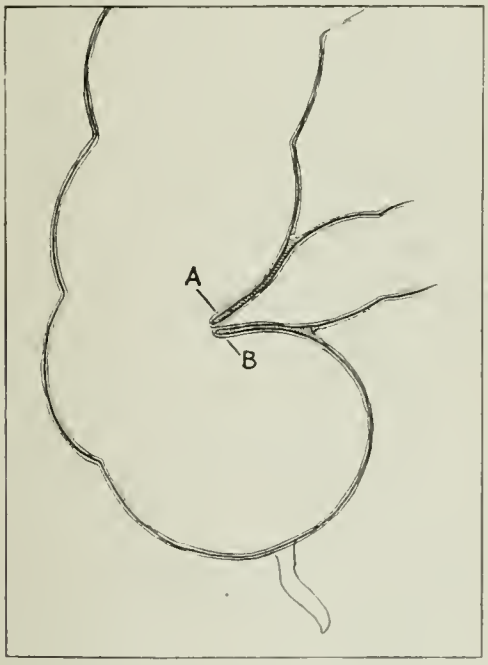


Fig. 16.—Diagram showing formation of the lips of the ileocecal valve by intussusception of the ileum.

faithfully and simultaneously applied rarely fail to secure the desired intestinal activity.

*Change of the Intestinal Flora.*—This is absolutely essential in these cases. While increased intestinal activity is first of all essential as a means of

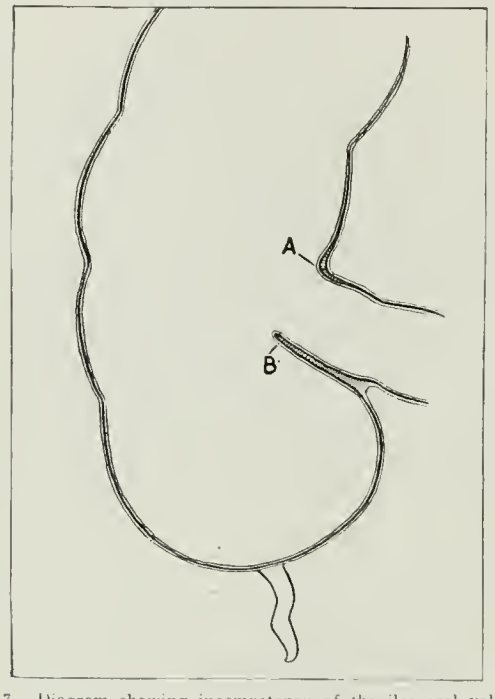


Fig. 17.—Diagram showing incompetency of the ileocecal valve due to destruction of one lip by overstretching of the gut.

lessening the opportunity for putrefactive changes in the intestine, the next important step is to change the intestinal flora. Putrefactive bacteria are the cause of intestinal infections and intoxications. These pernicious organisms can produce toxins only through the decomposition of nitrogenous matters or proteins. Hence the special necessity for a low protein diet in these cases. The Chittenden standard which makes the protein requirement 10 per cent. of the total ration, estimated in calories,[16] should not be exceeded. In many cases the proportion of protein may be for a time, at least, considerably reduced with great advantage. This practically requires the elimination of meats, at least of lean meats of all sorts. Tissier of the Pasteur Institute, who has perhaps devoted more time to the study of the intestinal bacteria than has any other bacteriologist, insists on the temporary exclusion of animal protein of all sorts, not excepting milk, having shown by extended researches[17] that animal protein undergoes putrefaction much more readily than does vegetable protein.

Besides limiting the protein to the actual body needs, it is essential that carbohydrates should be used very freely. Kendall has shown[18] that even proteolytic bacteria show preference for carbohydrates when these are present in available form, and that these mischief-making parasites actually become reformed in the presence of an abundance of carbohydrates, ceasing to form toxins and joining with the protective flora in the production of harmless and beneficent organic acids which not only prevent putrefaction in the intestine but render valuable service by furnishing to the intestine a normal stimulus, the lack of which, as shown by Schmidt and others, is one of the prime causes of constipation.

Acid forming ferments in the form of the *Bacillus bulgaricus* or liquid cultures prepared from bulgaricus and other lactic acid forming bacteria, may be used with advantage. The *B. bifidus* of Tissier[19] and the glucobacter of Wollman[20] are also useful. The writer employs a growing culture containing all three of these beneficent organisms. The *B. bulgaricus* forms lactic acid in the intestine. *B. bifidus,* a strict anaërobe, forms acetic acid in the colon. *B. glucabacter,* according to Wollman and Metchnikoff, converts starch into sugar in the colon and thereby encourages the growth of both *B. bulgaricus* and *B. bifidus* and also of other acid-forming bacteria which require for their sustenance sugar which is normally almost wholly absorbed in the small intestine, only two per cent. remaining to pass into the colon.

When ileal stasis exists, sugar must wholly disappear in the small gut, thus rendering impossible the development in the colon of the protective flora and encouraging the growth of the putrefactive organisms which always find in the mucus, bile, and other intestinal secretions as well as in undigested and unabsorbed food proteins always present in the feces, an abundance of protein which they decompose into indol, skatol, phenol, cresol, and various other putrefactive products which are the cause of intestinal intoxication and the bane of so many thousands of suffering mortals.

In the employment of the measures suggested and other allied means, the writer and his colleagues within the last year secured in the treatment of fifty-five of sixty cases of incompetency of the ileocecal valve who remained for treatment, the following results:

Thirty-six per cent. were very greatly improved, practically cured.

Fifty per cent. were improved and at last accounts still improving.

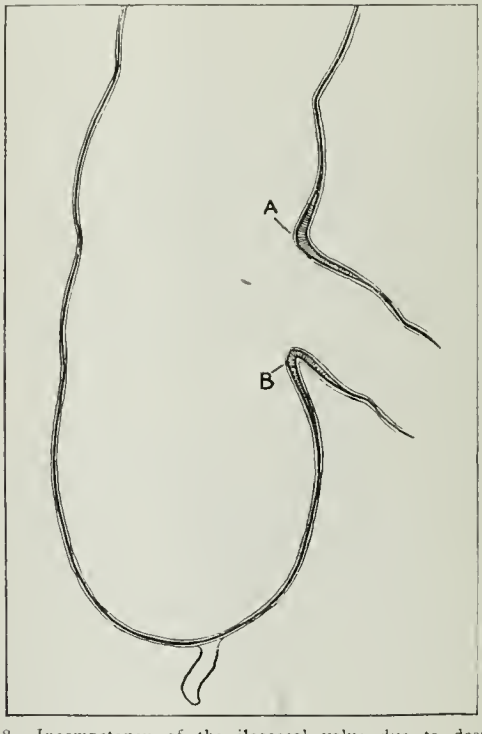


Fig. 18.—Incompetency of the ileocecal valve due to destruction of both lips, due to distortion of the gut.

Fourteen per cent. slightly improved, but needed longer treatment.

The average time of treatment was forty-eight days. The shortest period in any case was fourteen days, the longest one hundred and eighty days.

A very considerable improvement may properly be expected in every case in which the measures of treatment suggested are faithfully applied. As soon as the habit of moving the bowels three times a day is well established, the patient will note improvement, and as the intestinal putrefaction and intoxication diminish under the influence of an antitoxic diet and the use of antitoxic ferments, the various distressing symptoms from which the patient suffers will rapidly disappear. The skin becomes clearer, the pigmentation of face and hands diminishes in intensity and sometimes disappears entirely, the texture of the skin improves, dryness diminishes, and the skin becomes moist and more vascular and loses its parchment-like appearance. Indolacetic acid, indican, and other toxins disappear from the urine. In five of the fifty-five cases referred to in which casts and albumin were present, these evidences of renal disease disappeared. Headaches at first occur with less frequency and severity, and finally disappear. Depression of spirits and other neurasthenic symptoms vanish. The patient undergoes a general physical and mental regeneration which is most gratifying to witness and most delightful to experience, and which is ample compensation for the painstaking efforts put forth.

*The Radical Cure of Incompetency of the Ileocecal Valve by Surgical Procedure.*—The functions of the ileocecal valve when lost may be restored by a very simple procedure which consists simply in reconstructing the damaged habenula and reproducing the intussusception of the small intestine. With the abdomen open, the ileocolic junction is exposed, the bowel is turned outward so as to bring the under side to view and two sutures are inserted. The first is placed so as to restore the intussusception of the small intestine. The second is placed in such a manner as to restore the tension lost by the rupture or overstretching of the habenula. The appearance of the parts when the valve has been repaired is shown in Fig. 20. By a recent improvement in the technique of the operation a single suture is found sufficient in most cases. The suture picks up in succession each of the points which are to be approximated. When the suture is tied the four points are brought together and the desired effect is attained. It is easy to test the efficiency of the valve in both directions by stripping the contents of the small intestine into the colon then compressing the cecum, keeping always in view the small intestine which has been emptied. If the valve is incompetent, gas will be forced back into the small intestine with very slight pressure upon the cecum. If the application of a suture to one side does not completely remove the defect, a similar suture is applied on the opposite side of the ileocolic junction.

As regards the indications for the operation, I have never thought it proper to open the abdomen for the purpose of repairing an incompetent ileocecal valve, for the reason that the evils arising from this condition can be so efficiently and satisfactorily combated by means of an antitoxic regimen and the employment of other non-surgical means that surgical measures need not be considered. To date (June, 1913) the writer has repaired the incompetent ileocecal valve in thirty cases with excellent results. In each of these cases the abdomen was opened for the purpose of removing a diseased appendix or some other condition demanding surgical interference. It is quite possible, however, that cases may be found in which operation, especially for the purpose of repairing an incompetent ileocecal valve, is clearly justifiable. In these cases, other conditions needing attention are quite likely to be encountered when the abdomen is opened.

*An Artificial Ileocolic Valve Necessary in Ileosigmoidostomy.*—It is evident that if the evil results of stasis in the ileum or proximal colon are to be certainly and permanently relieved by ileosigmoidostomy either with or without removal of the proximal colon, reflux of feces into the small gut must be prevented by the construction of a new valve at the new ileocolic junction.

This the writer has done in ten cases. The first operation was done Sept. 1, 1912. The valve was proved to be competent by *x*-ray examination in each case. The technique of the operation is simple. It consists in so modifying the ordinary end to side method of anastomosis that the small intestine is intussuscepted into the colon about half an inch. A description of the technique of this operation will be given in another paper.

The remarkable results achieved by William Arbuthnot Lane of London, by removal or short circuiting of the colon are due to the elimination of the intoxication resulting from stasis in the colon and ileum. While this stasis may be in many cases due to a "kink" of the terminal ileum, the writer is certain that marked stasis is present in not a few cases in which no kink exists. Some of the cases reported by Lane and by Jordan, the distinguished roentgenologist of Guy's Hospital, clearly prove this as well as numerous observations by the writer and others at the operating table. In some of these cases the cause of stasis has been shown to be due to incompetency of the ileocecal valve. Incompetency of the valve naturally leads to abnormally quick emptying of the colon as well as of the small intestine but a study of sixty cases as above shown, demonstrates that this quick emptying is rarely observed. The reason is to be found in the coexistence with the incompetency of colitis, adhesions, "kinks," or other impediment to emptying of the colon. Under these conditions, antiperistalsis is greatly exaggerated.

Antiperistalsis thus becomes an active cause of aggravation of the evil results of the incompetency through a reversal of the normal forward movement of the intestinal contents.

Removal of the proximal colon eliminates antiperistalsis and this fact is probably the chief factor in the benefit derived from this operation for which the world is indebted to the courage and the genius of Mr. Lane; but reflux into the intestine after colectomy or short circuiting is not necessarily prevented unless the new ileocolic junction is protected by an artificial valve. If the new ileocolic junction is unprotected, neglect to keep the colon empty may result in a mechanical backing up into the small intestine which has been known to occur to such an extent as to distend the small intestine to almost the size of the normal colon.

In conclusion the writer ventures to express the opinion that the great importance of the ileocecal valve which has been demonstrated by the observations of Cannon and by various roentgenologists will command for this structure and its functions a much greater amount of attention in the future than it has heretofore received. I desire also to express my obligations to Dr. J. T. Case, the roentgenologist of the Battle Creek Sanitarium, for a careful *x*-ray study of my operated cases both before and after operation with reference to the functioning of the ileocecal valve, and to my assistant, Dr. R. H. Harris, for carefully noting and recording the results in operated cases.

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# A CLINICAL STUDY OF THE APPLICATION OF IMPROVED INTRAVESICAL OPERATIVE METHODS IN DIAGNOSIS AND THERAPY.*

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If we were asked to make a concise statement of the useful endovesical operative procedures that can be carried out through the modern cystoscope by means of special instruments, we should answer as follows: The extirpation of tumors; the excision of suspected pathological lesions; the crushing and removing of calculi; the removal of foreign bodies; the snaring of papillomata; the dilatation of ureters; the excision of ulcers for diagnosis and therapy; the exploratory or therapeutic incision of cysts; the synchronous catheterization of three ureters and the synchronous employment of three or more catheters, and the excision of portions of a ureteral orifice for the diagnosis of renal tuberculosis. The technique requisite for the successful execution of these measures has been simplified, on the one hand, by the development of the proper optical systems and mechanical features of the operating cystoscope, and, on the other hand, by the construction of special instruments.

*Technique of operative cystoscopy.*—In recent work in operative cystoscopy,[1] I have employed the simpler of the two models of the operating cystoscope proposed in previous publications. Experience has suggested the adoption of certain improvements in this instrument and has led to the development of changes in mechanical and optical construction to meet the exigencies of some of the difficult problems that are at times encountered in this work. The instrument resembles very closely the author's catheterizing cystoscope, except that its shape is somewhat oval, and its telescope is provided with but a single outlet for the introduction of instruments of large caliber. Although two sheaths, the convex with a lamp on the convex side of the beak, and the concave (Nitze type) are constructed, the concave type is the more useful and has a larger scope of application. In order to add to the strength of the deflecting mechanism and to keep the operating instruments properly directed against the lesions to be attacked, the telescope has been fitted with a fixation screw. Two optical systems, the right-angled and one which looks slightly forward, were adopted to suit the varying physical demands of operating, either near to the sphincter of the bladder, or farther in the interior. It was found that by a special method of introduction, instruments of considerable size could be made to enter the sheath of the cystoscope.

The general assembly of all the instruments is the same, there being a wire shank carrying the working end or jaws (Fig. 1), a spiral flexible cannula, and a handle (Fig. 2). In the case of a large jawed forceps, it is impossible to introduce the working end through the catheter outlet, and we must execute the following manipulations for introduction. The cannula, provided with a sterile rubber cap to prevent leakage (Fig. 2) is introduced through the catheter outlet. The working end and shank are now passed through the cannula as it lies in the telescope, the handle is attached and the jaws are closed and locked. The telescope carrying the forceps, whose working end projects somewhat beyond the lens prism (Fig. 3) is now inserted into the sheath, the jaws of the instrument entering in advance.

In seizing a foreign body or in ablating tissue, the closed forceps is deflected against the lesion (Fig. 4), the jaws are then opened and gradually closed as the beak of the cystoscope is made to approach the bladder wall. In this maneuver the whole instrument, as well as the shaft of the forceps, moves inward toward the lesion. This manipulation is necessary to compensate for the recession of the jaws as they are being closed. A new type of mechanism more recently constructed obviates the necessity of this somewhat disturbing "recession" of the jaws as they are being closed, and furthermore permits of work being carried out at close range (Fig. 5).

*Exploratory excision in suspected carcinoma of bladder or prostate.*—The following history well illustrates the method of removal of pieces of tumor tissue in suspected carcinoma of the bladder, and demonstrates too that the margins of the growth can be removed at the same sitting, so that the pa-

*Read before the Section on Genitourinary Surgery, New York Academy of Medicine, February 19, 1913.

thologist has ample and adequate tissue for microscopical examination. With the exercise of patience, two of the difficulties which have to be met in exploratory excision can usually be surmounted. These are copious bleeding and the

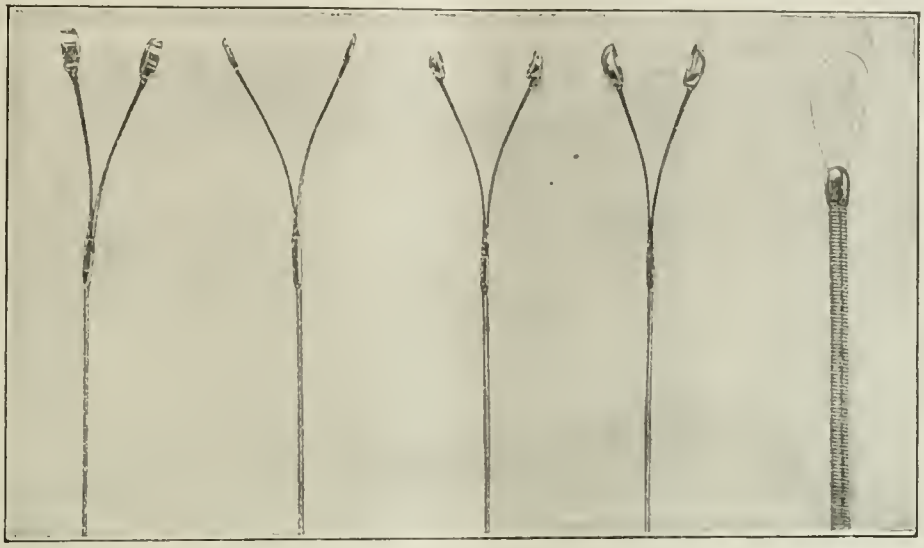

Fig. 1.—Working-ends of operating instruments; four forceps and a snare.

presence of large amounts of blood clot. When free coagula disturb the picture, these must first be washed out or be extracted with forceps. We then proceed to remove the clots attached to the tumor, to bring the ulcerating surface of the growth into view.

Case I.—E. R. H., admitted to the Genitourinary Service, Mt. Sinai Hospital, Nov. 11, 1912, had noticed blood for six months in his urine. Hematuria was most marked at the end of the act of urination, and lately pain on urination and burning has increased to such an extent that the patient consulted Dr. Goldenberg, who kindly

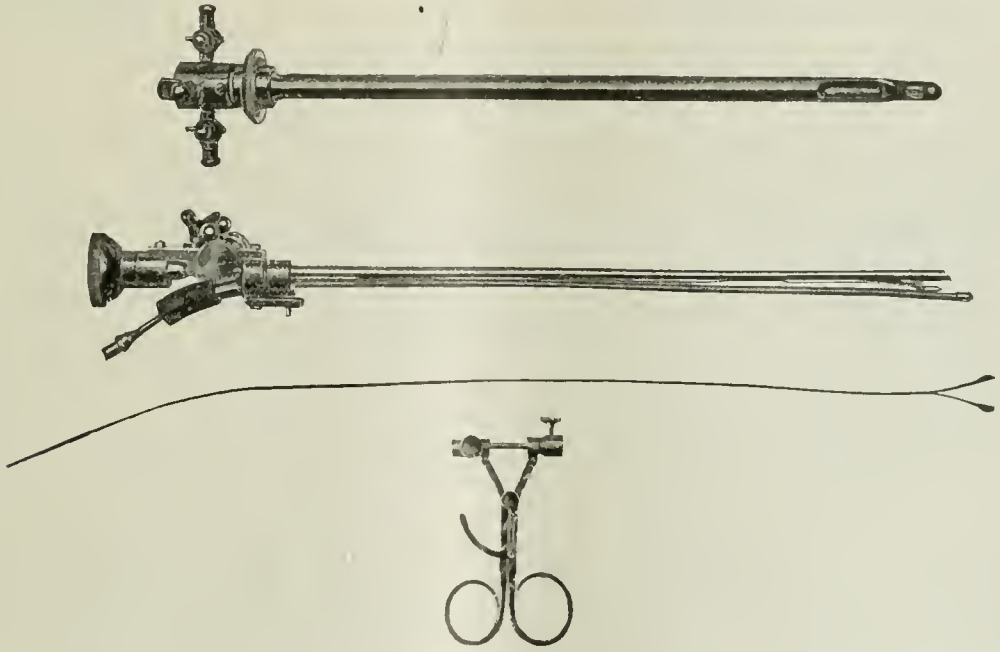

Fig. 2.—From above down, sheath of operating cystoscope, telescope with cannula adjusted; forceps, and handle.

referred him to the Genitourinary Service. On Nov. 13 and 19, cystoscopic examination was unsatisfactory, owing to large amount of free clot and coagula adhering to the tumor. On Nov. 23, after the surface clots were removed with the punch forceps, a sessile tumor was distinctly visible in the right infero-lateral wall of the bladder, not far removed from the sphincter. A broad stem, about 1.5 to 2 cm. in diameter, capped by a fungiform expansion of necrotic tissue and blood clots could be distinctly seen. A number of good pieces were excised with the punch forceps and sent to the laboratory for examination. On Nov. 27, cystocopy was again performed, and it was possible to remove a portion of the margin of the growth, including what appeared to be normal mucous membrane of the bladder. The microscopic sections clearly demonstrated (Nov. 23) the presence of a papillary carcinoma and the pieces removed on Nov. 27 showed submucous infiltration of the healthy wall, and invasion and destruction of the mucous membrane by the neoplasm.

An intravesical extension of prostatic carcinoma will often give a doubtful picture, it being necessary to make a differential diagnosis between primary vesical and primary prostatic neoplasm. The endovesical removal of pieces of such a tumor, followed by histological examination is of inestimable value in diagnosis.

Case II.—H. P., 63 years of age, admitted to the Genitourinary Service, Mt. Sinai Hospital, Oct. 14, 1912, with

hematuria, was found, on rectal examination to have a rather hard prostate, which made one suspicious of carcinoma. On Oct. 18, several pieces of the tumor, together with vesical mucous membrane at the margin of the mass were removed with the author's punch forceps and examined histologically. In Fig. 6 one of the sections illustrates clearly that we were dealing here with a type of carcinoma originating in the prostate gland.

*The excision of suspected vesical lesions.*—We are not infrequently confronted with alterations of the vesical mucous membrane whose exact nature is doubtful. Thus there are cases in which we find numerous tubercle-like eminences that arouse the suspicion of tuberculosis. These sometimes accompany a solitary simple ulcer of the bladder, at other times, are scattered throughout the vesical interior, and, in some instances, even have a definite relation to one or the other ureter.

Case III.—T. L., Russian, 34 years of age, admitted to the Genitourinary Service, Mt. Sinai Hospital, Oct. 25, 1912. He says that a year ago, the right kidney was removed for stone. For four years he has had cough and expectoration, and has lost 28 lbs. in the last six weeks. For a week there have been burning on urination and cloudy urine. He voids very frequently, every ten or fifteen minutes, and thinks that at times he has fever. Physical examination showed pulmonary signs suspicious of tuberculosis. On Oct. 28, 1912, cystoscopy was performed and revealed numerous tubercle-like lesions situated in the neighborhood of the right ureter, also behind the left ureter, and scattered here and there in the bas fond. Similar bodies were also found in the floor of the sphincter. These lesions were regarded as suspicious of tuberculosis, but owing to the absence of any ulcerating process and to the fact that the mucous membrane over these lesions was practically negative the possibility of follicular or lymphoid infiltration could not be ruled out. It seemed more than likely that a lymphoid type of inflammation was present. Therefore, on Nov. 1, the operating cystoscope was introduced and a small piece of the mucous membrane in the neighborhood of the right ureter, including several of the tubercle-like lesions, was removed with the punch forceps. Pathological examination of the specimen showed the absence of any evidence of tuberculosis, and demonstrated that an inflammatory process of the lymphoid type with the formation of lymph follicles under the mucus was present.

Then again, we encounter lesions that suggest vesical metastasis in cases in which we already suspect malignant change in a papilloma or in the prostate. Here the examination of excised vesical foci is of inestimable value. When a diagnosis in any case can be definitely made without causing traumatism of the bladder, it would be unwise to remove pieces for microscopic examination. There is a field, however, in properly selected cases, for comparative study of the gross endovesical appearances and the histopathological picture. Therefore, for purposes of research study, as well as for definite diagnosis, the excision of minute pieces of suspected lesions will doubtless prove valuable.

The following excerpt from one of my histories illustrates the value of removing for microscopic examination suspected foci in the wall of the bladder:

Case IV.—H. P., age 63, admitted to the Genitourinary Service of the Mt. Sinai Hospital Oct. 14, 1912, was found to have a hard prostate, which made one suspicious of carcinoma. Cystoscopic examination revealed a small tumor behind the sphincter on the left side, possibly an extension of a prostatic carcinoma. A small piece of this tumor was removed with the punch-forceps and the diagnosis—carcinoma of the prostate—made in the pathological laboratory. Far removed from this tumor, near the right ureter was a small polypoid excrescence which, on a second cystoscopic examination, had disappeared, leaving a minute ulcer about four millimeters in length. It was decided to remove this ulcer to determine whether a metastasis was situated at this point. The ulcer was removed without trouble by means of the forceps and histologically proved to be *metastatic carcinoma.*

*The removal of vesical calculi.*—Small vesical and ureteral calculi, if they are not too hard, may be crushed by a special miniature lithotrite (Fig. 7). When they are friable, they can be fragmented with the punch forceps, and the pieces can be easily removed with the cup-shaped jaws of the forceps. In the employment of this method of extracting small calculi, the bladder is not subjected to the deleterious effects of aspiration by the usual suction-type of apparatus. In my own experience such suction is invariably followed by intense hyperemia, and frequently by a mild grade of cystitis. By means of the small miniature lithotrite (Fig. 7), and the punch forceps, the removal of descended ureteral stone lying in the bladder becomes extremely easy. In the cases of larger or harder stones that cannot be crushed, the endovesical snare often serves as a reliable extractor.

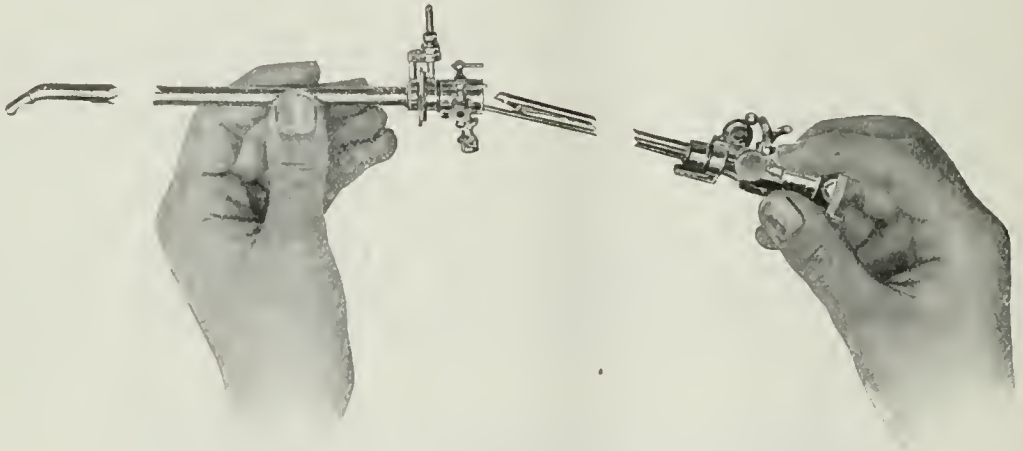

Fig. 3.—Method of introducing working-end in advance of telescope, through the sheath.

*The snaring of papillomata.*—Although the fulguration method is most satisfactory for the destruction of papillomata, experience has taught me that it is not only important to obtain adequate material for pathological examination in every case in which papilloma is suspected, but also that the endovesical operative destruction of these growths can be expedited by combining their surgical removal with cauterization of the bases or pedicles. In the case of small papillomata, the punch forceps introduced through the operating cystoscope suffices. Where we are dealing, however, with large papillomata,

we operate more rapidly and effectively with the old time-honored cold snare. In using the snare, we proceed as follows: The cannula of the snare is manipulated just as a ureteral catheter. The loop must be made ample, so as to easily surround the surface of the growth. The snare is then strongly deflected against the bladder wall. After the tumor has been encircled, we may avoid the recession of the loop by carrying both cystoscope and cannula inward in a compensatory fashion, as the wire is tightened around the pedicle of the growth.

Case V.—H. L., 56 years of age, was referred to me by Dr. K. Schlivek Dec. 10, 1912, because of persistent hematuria. The bleeding dated back nine months, although it was most severe during the past two months. Cystoscopic examination revealed two papillomata, a small one a little less than a centimeter in diameter, behind the right ureteral orifice, a larger tumor, about two and one-half centimeters in diameter, behind the left ureteral orifice. The general appearance of these tumors, their dendritic nature, and the likelihood of the presence of a pedicle determined me in attempting their removal with the endovesical snare. On Dec. 12, therefore, the operating cystoscope was introduced and both tumors removed with the endovesical snare. The left and larger tumor was removed in two pieces; the right one detached as a whole. Rather copious bleeding followed, although it ceased spontaneously after irrigation. As a final step, the bases of the tumor were fulgurated with the Oudin current.

The rapidity and effectiveness of this simple procedure, in this case, has led me to adopt it as a routine[3] measure. Further experience with this method will be described in a future publication. When suspicious mucous membrane at the base of the growth is left behind, this may be excised either at the primary or at the second sitting with the author's punch forceps.

*The dilating of ureters.*—When ureteral calculi are descending or in the cases of strictures, it is often advisable to bring about a certain amount of dilatation of the ureters. Although I have for a number of years practised dilatation of the lower end of the ureter, by means of the simultaneous insertion of two or more ureteral catheters into a ureter, followed by the use of bougies through the operating cystoscope, of late I have been employing graduated metal olives through which the d'Arsonval current is applied. Detachable metal olives are screwed on the end of an insulated wire electrode. These can be introduced into the lower end of the ureter, after the fashion of a ureteral catheter. With a large indifferent electrode over the symphysis or lower abdomen, the second pole being the metal olive, a current of 200 to 400 milliamperes is allowed to pass while gentle pressure is exerted against the point of ureteral obstruction. In many cases we will be surprised to see the obstruction give way after a few seconds' contact. The olive is then removed and a larger one inserted, the process being repeated until the ureter is dilated to 12-18 Fr. or more. This method has been found valuable in many cases where forcible dilatation with bougies has failed. In a number of cases of descending ureteral calculi, where this procedure was carried out, a small stone lodged in the lower part of the ureter was passed shortly after dilatation had been performed.

The following history is a good example of those in my series which show the beneficial effect of dilating the ureter in cases of descending ureteral calculus.

Case VI.—D. K., 42 years of age, admitted to the Genitourinary Service of the Mt. Sinai Hospital, Nov. 6, 1912, complained of having had a severe attack of pain in the left loin, five days before admission. His physician had found blood in the urine and had to give a hypodermic injection of morphine to relieve his distress. (In short, a typical attack of uteral colic.) On Nov. 8, cystoscopy was done, and the ureteral catheter encountered an obstruction in the left ureter about 4-5 cm. from its ostium in the bladder. Although there was no urinary flow when the catheter was first inserted, a sudden gush of slightly cloudy urine occurred when the catheter was pushed against the obstruction. About 10 c.c. were collected in a very few minutes, indicating retention of urine above the obstacle, possibly hydroureter. Oil was injected beyond the stone. *X*-ray examination showed a small shadow at a point corresponding to the obstacle in the path of the left ureter. In view of the findings gained at the first cystoscopic examination, viz., hydroureter and obstruction to the ureteral catheter, and because the oil injection had apparently been of no avail it was decided to dilate the ureter at a second cystoscopy. On Nov. 15, the ureter was dilated by means of the olives and the d'Arsonval current. As a preliminary step, three catheters were inserted into the ureter, two being No. 6 Fr. in diameter, the third being No. 5 Fr. Although the first catheter could be passed as far as the obstacle in the ureter (at 4-5 cm.) the second catheter advanced only 3 cm. and the third entered but a scant centimeter. It therefore became evident that very little could be accomplished by means of the ureteral catheters alone, and after preliminary injection of oil, the olivary method of electric dilatation was begun. Within a few minutes it was possible to dilate the ureter at the site of the stone to 14 Fr. and after this, a No. 9 catheter was inserted into the ureter, a very copious flow of urine being obtained. Four days later the patient returned having spontaneously passed a stone about the size of a small French pea.

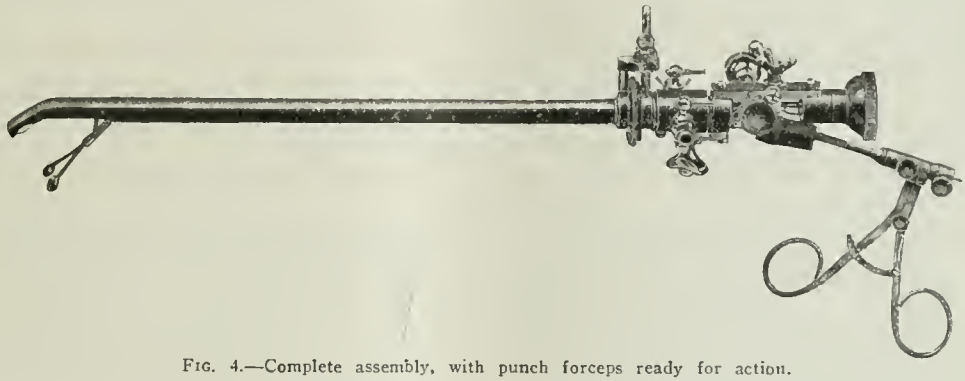

Fig. 4.—Complete assembly, with punch forceps ready for action.

*The excison of ulcers.*—A most remarkable cure following the excision of a callous ulcer of the bladder suggests the value of this procedure, not only in diagnosis, but also in therapy. The observation concerned a woman who had had a solitary ulcer for many months with marked dysuria, urgency of micturition, and who was cured after the ulcer had been excised for purposes of diagnosis.

Case VII.—E. H., female, was operated on by Dr. Lilienthal for left renal tuberculosis and the kidney was removed. For a long time, the usual vesical symptoms persisted, because of the presence of vesical ulceration. These were treated successfully by Dr. Lilienthal with the fulguration method, but an ulceration of the trigone at

the orifice of the ureter persistently remained. Although the bladder appeared to be free from other lesions, the symptoms were severe, there being marked tenesmus, nocturnal micturition, purulent and sanguinous urine and a refractory ulcer. During the months of August and September, 1912, numerous attempts were made to induce cicatrization of the vesical ulceration by the fulguration method. The ulcer was surrounded by a zone of hyperemic swollen mucous membrane, and surmounted by a large necrotic exudate more than a centimeter in diameter. On Oct. 28, 1912, it was finally decided to remove the ulcer with the punch forceps in order to determine whether we were dealing with a tuberculous lesion. Microscopic section revealed only evidences of a chronic inflammatory process with necrosis, absence of mucous membrane, and without signs of tuberculosis. On Nov. 4 the symptoms had abated considerably, the affected area showing a distinct tendency to heal. Two weeks after the excision (Nov. 11) the patient reported herself practically "cured" and the mucous membrane was found to have completely regenerated in the fashion so typical of healed vesical ulceration

More recently another case of simple callous ulcer was treated and cured in the same way.

*The exploratory and therapeutic incision of cysts.*—In rare instances we are called upon to puncture cysts or cystic formation in the bladder interior for therapeutic and diagnostic purposes. The presence of fluid content can be detected if the cystic lesion be punctured with a special endovesical knife. This simple instrument consists of a lance blade or scalpel fitted at the end of a flexible wire or spiral handle and is manipulated in very much the same way as a ureteral catheter. It was found useful in puncturing a case of closed ureter, with ureterocele, and may also be found of value as a preliminary step when a ureter that is to be dilated has an abnormally small orifice.

The utility of a cutting instrument for intravesical work was well demonstrated recently in the following rare and rather remarkable case:

Case VIII.—M. D., admitted to the Genitourinary Service of the Mt. Sinai Hospital Nov. 8, 1912, was examined with the cystoscope and the diagnosis of ureterocele (Fig. 8) was made. On Nov. 18, the operating cystoscope was introduced and the pyriform cystic mass which was situated at the site of the left ureter, and which was about the size of a small cherry, was punctured in four or five places with the endovesical knife. After several punctures had been made, the cystic mass completely collapsed and the ureteral orifice which had been previously discerned lying at the summit was found wide open and gaping. Although the mere puncture of this mass did not suffice to produce permanent collapse, the value of a cutting instrument as an aid to diagnosis, was here well demonstrated.

Experience has taught me that the endovesical knife will not always suffice to cut the mucous membrane of the vesical interior because of the elasticity

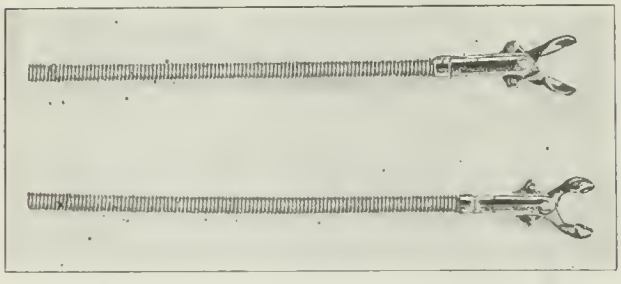

Fig. 5.—New type of cutting and punch forceps in which "recession" is obviated.

and toughness of this membrane. It was therefore found expedient to construct a scissor-forceps which is practically of value in incising the upper ureteral wall whenever it is deemed wise to do ureteral meatotomy before proceeding to dilatation.

*The synchronous employment of three or more instruments.*—Since the operating cystoscope is provided with but a single catheter-outlet and no catheter grooves or beds, it is possible to introduce into the catheterizing telescope more than two catheters.

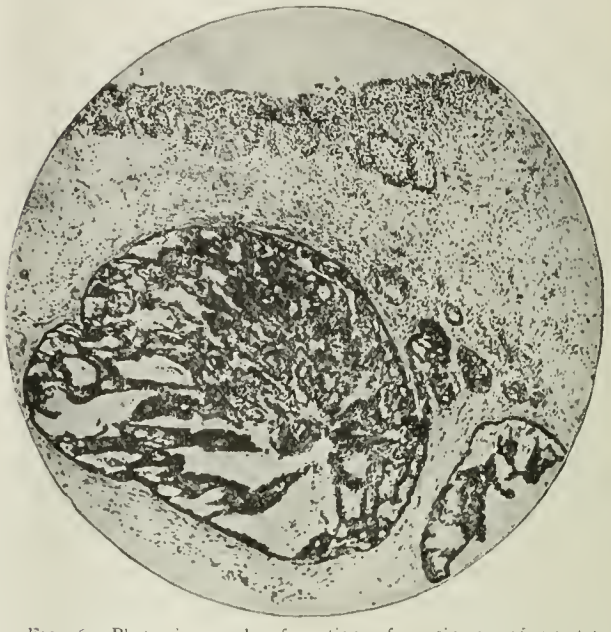

Fig. 6.—Photomicrograph of section of carcinoma of prostate-tissue removed through operating cystoscope; above, intact mucous membrane; in the depths, prostatic type of carcinoma.

By varying the shape of the sheath somewhat (making it somewhat oval) and by enlarging the conical setting at the ocular end of the telescope, we have been able to increase the capacity of this instrument appreciably. Thus two No. 6 Fr. ureteral catheters and a No. 5 catheter can be simultaneouly introduced and employed, there being sufficient room for easy manipulation as well as for irrigation. With increasing experience in cystoscopic work, and with a desire to accomplish more than a mere observation of the interior and mere catheterization of the ureters, there will often arise the occasion for the simultaneous employment of three or more flexible instruments. Thus not infrequently we meet with the following circumstances: One catheter has already been introduced and the urine of the corresponding side is being collected. An obstruction is encountered in the second ureter, and it becomes desirable to explore the obstacle with two catheters, or even to introduce two or more filiforms with a view to overcoming the obstruction.

In pyeloradiography the following condition will not infrequently call for the use of several catheters: One catheter has already been introduced, preparations for the injections of argyrol or collargol on that side having been completed. The other ureteral orifice appears large enough, but the catheter meets with an obstruction lower down. Reflux of the injected argyrol or collargol may in such instances be prevented if a third or a third and fourth catheter be inserted into the ureteral orifice to serve as a plug. This maneuver has been of value to me in many cases where I feared that the argyrol would not find its way into the kidney whose pelvis and ureter were being studied. Even in cases in which pyeloradiography is only called for on one side, such plugging of the ureter may be necessary. When the ureteral orifice is very large, then a second and third catheter will be found useful. Where three ureteral orifices are present in the bladder, or in cases in which there are only two orifices, but where

one ureter takes two catheters, the advantage of being able to employ three catheters simultaneously will be easily appreciated.

Recently in a case of coincident unilateral hydro- and pyonephrosis, where two ureters emptied separately on one side, a third ureter being present on the other side, the utility of triple catheterization was well demonstrated. In another interesting case of ureterocele, where after operative work with the operating cystoscope, the closed ureteral orifice of the affected side was converted into a wide opening, the employment of several catheters was found valuable, not only for purposes of diagnosis, but for the injection of argyrol for the demonstration of the hydronephrosis of the affected side.

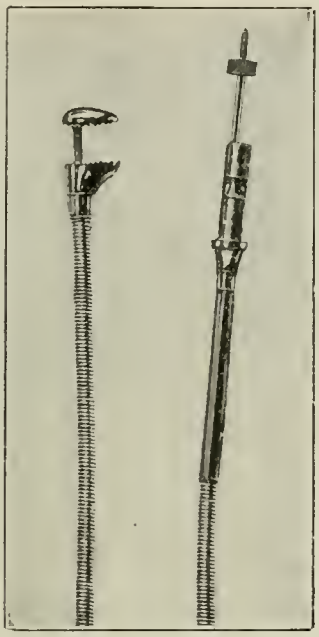

FIG. 7.—Miniature lithotrite; on the left working-end; on the right proximal end for adjustment of handle.

*The diagnosis of renal tuberculosis.*—In a preliminary communication[4] it was pointed out that in the absence of positive cystoscopic findings and in the absence of tubercle bacilli, a diagnosis of renal tuberculosis may often be made by finding miliary tubercles in mucous membrane excised from a suspected orifice, through the operating cystoscope. Since the writing of this paper a number of additional observations have been made, all of which tend to strengthen the view that this procedure is applicable in all cases in which vesical lesions exist and other corroborative findings are absent. Suspicious lesions such as rounded protuberances and edematous mucous membrane may involve a ureteral orifice or may be confined to the trigone or posterior wall of the bladder. From a study of six cases the conclusion seems to be warranted that edema of a ureteral orifice in a case of renal tuberculosis means the presence of miliary tubercles in the mucous membrane. The ureteral orifice may be free from visible change and the lesions may be behind or in front of it. If the latter contain miliary tubercles the diagnosis of renal tuberculosis may be made except in those rare instances in which a suspicion of an ascending process must be entertained.

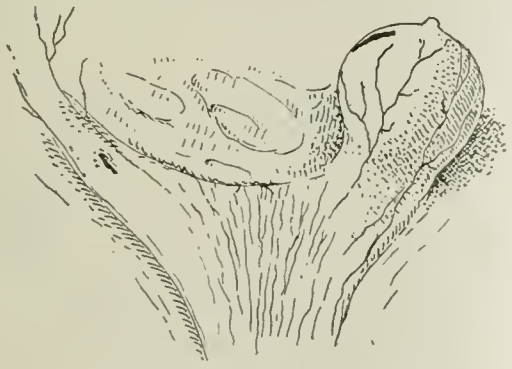

FIG. 8.—Ureterocele operated on by means of operating cystoscope.

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1. Buerger: *American Journal of Dermatology*, May, 1911.

2. Photomicrograph was kindly prepared for me by Dr. F. S. Mandlebaum, Pathologist, Mt. Sinai Hospital.

3. Since writing this paper seven additional cases have been successfully treated in this way.

4. *American Journal of Surgery*, February, 1913.

40 EAST FORTY-FIRST STREET.

## NEW INSTRUMENTS FOR THE DUODENUM AND SMALL INTESTINE.*

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DURING the years 1911-1913 I have devised the following instruments which I may be permitted to describe.

1. The duodenal obturator resembles in construction the pyloric dilator and aspirator (described in my book, "Diseases of the Stomach," fifth edition, p. 386), with the difference that the position of the dilating balloon and the aspirating or injecting arrangement is reversed. The balloon here lies at the end and the aspirating canal above. (Fig. 1.)

When the end of the instrument is way down in the duodenum, the balloon can be filled up with air to such a degree that the lumen of the duodenum is shut off. By injecting a fine bismuth and acacia mixture through the aspirating canal, the duodenum above the balloon becomes filled with the fluid up to the pylorus. An *x*-ray taken in this stage will show the shape of the duodenum. (Fig. 2.)

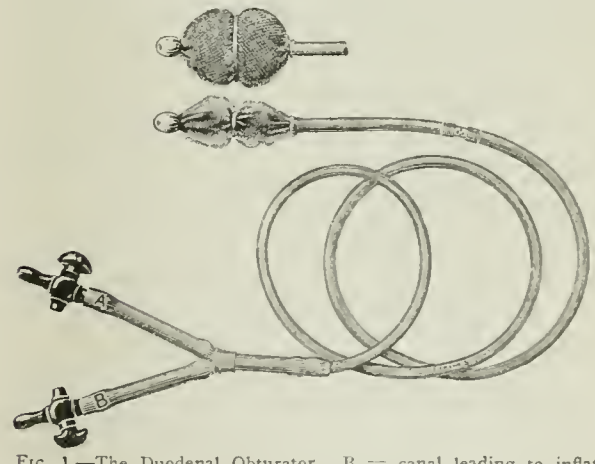


FIG. 1.—The Duodenal Obturator. B = canal leading to inflatable balloon. A = canal leading to aspirating or injecting arrangement.

*Demonstrated before the Medical Society of the County of New York on April 21, 1913.

2. The intestinal delineator is another instrument designed for *x*-ray work. It consists of a thin very flexible rubber tube (size 4 F) through which run two wires and a silk thread. At the end there is either a metal ball or a tiny

Fig. 2.—Shows radiograph of patient H. L., with duodenal obturator deep in the duodenum. The balloon was merely partly filled, so that the bismuth escaped by it into the lower portion of duodenum and beginning of the small intestine.

bucket. The apparatus is two meters long (Fig. 3.)

When the delineator is in the digestive tract the *x*-ray shows its position distinctly. If the end is deep in the small intestine the course of the duodenum and the small intestine can be mapped out. (Fig. 4.)

I am indebted to Dr. W. H. Stewart, radiologist of the German Hospital, for the above excellent *x*-ray pictures which he took for me.

3. The sectional Intestinal Examiner.*—This instrument (See Fig. 5) serves to examine a portion of the duodenum or the small intestine, with regard to its secretion and condition of its mucosa, walling off the juices from above or below. It consists of a three-canal tube (or one outer tube (size 15 F), containing two small caliber tubes) provided with two inflatable balloons between which are situated the end openings of the aspirating or injecting arrangement. The distal end of the instrument branches off into three separate tubes provided with stop-cocks and markings as to where their particular canal leads. (Fig. 5.)

The construction of this last instrument presented many mechanical difficulties which, however, have been successfully overcome. I am indebted for help in this respect to Mr. A. D. Scott and Mr. A. E. Pfarre, of Geo. Tiemann & Co.

Mode of Procedure.—The instrument (the remarks made here apply also to the other two instruments mentioned above) is best introduced about one hour before retiring, and care taken

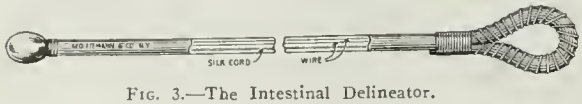


Fig. 3.—The Intestinal Delineator.

that it should go in beyond mark two. When arising the tube is inspected and if it is found that mark two is way in, a slight pull will show whether

*All three instruments can be obtained at Geo. Tiemann & Co.

there is resistance present. If so the probability is that the instrument has reached the duodenum. The middle or distal balloon is now inflated almost to its maximum and pulled up to the pylorus. Here it finds resistance and cannot pass. This makes it

Fig. 4.—X-ray picture of patient H. A., with intestinal delineator *in situ*. The course of the instrument in the stomach, duodenum, and part of the small intestine is distinctly visible.

certain that its position is in the duodenum. Then the end balloon is likewise inflated. A few cubic centimeters (5-10) of water are injected into the separated section of the duodenum. Wait five minutes, then aspirate. A juice is then obtained which originates in the duodenum. If the instrument is just in the position mentioned, the secretion will contain duodenal and pancreatic juices and bile, for the end balloon is just beyond Vater's papilla.

If it is desirable to have duodenal secretion without bile, this may be obtained by having the middle balloon beyond Vater's papilla, when the juice of the second half of the duodenum will be aspirated. Similarly the secretion of the first portion of the duodenum may be obtained by arranging the two balloons somewhat nearer each other, in such a manner that when the middle balloon is near the pylorus the end balloon is above Vater's papilla and not beyond it.

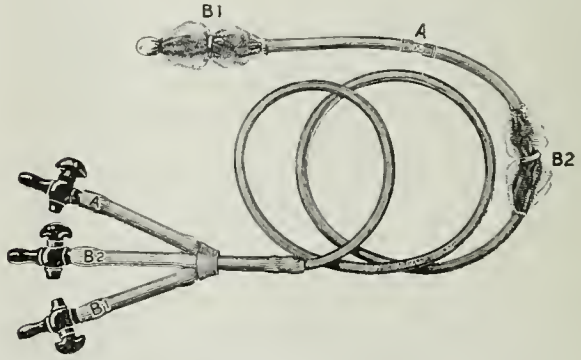


Fig. 5.—The Sectional Intestinal Examiner. A = canal leading to aspirating or injecting arrangement, ending in several small openings A. $B^1$ = canal leading to end balloon. $B^2$ = canal leading to middle balloon.

**Diphtheria of the Stomach.**—F. E. Tylecote concludes that this condition is commoner than appears from the literature. He distinguishes true diphtheria of the stomach, or *diphtherial* gastritis from a mere membranous or *diphtheritic* gastritis.—*British Journal of Children's Diseases.*

# A PARANOID STATE.*

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The increasing interest in psychiatry continually adds to the number of those who puzzle over the difference between a paranoiac and a paranoid. A slavish study of Kraepelin and one good classical case of paranoia presented to us as contrasted with the typical paranoid form of dementia præcox will furnish us with very clear-cut notions as to the difference between the two. But when we pass from the servile study of one textbook on psychiatry to a more extended list of references and also advance into a close acquaintance with many patients of this class, we are confronted by numerous uncertainties and finally adopt the attitude of Dr. White who questions "whether we are not really dealing with two extremes between which every possible transitional form may be found."†

Dementia præcox is a psychosis essentially of the period of puberty and adolescence, characterized by a dementia tending to progress, though frequently interrupted by remissions (White). Although essentially a disease of early life it frequently develops after twenty-five years of age, especially in the paranoid form of which only 40 per cent. appear before the twenty-fifth year. This paranoid form is so called because it resembles paranoia and is principally differentiated from it by the presence of progressive dementia. The predominant element of the paranoiac character is the feeling of suspicion which finally develops into systematized delusions of persecution.

But there are other differences cited between the two, besides the progressive dementia. The principal features of paranoia, as distinguished from the paranoid form of dementia præox, are generally conceded to be the following: The onset is gradual with only a few hallucinations if any. The delusions of persecution or of grandeur are founded on real facts, which are wrongly interpreted, but develop into a coherent and plausible whole and can be most ingeniously explained by the patient. You often cannot tell whether his interesting statements are the truth, unless you know the facts. He appears to be a person of unusual active mentality, generally an entertaining talker—until you have met him several times and learn that you will hear the same old tale. He makes no fantastic statements in general conversation which immediately brand him as insane, neither does he show any gross tricks of gesture and manner. His behavior is almost normal and the emotional attitude is fairly uniform. He is able to occupy himself steadily. Consciousness is unclouded, thought is consistent, and there is absence of progressive dementia, at least until very late in life, when it comes on in the proper time of old age. The delusions never disappear entirely, but at times may be less active.

In the paranoid forms, on the other hand, the onset is comparatively acute, with insomnia, depression or a maniacal condition, loss of appetite, emaciation, etc. Numerous fleeting hallucinations are very prominent and fantastic changeable delusions quickly develop, but are only loosely organized into a system. Delusions of physical influence are very frequent and pronounced. The patient's emotional attitude is subject to frequent, sudden, and marked changes, and he exhibits peculiarities of behavior, such as mannerisms, tricks, negativism. He is flighty and unsteady in his work. His intellect is frequently clouded and there is a progressive dementia. Remissions may occur.

These distinctions sound clear and easy enough, but, as a matter of fact, a diagnosis is often very perplexing for several reasons.

In the first place, paranoids usually do not develop a pronounced disturbance until after twenty-five and their dementia may be very slowly progressive. You may have to wait until a patient is rather advanced in years before you can decide whether he is dementing or not.

In the second place, paranoids very frequently do not exhibit the tricks of manner which other forms of dementia præcox show. They are more self contained, more intelligent, more particular of appearance. Only at times do they break forth in peculiar mannerisms and then usually when fatigued or excited.

In the third place, whether a system of delusions appears fantastic or peculiar depends largely upon the way the observer may look at it. An idea may seem very unreasonable to a casual observer, but the physician who studies further may detect rationality when he becomes acquainted with all the circumstances leading to the patient's belief. Whether an idea is dubbed fantastic or peculiar depends much on the ability of the psychiatrist to fathom the associations.

And now to illustrate the difficulty of an exact diagnosis between the forms under discussion by the history of a case.

The patient was born December 17, 1864, in F————, Ill. She is the third child and first daughter of five children—two boys and three girls. The brothers are both dead. The first grew to adult life and was killed in a railroad accident. His wife and three children are healthy. The second brother died in infancy. The two sisters are living. There is nothing so far as known to indicate a defective nervous heredity except that the father's sister was insane and the patient and her sisters all suffer from periodic headaches. The mother died of apoplexy. The father, a physician of fine standing, died of toxemia from a carbuncle. The patient was graduated from the high school of her town at sixteen years of age. She then went to a denominational college in her native State and was graduated after a three-year course. She taught one year in a graded school of her town. Then she married in September, 1885, and went immediately to S————, in Ohio, to live. Her first child, a son, was born in January, 1889. She did her own work most of the time. When she told me this she sighed and explained that she was not radiantly happy after her marriage, that she felt timid and strange, extremely nervous and lonely, and was very slow at making friends in her new surroundings. She had met her husband only a few times before marriage and never felt really acquainted with him. He was a very Puritanical and ascetic nature, she said, while she had warm southern blood and a social disposition. The second child, a daughter, was born in July, 1891. A few years after this she had a miscarriage. A third child, daughter, was born in February, 1898. About this time she began to suffer from an inguinal hernia. She wore a truss for about a year, but was finally operated upon for this trouble by Dr. Harry Miller, of S————, in 1902. She stayed at the hospital for about two weeks, went home feeling splendid, and was well all summer. A sister who was staying with her at that time helped her with the house work. Her house was large and well kept. She was president of a missionary society, and belonged to two literary clubs. She was greatly respected and admired for her strong character, ability, culture, and social charm. But she was always under a great nervous strain and never felt at home.

Shortly after the hernia operation, the wife of her family physician remarked to her that the doctor thought a great deal of her—admired her. So many things were said to this effect that she thought something was in the wind.

*Read before the Columbus Academy of Medicine, March 10, 1913.

†"Outlines of Psychiatry," by Wm. A. White, M.D., p. 97. *Am. Jour. of Insanity*, July, 1912, p. 27.

She liked her family physician very much and said she was always glad to see him, and he evidently enjoyed her conversation. But being unduly sensitive about the matter, this patient called on his wife and told her that she had no friendship for her husband (the doctor) which could not be shared with her. About this time Dr. Lyman Abbot was publishing an article or series of articles in the *Outlook* in answer to the letter of a woman who had asked his advice in a domestic dilemma. She said she had found her husband was not true to her and she wished to know her Christian duty in regard to the matter. The patient read this correspondence and conceived the idea that the wife of her family physician had written the letter because she thought the doctor in love with said patient. This so troubled her that she told a friend about it and asked her what to do. The friend exclaimed, "Why Mrs. ————, you must be crazy!" To which the patient replied, "I sometimes think I am." She was in a constant state of terror as to what people were saying about her and doing. Her pride, extreme sensitiveness with timidity, and lack of congeniality in her surroundings, together with a critical and egotistical temperament, began to crystallize about these innocent remarks and definite suspicions developed.

It happened that the next winter she had pain and swelling on the same side as the former hernia, but higher up. After months of serious illness, an operation was deemed necessary. I shall quote from a reprint by Dr. Miller, who operated upon her. His paper, "A Case of Combined Extrauterine and Intrauterine Pregnancy," refers to this patient. Has always menstruated regularly until the fall of 1904, when there was a change in the menstruation, though it did not cease with the same regularity as in a normal pregnancy. The pain in the right side at times was quite noticeable. In the early part of November the abdomen in the region of the right iliac fossa became prominent. Though at times there were fainting attacks, there were never manifested symptoms of shock. In the latter part of January, 1905, menstruation ceased entirely, only to commence again in the latter part of February. The flow was irregular and there were present all the symptoms of an impending abortion. About the middle of March the patient was attacked with an acute localized peritonitis in the right iliac region. From the history of the case, learned from her attending physicians, this attack must have been a severe one. During the attack of peritonitis the distention of the abdomen and the pain were so severe that a careful examination could not be tolerated. However, a tumor could be detected in the region of the right ovary. At this period the patient drifted into other and not scientific hands, and while she had seemingly recovered from acute symptoms, she did not recover her former health; the abdomen remained prominent and she was always conscious of pain in the region of the right ovary.

"While I had operated on the patient for the strangulated hernia, I did not see her for the present trouble until about the fourth day of May. I found, upon examination, a tumor about the size of an infant's head, occupying the region of the right iliac fossa, and the uterus, considerably enlarged, crowded into the left iliac fossa. From this history it was the opinion that there existed an extrauterine pregnancy dating from some time in the autumn. This being the conclusion, and an operation being deemed imperative, the patient was removed to the hospital. On the ninth of May the abdomen was opened, and a cyst-like tumor, about the size of an infant's head, was found occupying the right iliac fossa, crowding the uterus over into the left iliac region. * * * * * * * * * The enlarged uterus excited a strong suspicion of there being an intrauterine pregnancy. The walls of the tumor were about an eighth of an inch in thickness; at its lower pole was found a mass composed of tissue resembling in every particular the placenta; the center of the mass measured, roughly, about half an inch in thickness, while at its periphery it was lost in the walls of the tumor. In the pedicle was found an organized blood-clot protruding into the cavity of the sac. The cavity of the sac was distended with dark-colored blood, in which were floating masses somewhat resembling broken-down tissue, probably the fetus having undergone retrograde changes.

"The patient left the operating room in excellent condition, the time for the operation consuming twenty-five minutes. She did well until the morning of the second day after the operation, when I received word from the interne that the patient was having a serious flooding and was suffering severe pains. Before I could reach the hospital she had been delivered of a perfectly formed fetus of about four months. This coincided with the cessation of the menstruation in the latter part of January."

After six weeks at the hospital the patient returned home. She was not able to do much that summer. She remarked with great sarcasm, "They claimed it was a tubal pregnancy." She said a report of it had been sent to all the doctors in S———— from pure malice. After the operation, she said, she did not suffer pain, but had weakness, confusion of mind, and frightful monthly hemorrhages. She thought that her friends treated her peculiarly and there was a spirit of ridicule and something in the air which she could not understand.

A day or so after the operation she saw from the window of her hospital room a dog which had passed through the operating room just before the operation. She recalled the fact that a negro—possibly an orderly or porter—had appeared in the anesthetic room. She did not think much about the dog and negro at the time, but later the memories and associations connected with this event worked dreadful havoc.

After leaving the hospital she had sensations of being pregnant and times of excessive flooding. She felt convinced that during the operation there had been an attempt to wreck her. She felt like a wounded animal under the pressure of adverse circumstances and by the following January had reached a place where she was completely at bay. She was physically ill and thought she was losing her mind. At this time her husband was away on a business trip. She felt imperative need of medical attention and wanted to go where she was not known. So she went to Columbus and took a room at a hotel. Dr. F. F. Lawrence was called in and after her son arrived, arrangements were made to take her to the Lawrence Hospital for curettage. She felt much better after this operation and the next spring took a trip to Washington, D. C., and Old Point and returned home in July. She enjoyed this trip very much and was particularly free from mental and physical worries.

But gradually the old worries came back with greater force. The conviction grew that something would develop bringing upon her an eternal curse. She had horrible sexual dreams at night. She was in great terror of being pregnant with pups or a negro, thought that the reproductive organs of the dog and the negro had been introduced into the uterus in some way, perhaps cut off and sewed up within it during the operation for tubal pregnancy—she did not know how—in order to satisfy some malice. She suspected that compromising pictures had been taken while she was under the anesthetic, that it was quite probable she had been infected with venereal diseases. She even thought that vicious suggestions had been made to her about her family physician. The system of persecution grew to such an extent that the sight of nearly every old acquaintance became unbearable. She refused to shake hands with her physician for fear he had some connection with the malicious plot. She nearly fainted when she met the surgeon who operated upon her.

Not only were all the physicians who had attended her implicated in the plot, but she accused some of the church members of leading immoral lives and being indirectly responsible. She feared that her children were being placed under hypnotic influence and would suffer from the same ideas. On this account, she tried to strangle her eldest daughter in order to protect her from future torture. Help was fortunately secured in time.

In November, 1907, she was taken to the Cincinnati Sanitarium and was discharged the following March as improved. After a visit with her sister in another State for several months, during which she exhibited many peculiarities of conduct, her family moved to Columbus, where they lived for over a year. The last six weeks of this time she spent at the Rodebaugh Sanitarium, where, in May, 1910, Dr. Lawrence did a hysterectomy for myoma of the uterus. She says that her physical health has steadily improved since this operation. A part of the next summer was spent at Wooster with her daughter, the two studying together at the university there. In August she found "they had been working up the insanity business," as she said, and were planning to place her in the Columbus State Hospital. In order to escape she clandestinely made rapid visits to Columbus, to Chicago, to Bloomington, back to Chicago, and then to Columbus.

This is a very long history previous to commitment, but I could hardly trace the development of the patient's delusions and show the gross physical troubles accompanying them without such a narrative. The physical disease no doubt determined the *character* of the delusions, but whether they caused the *formation* of a delusional system is very questionable. The origin of delusion formation most

probably lies purely in the mental constitution. Operations and physical treatment add to the patient's bodily comfort. But such nervous constitutional defects as the majority of insane patients show cannot be remedied by operations. It is true that she felt better after operation, but mental improvement was due to temporary fading of the delusions into the background because her attention was occupied with something new and exacting. These operations did not cure her mental disturbances.

The patient was admitted to this hospital on August 5, 1910, and was sent to Greer Cottage. She was then forty-five years old. Dr. Rowland made a provisional diagnosis of paranoia chiefly because her delusions were well systematized, she showed no signs of dementia, did not exhibit præcox tricks or mannerisms, and her conduct was uniform. After she had been transferred to one of my wards and had been observed for several months, I felt very greatly inclined toward the paranoid form of dementia præcox, because her system of delusions was extremely absurd and she was evidently dementing. At that period she grew more unreasonable in her demands, careless in dress, vacant in expression, and exhibited all the authorized symptoms indicative of dementia—"general dulling, memory weakening, disturbances of attention, impairment of judgment, lessened initiative, inability to concentrate the attention on matters formerly of interest, and a weakening of the normal affectivity."[2] At times she would make requests in a high pitched, unnatural voice in short, quick, choppy sentences, repeating them over and over. But later she regained her former neatness, dignity, intelligent interest in things, and general habits of culture; and when I learned more of her extreme ignorance of anatomical and physiological facts, her atrocious ideas about the possibilities of reproduction did not seem so absurd. Although rational and intelligent above the average on other subjects, no amount of reasoning or instruction could remove her conviction that the impossible feat of which she accused respectable, high-minded physicians, or that something equally fiendish, had been attempted. "I think that physicians would do anything to destroy a patient who tried to bring them to justice," she said. Note that she attributes this imaginary malicious act to vengeance for denunciations which she expressed after the operation was performed—a kind of retrospective falsification of memory.

During this period of improvement she was more like a paranoiac than a paranoid. But she also exhibited marked manic-depressive symptoms of variable intervals, and her relatives say that she has suffered from periods of excitement for many years. At times she suffers from an anxious depressed state lasting from several days to several weeks, and this often culminates in a sick headache, after which she is composed, rational, and appears normal and charming, then gradually her delusions work to the front and she is aggressive, excitable, unreasonable, domineering, and even violent. At such times she tries to run away and fights ferociously when detained—tearing the attendants' clothes, breaking their eyeglasses and using abusive language. From January to June, 1912, she increasingly improved and was granted unrestricted privilege of the grounds. She was then companionable and reasonable. I took long walks with her in which we discussed her delusions. She realized that we wished to help her and were not keeping her here through secret connection with her supposed persecutors. She even acknowledged that perhaps she had been temporarily insane and that certain ideas which she had always insisted upon were founded on facts might have been merely the result of malicious suggestions. Although during many years after the operation for ectopic pregnancy she had lived in constant terror of being or of becoming pregnant with pups as the result of what she thought happened at that time, she now no longer suffered this fear and acknowledged the unusual character of it; but, nevertheless, added shrewdly in support of her former claim that the fact that a certain thing had never happened was no proof at all that it never would happen. She could not be persuaded that the surgeon was entirely innocent, but thought he might not have appreciated the terrible result of what he did. Her delusions, however, did not appear to bother her. She would dig them up when I introduced the subject, discuss them good naturedly, and let them recede into the background of her thoughts, where they were apparently not disturbing her.

Her husband planned to move to Columbus away from her former unpleasant associations and take her out on a trial visit. But he kept postponing this move—for which no one can blame him—and one day, the patient grew tired of waiting and left us for home, first visiting a friend in Columbus on her way. The husband suggested allowing her to remain at home and later the family moved to Columbus. She kept house with the help of her daughter. The first few weeks she was somewhat depressed, but livable, but later grew more active and finally developed plans for a permanent home in Columbus. She wanted to take a house which her husband considered above his means. The patient's social ambitions as opposed to her husband's moderate means and naturally simple tastes had always been a source of contention and family unhappiness. In a hot discussion on this subject one night—several months after her trial visit—she became very violent in language and actions and struck her husband. He immediately telephoned for the sheriff and she was brought back to the institution about midnight. Since then, until very recently, she has made every effort to get away and we have been obliged to keep her in a back ward for safety. She has declared over and over again that every statement she ever made about doctors is absolutely true and she would use every effort to bring them to justice. She has also exhibited some præcox mannerisms, such as giggling and tripping around the nurses and repeating foolish, taunting things rapidly over and over. Her language once or twice has been profane and abusive, which is quite unlike her. At present she is improving again.

I very much suspect that her system of delusions has a Freudian origin in a submerged complex or psychic trauma of sexual origin. She had never, you remember, to use her own language, "been radiantly happy" with her husband. Perhaps the idea has already occurred to you that she had found an ideal in her family physician, but being a woman of exemplary conventional training, she would not admit this infatuation even to herself, much less acknowledge or show it to anyone else. Around this submerged emotion, I judge, she built a system of imaginary accusations from others, also persecutions, against which she struggled to protect herself by insane acts. Although aware that Freud would not attempt to use his method on such a chronic and marked case of insanity, I would like to see him push a psychanalysis to its conclusion with a patient of this sort. I have never dared to suggest to her what her original psychic sore spot might be, for the merest hint of such an emotion would make her furious and most probably involve the one suggesting it in her system of delusions.

There has been no attempt to present a complete psychanalysis of this case. Only enough of the patient's mental condition has been written up to justify asking you, what is the practical difference whether we call this a case of paranoia with manic-depressive symptoms, or a manic-depressive with paranoid delusions, or a dementia præcox of the paranoid type late in developing and very slow in dementing. The most pronounced fact about her mental trouble is her *paranoid state*. Much useless confusion has been avoided in several hospitals by classifying all these conditions resembling the classical paranoia as *paranoid states*. Of course, if a case presenting paranoid delusions very apparently belongs to some other classification as paresis, the toxic psychoses, those of the involution period, dementia præcox, manic depressive insanity, and some others, the most obvious diagnosis is the proper one. But it seems foolish not to make a diagnosis of these troublesome cases more easy by adopting the classification of *paranoid states*.

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**Cholecystitis and Leucocytosis.**—Lutier and Salignat note that a leucocytosis of between 12,000 and 15,000 is one of the important symptoms of cholecystitis. There is also a polynucleosis similar to that associated with acute infectious processes.—*Gazette des Hopitaux.*

# A CASE OF GRAVES' DISEASE WITH SCLERODERMA AND A POSITIVE WASSERMANN REACTION, TREATED WITH SALVARSAN.*

By H. F. L. ZIEGEL, M.D.,

NEW YORK.

Mrs. J. A., 28 years of age, has had no serious previous illness except malaria in Italy when she was 9 years old. Her menstruation started at 13. At the age of 15 she married. Her first child died of meningitis in infancy. Her second child, a boy 7 years of age, is healthy; in him the Wassermann was negative one year ago. Her husband gives no history or clinical evidence of syphilis; in him the Wassermann was negative in 1911. Four years ago she again became pregnant but aborted at the second month. Since then her menstruation has been regular, moderate, painless, of three days' duration, and without marked molimina.

The patient first came under my observation in August, 1911. She had been nervous since a child, but no swelling in the neck had been noticed till Dr. Howard Fox, who four months previously had seen her at the Skin and Cancer Hospital, called her attention to this swelling. For two years previously (so she said in August, 1911) she had been more nervous and there had also been cardiac palpitation on exertion, visual disturbance, and difficulty in swallowing. Five months previously a lump was noticed on the external aspect of the left arm just beneath the shoulder. Later other hard areas appeared on the arm, behind the shoulder, on the anterior aspect of the elbow, and on the upper forearm. There was no pain, but occasional slight pruritus. She slept and ate well and did not feel weak. Defecation and urination were normal. The patient came complaining of the annoyance due to the hardness and discoloration of the skin, which had been increasing rapidly, also of "nervousness," headaches, visual disturbance, difficulty in swallowing, and cardiac palpitation on exertion.

Physical examination made in August, 1911 (some of the negative findings being omitted), showed considerable uniform swelling of the thyroid gland, moderate exophthalmos, presence of Graefe's and Moebius' signs, pulse frequency of 96° to 100°. No marked tremor. Extending from below the left cubital fossa upwards to the point of the shoulder, on the outer and front aspects of the left upper arm, and over the left scapula in the region of the spine, was a hardened condition of the skin, nodular in areas. The affected skin was discolored and furrowed, and in the central portions apparently longest involved it was slightly scaly. In some areas there was hard edema; here the skin could not be pinched up; it did not pit on pressure. Where most affected it was attached to the deeper tissues. The infiltration merged into the surrounding apparently normal skin. The color resembled somewhat that of ivory. There was no sclerodactylie, the skin of the lower forearm, hand, and fingers not being involved. The pupils reacted normally. Drs. Martin Cohen and Mulcahey made ophthalmoscopic examinations and found the fundus normal. There was slight general enlargement of the lymph nodes. The breasts were negative. The patient's weight was 149 pounds. The blood was negative as to anemia; the leucocytes numbered 9,000, with a slight relative increase of the mononuclear cells. The urine was negative.

August 18, 1911: the Noguchi modification of the Wassermann reaction performed at the Rockefeller Institute was positive. The Wassermann reaction performed by Dr. J. J. Hertz was positive. August 24: Salvarsan, 0.5 gram suspended in 3 c.c. of iodipin, was injected into the right sacrospinal muscle. On the following day the pain was slight at the site of injection, the pulse was 100, the rectal temperature was 100° F., and apparently no ill effects followed the treatment. August 29: Tumors of the skin softer. At the periphery of the areas where there is hard edema normal skin is replacing the hard patches. September 5: Further replacement by normal skin of sclerodermatous areas, especially those on the forearm and in the scapular region. Gaining in weight—now 150 pounds.

September 6, 1911: Repetition of salvarsan treatment; 0.5 gram of arsenobenzol in iodipin suspension injected into the left sacrospinal muscle. Though there was no constitutional reaction, the pain at the site of injection was very severe, and ever since then the patient has refused all injections. September 14: Further gain in weight, which is now 153½ pounds. The size of the thyroid gland has steadily diminished and the pulse has continuously become less rapid since the first salvarsan injection. To-day the pulse frequency is 80. The second injection of salvarsan was not immediately followed by marked changes in the skin condition as was the first treatment. The urine is negative. Arsenous acid, 1/30 grain, and sajodin, 5 grains, were started t.i.d. October 19: Wassermann negative (Dr. Hertz). The luetin test performed ten days ago is negative. November 20: Slow but steady replacement of hard patches by normal skin. The patient says she is much less nervous than formerly. The pulse rate is now 76. The thyroid swelling has diminished markedly since the salvarsan treatment. December 18, 1911: Further improvement in the skin condition. As to the nodules beneath the spine of the scapula, many have gone entirely and the remaining ones are softer and more movable. The forearm and cubital fossa are now entirely free of the skin lesions. The patient no longer complains of headaches and is less nervous. Pulse 76. Weight 156 pounds.

The patient unfortunately refuses an intravenous injection of salvarsan, also another intramuscular injection, though further salvarsan treatment was strongly urged. February 12, 1912: There has been little change during the past two months in the skin condition; it is now about one-third of its extent when first seen a year and a half ago; the tumors beneath the skin are not nearly as numerous as originally and those that remain are softer. Weight 160¾ pounds. Pulse 72. May 6, 1912: Continuous improvement in the general condition. Weight now 164 pounds. Pulse 72. The patient has been getting Fowler's solution, 10 minims, t.i.d. December 20, 1912: During the past seven months there has been no marked increase nor diminution in the extent of the morphea. Pulse 76. Arsenic internally continued, now in the form of the Dürckheimer Maxquelle water, 1 dram, t.i.d., p.c. April 1, 1913: There is noted some further improvement in the skin condition, which is now less than one-third of its extent when first seen by the writer. Bands

*Report read and case presented in the Section on Medicine, New York Academy of Medicine, May 20, 1913.

of normal skin are extending into the affected areas, causing the latter to appear as islands. Most of the nodules disappeared after the salvarsan injections one year and a half ago, and those that remain are softer and smaller than originally. The patient absolutely refuses any more injections. The weight is now 179 pounds, *i.e.* a gain of 30 pounds since salvarsan was first given. The pulse frequency is 68. There is now very little swelling of the thyroid. Since the salvarsan treatment there has been no recurrence of the headaches, "nervousness," cardiac palpitation, and difficulty in swallowing. April 7, 1913: The luetin test has again been negative. Dr. Howard Fox and the New York Board of Health found the Wassermann negative.

*Summary and Conclusions.*—In a married woman 28 years of age with Graves' disease complicated with the circumscribed form of scleroderma or morphea the Wassermann reaction was positive. There was no history or clinical evidence of syphilis. In a son 7 years of age and in the husband the Wassermann was negative. Since two intramuscular injections of salvarsan of 0.5 gram each were given one year and nine months ago the Wassermann has been negative; moreover, the treatment with arsenobenzol was followed by a gain of 30 pounds in weight, by considerable diminution in the thyroid swelling, by disappearance of the nervous symptoms and the tachycardia, and by marked improvement in the skin condition. Most of the nodules in the skin disappeared, those that remain are softer and smaller, and the scleroderma is now less than one-third of its extent when first seen; the skin on the upper forearm, in the cubital fossa and the scapular region, which regions were originally involved, is now apparently normal. Unfortunately there was considerable pain caused by the second intramuscular injection, and ever since then further treatment with salvarsan has been refused, though an intravenous injection was advised; instead arsenic in various forms has been given by mouth.

From an experience limited to one case it would surely not be justifiable to draw conclusions as to the therapeutic value of salvarsan in the conditions described. Moreover, a rational interpretation of the changes that have taken place would have to be based partly upon answers to the following questions: Did this patient possibly have latent syphilis, despite the absence of anamnestic and clinical evidence of the disease, and were the favorable changes and the negative Wassermann due to the antiluetic effect of the salvarsan? Did the arsenic have a direct remedial influence on the Graves' disease and the scleroderma? Or did the improvement occur spontaneously and coincidentally, *after* rather than *because* of the arsenic therapy? Certain it is, however, that the administration of salvarsan and other forms of arsenic was followed by negative Wassermann reactions, by marked improvement in the scleroderma and by symptomatic cure of the Graves' disease.

8 West Eighty-sixth Street.

## LOCAL AUTOGENOUS TEMPERATURE VARIATIONS, A CAUSE OF LABYRINTHINE VERTIGO.

PRELIMINARY REPORT.

By EDMUND PRINCE FOWLER, M.D.,

NEW YORK.

Sufficient heat or cold applied near the static labyrinth will produce vertigo and usualy nystagmus in definite directions depending upon the position of the head. The degree of vertigo, nystagmus, etc., varies with the sensitiveness of the organ and the amount and kind of tissue intervening between the labyrinth and the place of application of the heat or the cold.

The poor conductivity for heat of the tissues surrounding the labyrinth and of the blood and tissue currents, protects the semicircular canals and utricle from extreme temperature variations, and it is apparent that with the usual methods of applying heat or cold the temperature reaching the canals can be but a small fraction of a degree different from that already surrounding them. The bony labyrinth walls are only relatively good conductors of heat and their specific heat is low, but being surrounded by poorly conducting bone and tissues of high specific heat, it follows that they are quickly affected by changes in temperature and that such variations will persist near the area of application for appreciable periods of time.

The temperature of inflamed or congested tissue is never higher than the inner body temperatures, but near the surface of the body it is more elevated than surrounding uninflamed or non-congested tissues. Portions of the static labyrinth are near the surface of the body, and it follows that localized inflammations or congestion or anemias may bring about variations in temperatures and that these variations near the labyrinth will affect the flow of the endolymph, and if of sufficient intensity will cause vertigo and other similarly produced phenomena. Moreover, local relative heat or cold will cause hyper- or hypo-activity of the end organs.

This understanding of the cause of vertigo is in accord with my clinical observations. It also throws light upon many heretofore unexplained phenomena in otological practice and upon labyrinthine action in health and in disease.

I will fully report on this subject in the near future. At this time I wish simply to record my discovery.

616 Madison Avenue.

**Actinomycosis of the Liver in a Syphilitic Subject.**—H. D. Rolleston reports the case of a ragsorter, aged 29, who contracted syphilis eight years ago and had a fall on the right side one and a half years ago. About June 1, 1912, burning pain began in the hepatic region, and about June 10 he noticed a swelling in this situation. On admission there was a firm tumor measuring 3 in. by 2½ in. below the right costal arch, fixed so that it did not move with respiration. There were old scars on the face and neck and an enormous white serpiginous scar over the front of the chest. The spleen was not palpable. The urine contained albumin. The heart and lungs were normal. As the Wassermann reaction was strongly positive and he had irregular fever, the condition being thought to be gummatous, iodides were given. The tumor softened, and on being incised on June 30 gave exit to pus containing streptothrix mycelium. On July 18 the abscess was opened up and thoroughly scraped. Shortly after this operation there was a small hematemesis which contained actinomycotic granules. The patient, who is not very tolerant to iodides, has had various modifications of the latter, and has also had an autogenous streptothrix vaccine administered. The liver is much enlarged, and there are the scars of sinuses which from time to time discharge pus containing a Gram-positive streptothrix with well-developed clubs; some of the mycelium resemble streptococcic chains. The urine constantly contains albumin, the temperature is irregular, and the liver has tender spots.—*Proceedings of the Royal Society of Medicine.*

**Fulminating Secondary Hemothorax.**—G. Lardennois reports a case of gunshot wound of the lung in which at first the amount of hemorrhage was slight, but in which on the fifth day there occurred a rapid and fatal hemorrhage into the pleural cavity.—*Gazette des Hopitaux.*

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## EDUCATION OF THE PUBLIC REGARDING THE CANCER MENACE.

THAT cancer is on the increase is a fact known in a general way by the medical profession, but whether this increase is real or only apparent is still a subject of debate. Mr. Frederick L. Hoffman, statistician of the Prudential Insurance Company of America, in an address on "The Menace of Cancer" delivered before the American Gynecological Society on May 7, gave interesting statistics on the prevalence of the disease. He said that the cancer question was without doubt entitled to serious consideration, not alone because of the terrible and insidious character of the disease, but because of the constantly increasing death rate, with a resulting heavy mortality in adult life. The approximate number of deaths per annum in the United States from cancer is 75,000, and for the civilized world about half a million.

Due allowance being made for possible inaccuracy of the statistical information on the mortality from cancer, there is sufficient evidence, Mr. Hoffman believes, that cancer is on the increase in the United States, though to a variable degree, according to age, sex, race, and locality. Of these, age is the most important factor, since cancer is relatively rare in early life, but quite common after the age of forty. The death rate from cancer increases slowly to the age of thirty-five, after which the rate increases rapidly to the end of life. It is higher throughout for women, on account of the mortality from cancer of the breast and organs of generation.

In 1910 there were 12,557 more deaths from cancer than from tuberculosis in the registration area, thereby showing the greater importance of cancer over tuberculosis, and the great need of education in the knowledge of the disease.

Cancer is apparently rare among the East Indians and also among our native Indians, and very little known among the Chinese, either here or in China. While the cancer death rates for different countries are not strictly comparable, such surprising differences have been shown that it seems safe to conclude that local conditions are in part responsible for the prevalence or absence of the disease. Switzerland, the Netherlands, and Norway show the highest rate; Jamaica, Servia, and Ceylon, the lowest; with the United States midway between them. Germany and Austria rank a little higher than the United States, and slightly lower than Ireland and New Zealand. It has been shown by the returns for the United States registration area that the mortality from cancer of the stomach and liver is about the same for men and women, with a higher rate among women for cancer of the rectum, intestines, and peritoneum, and a higher rate among men for cancer of the buccal cavity and skin. Excluding cancer of the generative organs and the breast, the death rate of the two sexes is about the same, the liability of women to cancer of the generative organs and breast accounting for the greater cancer death rate among women generally. Statistics also tend to show that cancer of these special organs is greater among married women and widows than among single women.

Regarding the theories of cancer, no trustworthy statistics have been obtained to substantiate the theory of heredity or the transmission from man to man; but a little more reliable evidence can be given to prove that certain occupations predispose to cancer. Also, making due allowance for differences depending upon age and sex, persons above the average in weight seem more predisposed to cancer than their thinner brethren. Finally, as regards the question whether statistical evidence of the increase in cancer can be relied upon, Mr. Hoffman believes that no mere improvement in diagnosis can explain the gradual rise in the cancer death rate in the American States and cities during the past thirty or forty years.

A special analysis of the combined statistics of American cities since 1870 further sustains the conclusion that the increase in cancer is real and not apparent. A similar increase has been observed in all civilized countries, showing that the liability to cancerous affections is greater at the present time than in the past. The menace of cancer is, therefore, real and not merely apparent, and of special interest to the adult population, especially those over forty years of age. Up to the present time the public have been in great ignorance concerning the treacherous and rapidly spreading results of cancer. It is now time they should be enlightened, while not being unduly frightened. Indeed, a nation-wide campaign of education would greatly reduce the mortality from this preventable disease, bringing enormous benefits to all mankind. Educational campaigns have been successful in Germany and other European cities, and they would be even more so in the United States. Toward this end the work of cancer research funds and intelligently conducted investigations would produce most useful results. In brief, cancer is a fearful menace to mankind, causing about 500,000 deaths per annum in the civilized world.

While early operation appears to offer the greatest hope of recovery at the present time, evidence is beginning to show that nonoperative treatment, even if not a certain cure, may offer at least material alleviation of pain and postponement of death for several years.

## SCARLATINA BENIGNA.

There is said to be a type of scarlatina so benign that it is not transmissible. It has gradually become the parent of the disease as we know it to-day. Another type entitled to this designation is inoculation scarlatina, as seen especially in Russia, and socalled symptomatic scarlatinas might also be classed here. But in the ordinary sense of the term, benign scarlatina is the commonest expression of scarlet fever in its ordinary endemic form, and while it is not the custom to separate the mild from the more severe types, it is a question as to whether such separation may not be justifiable.

At a recent meeting of the Basle Medical Society (*Deutsche medizinische Wochenschrift,* May 15) Wolter summed up all the scarlatina cases treated at the university clinic for a full year. The number was 241 and there were but three deaths (1.2 per cent.). The exact causes of death are not given and when we bear in mind the extreme youth of most patients such a record is practically clean. At the same clinic for the three years preceding 694 cases were treated with but 11 deaths (1.58 per cent.). The disease was so mild in degree that only symptomatic measures were required for treatment. The question which naturally asserts itself is why is it not desirable to speak of this expression of scarlatina as essentially benign because uncomplicated? The complications are in no wise characteristic of the disease, but may be seen in a number of other conditions. Why speak of three or more degrees of this affection? There is but little analogy or precedent for such a course, which means several degrees of virulence with disregard for complications. Folk scourge appears to belong to two groups. In one the condition is usually benign, the severe and malignant forms being in the minority; while in the other the process is essentially grave, although abortive cases may occur. Thus typhus exanthematicus is one of the most fatal plagues, yet we know now that it may rarely occur in a mild, sporadic form. In scarlatina exactly opposite conditions occur.

## GRADING MILK AND CREAM.

A new method of grading milk has been adopted by the health department of the District of Columbia and is described by Dr. W. C. Woodward, health officer of the District of Columbia, in Reprint No. 117 from Public Health Reports. One hundred points are allowed for the dairy farm, both equipment and management; 100 points are allowed for the cattle; 100 points are allowed for the milk distributing station, if the milk is not distributed directly from the farm; 100 points are allowed for the chemical analysis; and 200 points are allowed for the bacteriological examination. The total number of possible points is 600 if there is a milk distributing station and 500 if there is no such station. By dividing the total by the number of points possible a figure is obtained in the form of a decimal fraction representing the grade of milk. Any unusual conditions bearing upon the nutritive quality of the milk or on its wholesomeness, but not susceptible of being reduced to a percentage basis, are to be set forth in an explanatory note, if the grade is computed during the continuance of such conditions; such, for instance, as a milk-borne outbreak of typhoid fever or other contagious disease. The manner in which the cattle and the dairies are rated and the rating of chemical analysis are all set down in the reprint, but are somewhat too complicated, or rather it might be said too lengthy, to be described here.

However, it may be noted that the plan outlined for the evaluation of the bacteriological findings lays down a basis for raw milk different from that for pasteurized milk. This is fair when the ratings of two or more samples of milk of the same class are to be compared, but it would be manifestly unjust, as is pointed out in the article, to compare such a rating of raw milk with a rating of pasteurized milk unless the difference is taken into consideration. In order to prevent such unfair comparisons, ratings for pasteurized milk should be accompanied always by some descriptive term such as the word "pasteurized" and if it is desired to compare the ratings of pasteurized milk with a rating of raw milk, both should be reckoned on the same basis, preferably that for raw milk. The advantages claimed for the method of grading milk here described are that it will reduce to a minimum the influence of the personal equation. The scoring of a single farm by the same dairy farm inspector at different times or, as will most commonly be the case, the scoring of different farms by different inspectors at different times, and the scoring of the dairy or milk shop at yet different times and by other inspectors, will reduce the personal equation very much; and with respect to all, except possibly the very last score, which will be taken into consideration when any given milk grade is computed, the interested farmer or milk dealer will have the opportunity to appeal from the inspector to the higher supervising officer before the score enters into the grading.

## Treatment of Frambesia with Salvarsan.

Frambesia or yaws, although seldom in itself fatal, is a disfiguring, unsightly, and repulsive affection. Many hold that it is of syphilitic origin, and from the manner in which it has been successfully treated by the same remedies which are effective in syphilis it would seem that this contention is correct. Now Passed Assistant Surgeon E. U. Reed, U. S. Navy, reports in the *U. S. Naval Bulletin* for April cases of frambesia in Samoa cured by the administration of salvarsan, a result which gives further weight to the evidence in support of the complaint being of syphilitic origin. From September 1, 1911, to April 1, 1912, eighty-three cases of frambesia were treated with salvarsan at the naval station, Tutuila, Samoa. The drug was neutralized with 2 per cent. sodium hydrate solution and injected into the muscles of one buttock. Complete and permanent cures were recorded in fifty-three cases. In practically all of these cases the yaws lesions dried up rapidly, the crusts fell off, and in 8 to 10 days the only traces of the disease were red discolorations of the skin where previously had been large elevated masses of tissue. The doses given for the different ages depended somewhat upon the severity of infection and the strength

of the individual. According to Reed no syphilis has ever been recorded as contracted in American Samoa and he has seen no cases of syphilis among the Samoans after holding large clinics for over a year. This is possibly because they have become so thoroughly syphilized that the poison of the disease can produce only the milder lesion of yaws. The use of salvarsan, says Reed, has so greatly diminished the prevalence of the affection in the island that children with large repulsive yaws lesions are seldom seem, whereas they were formerly a common sight.

### The Overlapping of "Diatheses" and "Constitutions."

The reader of to-day cannot fail to be impressed with the great number of conditions alleged to form anlage for disease—and this, too, in the days of modern biometry. To enumerate only a few we have Czerny's exudative diathesis, enteroptosis, Stiller's asthenia, spasmophilia, hypothyroidism, intestinal toxemia, and status thymico-lymphaticus. All these conditions are described minutely by their sponsors; hence it is the more surprising to find that two conditions apparently without any natural affinity present in part very similar syndromes. That two conditions representing inferiority should coexist at times in an inferior organism is to be expected, but it is difficult to understand how an acquired condition like intestinal autotoxemia should have many symptoms in common with hypothyroidism. At the Deutscher Congress f. innere Medizin, held last month at Wiesbaden, Jamin recognized a basic condition "juvenile asthenia," derived from Stiller's general conception of asthenia, and made chlorosis its chief expression. The main symptoms are weakness and pallor, the latter not accounted for by the red blood cell count, which may be normal in the worst cases. The opinion is growing that these various anlage for disease all repose upon developmental anomalies of the glands of internal secretions. This view does not exclude a like origin for conditions first apparent late in life.

### The Most Recent Case of Thoracotomy for Pulmonary Embolism.

The claim has often been heard that under an optimum of circumstances life will yet be saved in embolism of the pulmonary artery. A case recently reported by Rose before the Aerztlicher Verein of Hamburg (*Münchener medizinische Wochenschrift*, May 20) appears to show that the most favorable conditions by no means assure recovery. Rose was getting ready to operate on a patient when word was brought that a woman on the fourteenth day after laparotomy had suddenly collapsed while laughing. The surgeon at once transferred his activities to the second patient and at the end of two minutes (!) had her pulmonary artery exposed. From it he extirpated an embolus 12 cm. long and as thick as a man's finger. Despite artificial respiration, direct heart massage, and injections of adrenalin and digitalin the patient died.

### Natural Color Photography and Forensic Medicine

A natural query has always been, "What advantages do autochromes possess over photographs artificially colored?" granted, of course, that the tints can be accurately reproduced. The answer is equally obvious, for natural colors are to be desired, especially when something of material import is actually at stake. An artificially colored exhibit in a criminal trial, when the color was the point at issue, should constitute evidence of considerable value. Burger exhibited, on Feb. 17, forty autochromes of forensic import to the Berlin Society of Psychiatry and Nervous Diseases (*Berliner klinische Wochenschrift*, April 21). These were intended for use in identification of individuals, especially the drowned, and of blood stains, ecchymoses, burns of various degrees, gunpowder stains, and intracutaneous marks. Certain tissues of forensic importance rapidly lose their normal hue on preservation and these should be photographed in natural colors. The "cyanide of potassium stomach" is a case in point. Autochromes of blood spectra, blood crystals, etc., are practicable for the same reason. It is self-evident that autochromes are of great value in teaching.

### Sanatoria and the Public Health.

The statement has frequently been made that sanatoria for the treatment of those suffering from tuberculosis are of value, but that up to a comparatively recent date their value has been somewhat exaggerated. The sanatorium is needed in the fight against tuberculosis, but it is only one factor and probably not the most important. In the *Canadian Public Health Journal*, April, 1913, is a paper by W. B. Kendall, physician-in-chief of the Muskoka Cottage Sanatorium and the Muskoka Free Hospital for Consumptives, in which is discussed the value of sanatoria from the standpoint of public health. It is rightly shown that a person suffering from a communicable disease is a source of danger to the community, and as ignorance is possibly the greatest predisposing cause of any disease, it is at once necessary and important that sick persons should be taught, and this with all promptness and thoroughness. It is in this regard that sanatoria are of the greatest possible importance to the patients as well as to the general public.

## News of the Week.

**Deaths in New York.**—During the week ending June 7, there were reported in New York a total of 1,447 deaths, as against 1,338 in the corresponding week of 1912, an increase of 109. There was an increase of 61 deaths of children under five years of age, and of 56 deaths of persons between five and sixty-five, and a decrease of 8 deaths of persons over sixty-five.

**New Nurses' Home.**—The Red Cross Hospital on Central Park West, New York, is about to increase its facilities by adding two floors to the four-story rear extension of the hospital building, at a cost of $20,000. The addition will be used as a nurses' home.

**Seaside Hospital.**—The reconstructed main building of the Seaside Hospital maintained by St. John's Guild at New Dorp, S. I., was dedicated on June 12. The new building is a model of its kind, the wards being in wings open on either side with a solarium at the ends. It is of fireproof construction, can accommodate 400 patients, and was erected at a cost of $150,000. Dr. Abraham Jacobi, president of the Medical Board of St. John's Guild,

was one of the speakers at the dedication exercises.

**Public Health Service.**—The United States Public Health Service will hold examinations on July 7, 1913, and on August 4, 1913, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between 23 and 32 years of age, of good moral character, and graduates of a reputable medical college with at least one year's hospital experience or two years' professional work. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. After four years' service assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive $2,000, passed assistant surgeon, $2,400; surgeons, $3,000; senior surgeons, $3,500; and assistant surgeon generals, $4,000 a year. Further information may be obtained upon application to the "Surgeon General, Public Health Service, Washington, D. C."

**Safeguarding Foodstuffs.**—Basing its action upon a recently enacted State law providing that no diseased person shall be allowed to handle foodstuffs in stores, restaurants, bakeries, or factories, the Board of Health of Grand Forks, N. D., has issued an order making employers liable to criminal prosecution if they employ in such work any one who is affected with a contagious or infectious disease.

**Bulletin of the Manila Medical Society.**—The Council of the Manila Medical Society announces that in consequence of an extensive fire which has destroyed manuscript, plates, and other property, the publication of the *Bulletin of the Manila Medical Society* has been suspended indefinitely.

**Dr. Robert Abbe** of New York sailed for Europe, June 10. He will present the subject of "Radium in Malignant Disease" before the International Congress of Medicine in London, August 7, having received special appointment for this purpose two years ago.

**Fordham University.**—At the annual commencement of Fordham University, New York, on June 10, the degree of doctor of medicine was conferred upon twenty-eight graduates of the Medical School.

**Cornell University.**—Nineteen graduates, including two women, received the degree of doctor of medicine from Cornell University, at the annual exercises of the Cornell Medical College held in New York on June 12. Addresses were made by Dean Polk and by Acting President Crane of the University, and it was announced that every member of the staff had secured a hospital appointment. The John Metcalfe Polk Memorial Prizes were awarded to Morris Kush, first; J. S. Baldwin, second, and Henry R. Miller, third; and the Whiting prizes in otology to J. S. Baldwin, first, and John R. Quinn, second.

**Commencement Exercises.**—At the eighty-eighth annual commencement of the Jefferson Medical College, Philadelphia, on June 7, the degree of doctor of medicine was conferred on 126 graduates. It was announced that Mr. Daniel Baugh, one of the trustees of the College, has agreed to enlarge the Baugh Institute of Anatomy so that it will be the equal of any similar institution in the country.

The Medico-Chirurgical College, Philadelphia, on June 6, at its thirty-third annual exercises conferred the degree of doctor of medicine on sixty-one graduates.

At the twenty-seventh annual commencement exercises of Temple University of Philadelphia, on June 5, thirteen graduates in medicine received their degrees.

**Honorary Degrees Conferred.**—Dr. Simon Flexner, Director of the Rockefeller Institute for Medical Research, New York, and Dr. David Linn Edsall, professor of clinical medicine in the Harvard Medical School, Boston, received the honorary degree of doctor of science at the commencement exercises of Princeton University held on June 10.

At the seventieth annual commencement of Villanova College on June 12 the honorary degree of Doctor of Laws was conferred on Dr. Charles F. Nassau and the degree of Doctor of Science on Dr. George H. Meeker.

Dr. Abraham Jacobi of New York received the honorary degree of Doctor of Laws at the commencement exercises of the Jefferson Medical College, Philadelphia, held on June 7.

**Philadelphia Health Board.**—Dr. D. Braden Kyle has resigned from the Philadelphia Board of Health and Dr. Walter H. Andrus has been appointed in his stead.

**Anti-Vivisectionists in Philadelphia.**—Following their threats of the previous week, the anti-vivisectionists of Philadelphia on June 14 obtained warrants for the arrests of five members of the Medical Society of the University of Pennsylvania on the charge of cruelty to animals. The five men, constituting the committee in charge of the animal house, are Prof. Alfred N. Richards, Prof. Richard M. Pearce, Prof. Alonzo E. Taylor, Prof. Edward T. Reichert, and Prof. Allen J. Smith. It is alleged that they have performed operations upon animals without administering anesthetics, and have performed other acts of cruelty. A general denial of the charges has been made, and the case will be carried, if necessary, to the highest tribunal in the State.

**To Test Vaccine.**—After repeated delay the Friedmann Institute in New York has complied with the requirements of the Board of Health, and by furnishing the specimens and data necessary has made it possible for the Health Department to proceed with a test of the vaccine introduced by Dr. Friedmann. Some months will probably elapse before the Department is prepared to make any final report, and in the meantime it is rumored that the institute may remove to some town in New Jersey nearby.

Recent newspaper despatches state that at a meeting of the Berlin Medical Society Dr. Friedmann's method of treatment was bitterly assailed, and it was stated that his promise to inform the society as to the details of his preparation had not been entirely fulfilled.

**Gifts to Charity.**—By the will of the late Lydia Varnall of Media, Pa., the sum of $3,000 is bequeathed to the Chester Hospital, and a like sum to the Crozer Home for Incurables, while one-fifth of the residuary estate, the value of which is not stated, is left to the Rush Hospital for Consumption and Allied Diseases.

By the will of the late James F. Hope of Philadelphia one-tenth of his estate is, at the death of his widow, to be divided equally among the Presbyterian Hospital, the Jefferson Hospital, and the German Hospital, and such other hospital as may at the time be devoted to the treatment of contagious diseases, or, if none such exists, to the Episcopal Hospital.

The Brooklyn Hospital and the Brooklyn Eye and

Ear Hospital of Brooklyn, N. Y., receive bequests of $5,000 each by the will of the late Charles A. Hull of that city.

**American Society for the Control of Cancer.**—At a meeting on June 9 of the executive committee of the recently formed organization to fight cancer in this country the above title was selected. At the same time a committee was appointed to ask for the co-operation of the American Medical Association at its meeting in Minneapolis.

**International Congress for Neurology, Etc.**—The Neurological Society of Switzerland has undertaken the organization of an International Congress for Neurology, Psychiatry, and Psychology, to be held at Berne, Switzerland, on September 7 to 12, 1914. This will be a continuation of the Congress held at Amsterdam in 1907, at which time the Swiss Neurological Society was commissioned to prepare for a second meeting. The organizing committee consists of Prof. Dr. Dubois, Berne, *President;* Prof. Dr. von Monakow, Zürich, and Dr. P. L. Ladame, Geneva, *Vice-Presidents,* and Dr. L. Schnyder, Berne, and Dr. O. Veraguth, Zürich, *Secretaries.*

**Rhode Island Medical Society.**—At the 101st annual session of this society, held in Providence on June 5, the following officers were elected for the ensuing year: *President,* Dr. John W. Keefe; *Vice-Presidents,* Dr. Stephen A. Welch, and Dr. Frank L. Day; *Secretary,* Dr. Jay Perkins; *Treasurer,* Dr. Winthrop A. Risk; *Librarian,* Dr. George D. Hersey, all of Providence.

**American Medico-Psychological Association.**—At the annual meeting held in Niagara Falls the following officers were elected on June 13: *President,* Dr. Carlos F. MacDonald, New York; *Vice-President,* Dr. S. E. Smith, Richmond, Ind.; *Secretary,* Dr. Charles G. Wagner, Binghamton, N. Y. The association will meet in Baltimore in 1914.

**Dr. Algernon Thomas Bristow.**—The following memorial note was adopted at a recent meeting of the New York Society of Anesthetists:

"Be it known to all men, and especially to those nearest and dearest to him, that the New York Society of Anesthetists in executive session assembled, drafted this expression of respect, admiration, and deep regret at the recent loss of their supporter and advocate, Algernon Thomas Bristow.

"His editorial and practical hospital support of the advancement of the art of general anesthesia has time and again aroused the admiration and emulation of this body of anesthetists, and so active and influential has this work among his many followers been, that this society wishes itself placed on record as considering it monumentally constructive and its cessation as a great loss to the surgical world.

W. C. Woolsey,
G. Tayloe Gwathmey,
A. F. Erdmann,
Committee.

**Obituary Notes.**—Dr. John Mutting Farrar of New York, a graduate of the Jefferson Medical College, Philadelphia, in 1874, and a member of the New York State and County Medical Societies, and of the American Medical Association, died at his home in June 12, aged 74 years.

Dr. B. Frank Barnes of Newark, Ohio, a graduate of the University of Wooster, Medical Department, Cleveland, in 1895, and a member of the American Medical Association, and of the Ohio State and Licking County Medical Societies, died in the Lakeside Hospital, Cleveland, following an operation for gallstones on May 29, aged 47 years.

Dr. Samuel M. Hardman of Clarksburg, W. Va., died at his home after a long illness, on May 31, aged 62 years.

Dr. John Neff of Baltimore, Md., a graduate of the New York University Medical College in 1858, and a member of the American Medical Association, and the Maryland State and Baltimore City Medical Societies, died at his home after a long illness, on June 5, aged 81 years.

Dr. Harry E. Snow of Belmar, N. J., a graduate of the Rush Medical College, Chicago, in 1887, died at his home, after a short illness from erysipelas, on June 12, aged 55 years.

Dr. Augustus S. Smith of Lebanon, Pa., a graduate of the Pennsylvania Medical College, Gettysburg, in 1859, and at one time prothonotary of Lebanon County, died recently, at his home, aged 73 years.

Dr. William Joseph Wickman of San Rafael, Cal., a graduate of the University of California, Medical Department, San Francisco, in 1883, and a member of the American Medical Society, and of the California State and Marin County Medical Societies, and formerly county health officer, and city physician of San Rafael, died at his home suddenly on May 29, aged 58 years.

Dr. Harmon George Howe of Hartford, Conn., a graduate of the University of Vermont in 1873, and of the College of Physicians and Surgeons, New York, in 1875, a member of the American Medical Association and of the Connecticut State and Hartford County Medical Societies, first director of the Hartford Hospital and chairman of the Medical board, was killed in an accident on the New York, New Haven & Hartford Railroad at Stamford, Conn., on June 12, aged 63 years.

Dr. Owen C. Spear of Wilmington, Del., a graduate of the Jefferson Medical College, Philadelphia, in 1906, and a member of the Delaware State and Newcastle County Medical Societies, died in the Delaware Hospital, from peritonitis, following an operation for appendicitis, on June 2, aged 49 years.

Dr. Walter A. Jensen of Melbourne, Ia., a graduate of the State University of Iowa, College of Medicine, in 1911, died on June 1, after a long illness, aged 35 years.

## Correspondence.

### OUR LONDON LETTER.

(From Our Regular Correspondent.)

GENERAL MEDICAL COUNCIL—NEW BLOOD PARASITE—OPIUM AND ARSENIC—MIDDLESEX HOSPITAL AND RADIUM—OBITUARY.

London, May 30, 1913.

The summer session of the General Medical Council was opened on Tuesday with the presidential address by Sir Donal MacAlister, K.C.B., who then vacated the chair, his term of office as president having expired. He was forthwith unanimously re-elected, and taking the chair returned thanks for the honor. The several committees were also appointed. In his address the president referred to most of the incidents of the past year. Last November he reported what had been done to give effect to the resolution of Council that in case of Irish Home Rule becoming law it was desirable the control of medical legislation should be reserved

to the Imperial Parliament. The Government, however, paid no attention to the representations made and it was doubtful whether another opportunity would occur for pressing the matter, but if it should the president assumed the former instructions would be operative. The bill for amending the provisions for the elections of representatives on the Council had been withdrawn by the Government, and there seemed little prospect of anything being done as to that this year. The president then related what had been done by the committee on the Insurance Act, in accordance with the directions of the Council. Its suggestions for amending the regulations had been acceded to, except in regard to the question of hospital or institutional treatment of patients needing services beyond the competence of the ordinary general practitioner. It was said that any change as to that could not be made by the regulations, but only by further parliamentary action. In one form of agreement no provision is made as to an anesthetist for operative cases. The committee has brought this defect before the Commissioners and the correspondence about it is not yet concluded. Early in the year during the acute discussions about the Insurance Act attention was called to warning notices which had been previously issued by the Council in regard to methods of advertising and canvassing which the Council disapproved. A further advance was reported in the direction of medical reciprocity within the Empire, the degrees in medicine and surgery of the University of Hong Kong being recognized for registration in the Colonial list. The Medical Council of Canada, which will be meeting almost immediately, will probably do as New Brunswick has already done, by placing on its register any resident duly registered here.

The Council considered *in camera* applications for restoration to the register, of which two were granted, and then proceeded to penal cases. One of these last was for impersonation by a man who had masqueraded as Muscat, and Muscot, and More, also afterwards as Anthony Ciaramelli. He had been run to earth by the Defense Union, to which the president expressed the thanks of the Council, and left them to communicate the result to the genuine Dr. Ciaramelli of your city. In one case judgment was postponed until the November session, and in another no action was taken.

Bacteriologists seem to have been taken aback by the claim of Dr. Helen Chambers to have demonstrated that a protozoon flagellate is always present in human blood. The claim was made at the Royal Society of Medicine (Section of Pathology) on the 20th inst. Some seemed to look upon the assertion as incredible, but others were willing to return to their microscopes and test the matter. One says the protozoa are not toxic as a rule, but that is a long way from pronouncing them normal constituents of the blood. Dr. H. D. McCulloch says, in the *Practitioner,* "there is no gainsaying facts," and recalls that quite recently in the *Lancet* he attempted to describe how nonflagellate organisms gained entrance into lymphatic glands, and now he accepts the evidence of the ingress of flagellates into the blood. Apart from their own properties he thinks the micro-organisms are influenced by the qualities of the media in which they are found. Some may remain suspended in a liquid or in a gas, while others exert their powers more easily in a semi-solid or viscous medium. A rigid, spiral form, rotating on its own axis, would be more adapted to a semi-solid or even solid medium than a rigid undulating nonrotating form; as an earthworm moves briskly through soft clay but is helpless in water, as a fish is on land.

Dr. McCulloch avers that is easy to demonstrate the micro-organisms within a few minutes of the abstraction of blood. It is centrifugalized and allowed to clot; then they emerge in small numbers at first but more later. As many as ten may appear in the field and can be shown in active motion, using an oil-immersion lens. Their activities can be watched with dark ground illumination. Some speculation is going on as to how far they may be associated with disease.

In the three lectures subsequent to the one I noticed which constituted the Gresham course, the professor, Dr. F. M. Sandwith, spoke of opium and arsenic. It should be remembered that these lectures are not wholly or primarily addresses to the profession, but afford an opportunity of warning the educated public, which has this year been exercised in regard to powerful poisons. Opium had, Dr. Sandwith said, exercised an immense power for good and evil. Like alcohol, it was not restorative, could only lull into temporary oblivion. About half the deaths from poision were due to opium, but it did not affect criminal statistics, as its action was not to induce paroxysms of violence. It had been smoked in China since the seventeenth century, and in 1906 it was estimated that 27 per cent. of Chinese adults were smokers of it. The worst form of poisoning was by injection of morphia and no doubt physicians have at times allowed these to be given by nurses and others. Patients learned the effects, abused the drug, and became its victims. It was a bitter lesson for the doctors.

Dr. Sandwith similarly gave some interesting facts relating to arsenic, and said some of its preparations were used in malaria, skin diseases, and sleeping sickness, and so on. Then he told how Syrian women used it as a beautifier, as they thought, and the superstition had spread. It is the principal ingredient of the face lotions vended by quacks, but dangerous. It has been known to kill the users by being absorbed through the skin. Besides there are instances of these and other arsenical preparations being swallowed, accidentally, suicidally, and criminally. Brinvilliers, the Marchioness with a lust for murder, used it under the notion that it disappeared from the body after death, but that was not the case. It can be detected long after exhumation.

Prince Alexander of Teck yesterday, at a meeting of governors of the Middlesex Hospital, named three urgent needs which he believed would be generously met by those able to assist. These were (1) the improvements in the new operating theater, as to which he declared it absolutely essential to make it as perfect as possible; (2) extension and improvement of the children's wards; (3) improving the sanitary arrangements in the southwest wing. They hoped some assistance would be granted by King Edward's Hospital Fund, and their faith in human sympathy for the remainder continued unshaken. His Serene Highness referred to the devotion of the staff and their work with radium, "the new weapon" of research in their hands. Dr. Pasteur, in seconding the report, said they had difficulty in getting sufficient radium, it was so costly, and could not be used in small quantities. Sir A. Pearce Gould said radium was unlike a drug, not lost by being used, but repre-

sented capital. Even when not in use it was storing up its emanations. Prince Alexander was re-elected chairman for the ensuing year and the report adopted.

Deputy Inspector-General W. R. White, R.N., died on Sunday in his sixty-third year. He was a Dublin graduate, B.A., M.B., and M.Ch. He took part in the Gambia Expedition, 1894, when he was wounded and mentioned in dispatches. He accompanied Lord Sackville in his exploration of the upper waters of the River Platte. For various services he received the thanks of the Admiralty, and in recognition of them was further created C.B., and awarded the African medal with clasp. He published an important monograph on malarial fevers.

## OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

LOW DEATH RATE IN MANILA—SCHISTOSOMUM JAPONICUM—VENEREAL PROPHYLAXIS—BERIBERI—THE PLAGUE—CHOLERA CARRIERS.

MANILA, P. I., April 10, 1913.

THE death rate for Manila during the month of March still remained phenomenally low, there having been reported 451 deaths, as against 732 for the same month last year. This breaks all records for March since American occupation. The improved health is no doubt largely due to the better water supply that is now furnished the city and the modern sewer system which is now coming more and more into general use, although the many other sanitary improvements, such as reduced number of mosquitos, proper garbage disposal, frequent street sweeping, etc., in all probability have aided in the result.

The regular monthly meeting of the Manila Medical Society was held at 8:30 P.M. in the amphitheater of the College of Medicine and Surgery of the University of the Philippines. Dr. Rembe gave a brief description of his operation for cataract without iridectomy and showed two cases in which the operation had been done.

Dr. Vernon Andrews exhibited specimens from a case of *Schistosomum japonicum* which came from a Filipino and, so far as known, this was one of the first cases that has been reported among this race. He stated that the literature showed that there had been a total of 17 cases reported in the Philippine Islands, but that further investigation led him to the opinion that probably there had been some duplication in the cases previously reported.

The next paper was read by Major Wolfe of the Army Medical Corps, and in this he gave an account of the venereal prophylactic measures that are in use among the troops stationed at Fort McKinley. He presented a series of tables which showed a most marked diminution in the number of venereal cases since the War Department order had gone into effect which stopped the soldier's pay during the time that he was being treated for a venereal disease. Prior to that time the prophylactic measures were theoretically in force, but in their practical application it was found that many of the soldiers evaded taking the treatment. It was frequently found, for instance, that a soldier who desired to spend the evening out would send a substitute under his name to take the treatment. Again, it happened that the men would take the treatment and immediately expose themselves again without taking the prophylactic measures the second time. The treatment that is used at present consists in thorough washing of the penis with warm water and tincture of green soap. This is followed by the instillation of a few drops of a four per cent. solution of argyrol, and then the fore part of the penis is thoroughly rubbed with calomel ointment. Major Wolfe lays special stress upon the thorough cleansing and the application of the ointment to the frenum; the reason being that there are many cases on record where chancroids developed around the frenum that had not been thoroughly cleansed.

The last paper of the evening was by Vedder and Williams and was read by Captain Vedder of the Army Medical Corps, and who is also a member of the Board for the Study of Tropical Diseases as they exist in the Philippine Islands; entitled "Beriberi." In addition to the facts these authors have brought forth in papers which have been published heretofore with regard to beriberi, they gave an interesting series of experiments in which they showed that the use of rice that was mouldy and had been stored for over a year in a damp place apparently had no effect in producing polioneuritis gallinarum, provided that the rice was of the undermilled or unpolished variety, that is that the pericarp had not been removed and the rice contained at least 4/10 of one per cent. phosphorus pentoxide. This point was considered of practical importance, because it has been frequently asserted by medical men that rice which has been stored, especially that which has been kept in damp places, would cause beriberi, regardless as to whether it was of the unpolished variety or not.

He also expressed the view, but stated that as yet he had no experimental facts to support it, that perhaps the wet and dry forms of beriberi were caused by the lack of a distinct substance in the diet which produced each disease, and that perhaps an extract made from rice polishings might cure dry beriberi and not wet beriberi, which would simply mean that all of the necessary essentials had not been extracted from the polishings.

Since the beginning of the year there have been 8 cases of plague, with 7 deaths, in the Philippines. A majority of these occurred among young adults under the age of 16 years, mostly being boys. During the past month there has been a sharp increase of plague infection among the rats of the Tondo district. Two cases of human plague, one in a man and the other in a woman, were found at Malolos, which is a town on the railroad, situated about 24 miles north of Manila. Both of these were traced to a house in Manila on Calle Aquino in the district of Tondo and in close vicinity to a section where plague-infected rats had been found. As both of these cases occurred well within the incubation period of plague, it has been assumed that the disease was contracted in Manila and that on account of the fear of being taken to the communicable disease hospital the afflicted persons fled to Malolos. After the discovery of the cases an active rat-catching campaign was conducted in Malolos for a period of two weeks, but no plague-infected rats were found.

The Bureau of Health, in order to combat the rat plague of Tondo, has somewhat changed the plan of campaign. Instead of the greatest stress being laid upon the actual catching of rats, the principal thing kept in mind at present is to destroy rat nests, and secondly to catch as many rats as possible and then to rat-proof the premises. One gang of laborers composed of about 100 men is divided into three

sections, each under the charge of an experienced sanitary inspector, and these go from house to house and make a thorough systematic search for rat-breeding places. After the search of the house proper is completed, the yards, woodpiles, old junk, rubbish, and everything likely to harbor rats are moved about so that the rat nests may be discovered and destroyed. Particular attention is given to spraying with an insecticide so that the fleas may not escape. In this way an enormous number of rats are also caught and the chances of catching those that are likely to be infected are very much increased. It is thought by constantly changing the places of abode among rats, there is less likelihood of the disease spreading among them and also that the chances are very much reduced of plague-infected fleas gaining access to human beings, that have come from rats that have died in rat nests.

In view of the great importance that has been attached by the Javanese sanitary authorities to destroying rats in hollow bamboos, special stress has been laid upon finding similar breeding places in the Philippines; but in spite of the fact that this was constantly kept in mind, it was only recently that rats were actually found in bamboos. In a house located at 140 Calle Perla a man was found dead with plague. In a piece of bamboo in which the partition of the first joint had been gnawed through a mummified rat that had apparently died of plague was found. The bamboo was placed horizontally near the head of the cot on which the man slept, and it would appear probable that the plague-infected fleas on the death of their host left the bamboo and attacked their human victim.

In the Philippines it is customary to make stool examinations of all steerage passengers and crews that come from other Oriental countries. Last year several cholera carriers were found. A short time ago a person who had many of the clinical symptoms of cholera was found upon careful laboratory examination to have *Balantidium coli* dysentery.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*June* 5, 1913.

1. The Relation of Bacterial Metabolism to Internal Medicine. A. I. Kendall.
2. Common Colds and Vaccine Therapy. J. W. Fisher.
3. An Etiological Factor in Carcinoma and Its Possible Influence on Treatment. H. W. Nowell.
4. The Neglect of Hydrotherapy in America. J. H. Pratt
5. Appendix Excisor. J. E. Briggs.

**1. Relation of Bacterial Metabolism to Internal Medicine.**—A. I. Kendall presents evidence to show the extent to which utilizable carbohydrate spares protein and protein derivatives from bacterial attack. The carbohydrate protects protein largely from bacterial breakdown. The sparing action is not complete, but results in the practical elimination of nitrogenous products, incidental to bacterial development, some of which may be toxic, and the substitution for them of substances which are non-nitrogenous, which may be irritative, but probably never truly toxic. The principle involved may be made use of theoretically in the treatment of diseases of bacterial origin, in which the anatomical features are such as to permit the utilization of carbohydrate by the invading microorganisms. The object of the diet rich in carbohydrates is twofold: physiologically to provide the patient with a readily assimilable food requiring a minimal amount of digestive energy to prepare it for the tissue needs, and bacteriologically to shift bacterial metabolism from the destruction of body tissue for their food requirements to the utilization of carbohydrate for at least the major part of their dietary needs. The shifting of metabolism to sugars appears to deprive these microbes of one of their most potent weapons of offense, and forces them to act on the defensive: forcing the parasite to act on the defensive theoretically at least permits the host to rally and to strengthen its defensive and even its offensive powers earlier in the battle. The initial damage, brought about when the host is temporarily overwhelmed by the initial onslaught of the invaders (which is accomplished largely during the incubation period of the disease) cannot be estimated at present, and perhaps cannot be undone. The final struggle between host and parasite can be influenced directly and favorably.

**2. Vaccine Treatment of Common Colds.**—J. W. Fisher states that colds can be largely prevented by the reasonable isolation of every case, and preventive inoculation. Colds can be aborted or their course shortened by vaccine treatment. The treatment of acute and chronic inflammation of the respiratory tract by vaccines is specific. A symptom complex resembling influenza may be due to other organisms. While bacterins are invaluable in the treatment of acute and chronic infections of the nose and respiratory tract, and are attended with almost constant success, it is as a prophylactic that they give most brilliant results. The immunity occasionally lasts a year or more, but usually from four to six months is the average duration. To the individuals subject to recurrent colds, as many are during the winter months, it proves a great boon. In these cases it is well to make an autogenous vaccine from the first cold, to which may be added, if so desired, the other "cold germs" from stock. This may be given in increasing dosage with seven-day intervals, until four to six doses are administered, which generally produces sufficient immunity for several months. If one prefers to wait until the onset of the next cold before beginning the treatment, the attack can almost invariably be aborted and immunity completed. This procedure may be repeated at the end of six months, or delayed until such time as necessity demands. The dosage which seems to give the best results is as follows: pneumococcus, *M. catarrhalis, M. tetragenus*, each 125,000,000; streptococcus, 50,000,000; *Bacillus influenzæ, B. septus, B. Friedlander*, about 100,000,000; staphylococcus, 400,000,000 to 800,000,000. The vaccine should be prepared so that eight minims contain the requisite number of sterile germs, as larger amounts of fluid are more apt to produce local reactions. The best site of inoculation is deep in the deltoid muscle.

**3. An Etiological Factor in Carcinoma.**—H. W. Nowell describes a procedure by which a substance or substances may be isolated from carcinomata, the method precluding the presence of organic life in the end product. This end product has been shown to be of a highly toxic character. The peritoneal exudate produced by a fatal intoxication is far more toxic than the original substance. The tumor substance has been shown to possess not only a general but also a specific toxicity, since on injection into rabbits in doses of less than lethal amount it will produce well-defined, well-characterized carcinomata, the site of the primary lesion being different from and independent of that of the injection. The appearance of the primary lesion is followed by the development of numerous metastatic foci in different parts of the body, while the characteristic cachexia manifests itself. The poisonous tumor preparation has been shown to be characteristic of carcinomata. By the repeated injection of very small doses a large number of rabbits have been immunized. The serum from the animals thus immunized possesses the power of antagonizing the toxic action of the tumor substance. This has been demonstrated by injections of the serum either previous to or simultaneous with that of the tumor poison. In both events no effect is ob-

served from quantities of the poison which, if injected alone, would produce a rapidly fatal intoxication. With the simultaneous injection of poison and antibody it has been shown that one part of the latter will effectually antagonize 99 parts of the former.

## New York Medical Journal.

*June 7, 1913.*

1. The Unconscious Factors in the Neuroses. A. A. Brill.
2. Gallstones Producing Pyloric and Jejunal Obstruction. W. W. Babcock.
3. Changes in the Treatment of Syphilis. W. S. Gottheil.
4. A Quantitative Chemical Reaction for the Control of Positive Wassermann Results. D. M. Kaplan.
5. The Problem in Local Recurrent Breast Cancer. C. W. Strobell.
6. Some Unusual Obstetrical Complications. F. Merriam Myers.
7. The Treatment of Endometritis. G. G. Ward, Jr.
8. Measles: Periodic Cycles of Virulence. H. A. Brown.
9. Notes on the Deleterious Effects of Salvarsan from an Otological Standpoint. A. Kahn.
10. The Use of the Metranoicter in the Treatment of Dysmenorrhea and Sterility. P. F. Williams.

**2. Gallstones Producing Intestinal Obstruction.**—W. W. Babcock notes that intestinal obstruction may occur when gallstones having a greater diameter than two centimeters enter the small bowel. Much larger gallstones pass into the large intestine without producing obstruction. Gallstones of sufficient size to produce intestinal obstruction are, as a rule, too large to pass through the biliary ducts without some ulcerative or perforative process. It is rare to find a dilated communis with a greater lumen than one centimeter, and, in conjunction with such dilatation of the duct, a marked distal narrowing, usually situated in the region of the head of the pancreas or in the wall of the duodenum, will be found. It is obvious, therefore, that large gallstones may enter the intestinal tract in one of three ways: (1) They may gradually erode their way through the cysticus and the communis by a combination of proximal and circumferential dilatation and distal pressure necrosis and ulceration. (2) The duct or gall-bladder containing the calculus may become adherent to an adjacent portion of the stomach or bowel, and a direct perforation occur with the transference of the stone from the biliary to the gastro-intestinal canal. The stone may perforate the gall-bladder or duct, and be received into a cavity of inflammatory formation, and from this cavity or abscess the stone may then perforate the wall of one of the hollow organs of the abdomen. In this way the gallstone may enter the stomach, the small intestine, colon, or rarely some other viscus, as the urinary bladder. Gallstones, when in the general abdominal cavity, share the property of other harsh foreign substances of tending to penetrate adjacent hollow viscera. Intestinal obstruction from gallstones is unusual, and, as would be expected, usually occurs in elderly women who have long suffered from gallstone "dyspepsia."

**4. Chemical Control of Wassermann Reaction.**—D. M. Kaplan urges extreme caution in the interpretation of the clinical significance of this very complex reaction. A more definite basis than the side chain theory should be at one's command for the gauging of syphilitic serums. The determination of amino nitrogen in the serums from syphilitic patients will lend itself to further elaboration and will give useful results. A serum in which a positive Wassermann reaction has been obtained is very dubious in a patient whose amino nitrogen is normal. The amino content of syphilitics is frequently very much diminished, although the Wassermann reaction may be negative. Whether a patient should be treated until the amount of amino nitrogen is restored, giving one another gauge as to therapy, is for the future to determine. The paretic patients who presented a normal amino nitrogen in one instance and showed a tendency to an increase in another are in very good physical condition and show no psychic stigmata of the disease. The characteristic pupils are still evident.

**5. The Problem in Local Recurrent Breast Cancer.**—By C. W. Strobell. (See Medical Record, April 26, 1913, page 774.)

**7. The Treatment of Endometritis.**—G. G. Ward, Jr., emphasizes the following factors in the treatment of endometritis: Leucorrhea, the most prominent manifestation of the disease, comes from the uterine cavity, and not from the vagina. Endometritis may be divided into two great classes, that of bacterial origin and that of non-bacterial origin. In the acute infective cases the discharge is pus containing, active, demonstrable organisms. In acute infective cases the treatment to be observed is masterly inactivity. In the common variety of so-called chronic hyperplastic endometritis, which is by far the most frequent type one has to deal with, there is no infection, and the leucorrheal discharge is an excessive secretion from the cervical and utricular glands, the result of venous congestion. The first and most important principle to be observed in treating these cases is to determine the cause of the venous stasis and to treat the same by appropriate measures. The curette is the most valuable means for removing the greatly thickened and diseased endometrium, but if it is used alone, without correcting the cause, only temporary relief of symptoms is obtained. Vaginal douches, glycerin packs, and postural methods, if properly employed, are valuable adjuncts in aiding and improving the pelvic circulation. In the class of cases which are probably dependent upon disturbed ovarian function (either excessive or diminished), such as in the preclimacteric menorrhagias and metrorrhagias, arteriosclerotic uteri, chronic metritis, fibrosis, etc., and which are not benefited by the curette and local measures, one must look for a cure in the direction of ovarian control, possibly by the *x*-ray or by sera from antagonistic glands of internal secretion; otherwise complete ablation of the ovaries or hysterectomy is the only resort. In submitting curettings to the pathologist it is imperative that the relation of the time of the curetting to the menstruation be stated, in order to obtain an opinion of value.

## Journal of the American Medical Association.

*June 7, 1913.*

1. Meningitis of the Epidemic Type in Children Below Two Years of Age. H. Koplik.
2. Prevention of Disease vs. Cost of Living. T. F. Harrington.
3. Wood-Alcohol Blindness. H. Woods.
4. Experimental Immunity in Relation to the Agglutination Reaction in Typhoid. V. H. Moon.
5. Where Is the Fundus of the Bladder? B. Lewis.
6. Rarity of Sarcoma of Sclera. Report of a Case with Removal and No Recurrence. R. M. Nelson.
7. Bilateral and Multiple Ectopic Pregnancy. E. McDonald.
8. Erosive and Gangrenous Balanitis. The Fourth Venereal Disease. A Further Report. B. C. Corbus.
9. The Diagnosis and Treatment of Seborrheic Keratoses of the Lip. R. L. Sutton.
10. The Effects of Adrenal Massage on Blood-Pressure. R. G. Hoskins and C. McPeek.
11. The Possible Relationship of Organic Diseases of the Nervous System to Riggs' Disease. J. Collins.
12. The Spirochete Associated with Infections of the Accessory Sinuses. R. Tunnicliff.
13. New and Simple Apparatus for Salvarsan Administration. G. F. S. Cary.
14. Retroperitoneal Rupture of the Appendix with Extravasation of Pus into and Gangrene of the Entire Thigh. J. R. Buchbinder.
15. Torsion of the Spermatic Cord. I. Kleiner.
16. Incontinence of Feces. (Non-Organic.) L. H. Zeuch.
17. Modified Sheep-Shears Useful in Surgery. E. M. Jones.
18. Another Case of Sporotrichial Infection in Man. G. S. Adams.

**1. Epidemic Meningitis in Children Below Two Years of Age.**—H. Koplik calls attention to the difficulties in the diagnosis and treatment of cerebrospinal meningitis in children under two years of age. In older children the diagnosis is not as difficult and the prompt use of the Flexner serum has greatly improved the prognosis in such cases. In young infants the symptoms are masked and the dread of making the lumbar puncture needlessly has deterred many from using this valuable method. Particularly difficult are the cases complicated with pneumo-

nia which itself is attended with cerebral symptoms. Many intestinal disorders show misguiding symptoms in infants. While a day's delay is not dangerous with older children, it may be fatal for the baby. For all these reasons the reduction of the death rate has not been appreciable. The virulence of the infection also affects it, different strains differing widely in this respect and there are also cases which cannot be reached by the serum on account of the special sensitiveness of the nervous system at the time it is given. The author urges, therefore, an early resort to lumbar puncture in infants under 2 years of age so that the treatment may begin in time, and also the greatest care in slowly withdrawing the fluid and introducing the serum to avoid traumatism and extreme changes of pressure. In very young patients the temperature is a valuable guide as to the necessity of repeated puncture and serum injection as in older children, but in face of great restlessness and a normal temperature the fluid should be withdrawn by a lumbar puncture and examined for bacteria. If these persist and a cloudy fluid is obtained it is safe to reinject serum rather than to delay and wait for actual culture to determine whether or not the fluid is sterile. Other baffling features are the closure of the foramen of Magendie in some cases and the impossibility of performing a lumbar puncture in many others.

7. **Bilateral and Multiple Ectopic Pregnancy.**—E. McDonald and W. A. Krieger regard multiple ectopic pregnancy as not a rare occurrence if duly looked for. It may be divided into several classes; namely, combined with pregnancy of the uterus, bilateral or twin pregnancy, and two fetuses in the same tube. Twin ectopic pregnancy has been reported a number of times in late years, especially since the treatment by operation has become usual. It is sometimes difficult to determine whether there is a true twin ectopic pregnancy. Many of the cases reported are consecutive ectopic pregnancies not simultaneous in the same tube. They are repeated tubal pregnancies. Treub has photographed five tubal pregnancies of the same age in the same tube and others have reported triplets and twins on one side and a single fetus on the other. Sometimes there is only one sac and sometimes there are two. One ovum may be found free and sometimes both ova are free. Bilateral pregnancy is subject to the same uncertainty; one may be consecutive to the other and the growth may be stopped while the other continues. An interesting fact is that the presence of blood-clot in one tube and of a fetus in the other or of decidual cells in one with a gestation in the other is no proof of a bilateral ectopic pregnancy. Feroni has shown that the microscope reveals decidual cells in tubes that contain blood for whatever reason removed. To make an exact diagnosis of bilateral ectopic pregnancy, either a fetus or chorionic villi must be present in each tube. Two tables of cases collected of bilateral extrauterine pregnancy are given, fifty-two in all. In one, the cases which meet all the conditions are included, in the other the probable cases. Two personal observations of the authors are described in the paper. One patient had apparently three pregnancies, one in each tube and a uterine one which miscarried; in the other patient there was a fetus in one tube and there were chorionic villi in the other.

8. **Erosive and Gangrenous Balanitis.**—B. C. Corbus describes this as a specific venereal disease with local and constitutional symptoms varying with the severity of the infection and due to the symbiosis of a vibrio and a spirochete, always found together. Predisposing causes are phimosis, wetting the labia or penis with saliva, and unnatural sexual relations after alcoholic excesses. It is uncommon in private practice in this country but is fairly frequent in dispensary cases. Probably many cases are unrecognized. The spirochete seems to be similar to one found in Vincent's angina and the vibrio is probably the same as that found in Vincent's angina. Both forms are anaërobic. Both stain by ordinary dyes but the vibrio is Gram-negative while the contrary is the case with the spirochete. The latter is best seen with dark-ground illumination. The ulcers formed are deep with perpendicular edges and are usually mistaken for chancroid as these conditions simulate each other closely and their period of incubation may be the same. The thin yellowish, whitish discharge and the finding of the vibrio and spirochete should help in the diagnosis. The ulcers spread more rapidly and in chanchroid the ulcers are usually more multiple. The indolent adenopathy accompanying the balanitis calls for its differentiation from syphilis. In syphilis the incubation period is longer though the two infections may coexist. In doubt, one should defer the diagnosis of syphilis until its period of incubation is passed and in case of mixed infection the characteristic spirochetes can be easily distinguished. In herpes the condition is mild and one fails to find the organisms. As a prophylactic measure, circumcision should be encouraged; it is impossible for the infection to occur after that. In mild cases cleansing may be all that is necessary. In other cases in which there is the slightest evidence of phimosis an incision should be made. A natural tendency is to burn out these sloughing ulcers but this is needlessly severe. As the organisms are anaërobic, hydrogen peroxide, which liberates oxygen in contact with organic matter, acts as a specific. The ordinary 2 per cent. solution is sufficient but in severe cases a 25 per cent. solution may be painted on the parts.

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## The Lancet.

*May* 31, 1913.

1. The Trend of Thought in Recent Pharmacological Research. Sir William Whitla.
2. The Electrical Action of the Human Heart. A. D. Waller.
3. Primary Epithelioma of the Nipple in a Girl Aged Eleven. W. H. Battle and B. C. Maybury.
4. The Analysis of Nystagmus. A. Abrahams.
5. A Case of "Idiopathic" Cerebral Abscess. J. Henderson.
6. A Bacillus of an Unusual Kind Isolated from a Case of Septicemia. J. A. Braxton Hicks.
7. A Case of Colocynth Poisoning. R. B. Roe.
8. Some Surgical Experience During the Balkan War. S. Smith.

1. **The Trend of Thought in Recent Pharmacological Research.**—Sir William Whitla first presents a retrospect in the domain of therapeutics. A starting point is found in the epoch-making researches of Crum Brown and Fraser in 1868, on the action of methyl-strychnine. These investigators made the discovery that by linking the organic alkyl radical, methyl ($CH_3$), to the nitrogen of the complex molecule of strychnine, the resulting comparatively slight change in chemical structure altered in a remarkable manner the physiological or pharmacological action of the alkaloid. The alteration was manifested by a change from the convulsant effect on the cells of the cord to a paralytic one on the terminals of the motor nerves, such as is witnessed in the well-known symptoms of poisoning by curare. In discussing the present position with reference to chemical structure and physiological action the author states that innumerable examples have accumulated equally suggestive of this close relationship. Not only is the synthetical chemist able, by altering the structure of the molecule, to intensify greatly the action of the compound; but he can, with equal ease, render the poisonous drug inert by introducing into the molecule such acid groups as the sulphuric, sulphonic, and carboxylic. Thus the poisonous phenol is converted into the inert phenyl-sulphuric acid, and morphine-sulphuric acid can be swallowed with impunity in dram doses. Sufficient instances are not yet forthcoming to justify one in regarding the connection between chemical constitution and physiological action as a definite "law," but only as a working hypothesis. Ehrlich's term "chemotherapy" implies a great deal more than the acceptance of an established dependence of action on chemical constitution.

With this new word another and essentially different working hypothesis leaps into view. Stated in its most advanced form, this second theory attempts to explain the action of a drug as the result of a chemical combination of some of its groups with other constituent groups or radicals in the complex molecule of the living protoplasm of the cell or tissue upon which it acts. Though one is still a long way from a synthetical construction of a protein molecule, the building up of the polypeptids by Emil Fischer strongly encourages the hope that this giant achievement is a possibility in the not far distant future. A grave obstacle to the acceptance of a purely chemical hypothesis of drug action has hitherto existed in what one may term the bogey of catalysis and cell enzymes. If one could clearly prove that the action of enzymes is to be explained on a purely chemical basis as has been done in the case of the toxin and antitoxin, it must be conceded that the way to a clearer chemical conception of drug action is opened up. It appears impossible to escape the conclusion that the ferment contains a haptophore and as toxophore group, which combine chemically with receptors in the molecule of the antiferment.

**4. The Analysis of Nystagmus.**—A. Abrahams studied the various forms of nystagmus with the aid of a special model of cinematograph. By the cinematography of post-rotation nystagmus he found that the movement persisted for at least 11 seconds. Although movement probably continues for some seconds longer it is not sufficiently defined to be visible in the photograph. During the 11 seconds there occur 44 distinct movements of the right eye towards the inner canthus and the same number of distinct movements to the opposite side. In nystagmus elicited by intrameatal compression in a case of labyrinthine fistula, the analysis of the movements produced showed no indication of any attempt at spring nystagmus (jerk nystagmus or "nystagmus à ressort"), but the nystagmic and reactionary phases are approximated equal in extent and in velocity—pendulum nystagmus. In spontaneous nystagmus of non-vestibular origin the movement is of the undulatory type and the duration is on the whole remarkably constant in both directions. All attempts at the photography of miner's nystagmus were unsuccessful—the oscillations appear to be both too small and too rapid for cinematography. A collection of the observations of many observers upon many forms of nystagmus groups them into the two varieties, "nystagmus à ressort" and undulatory nystagmus, as follows: *Nystagmus à ressort.*—Nystagmus of muscular pareses. Cerebellar and vestibular disturbances. Vertigo (when it depends probably also on vestibular disturbance). Hereditary ataxia of Friedreich. All conditions which reduce the capacity of the posterior cerebral fossa. Certain cases of congenital amblyopia. *Undulatory nystagmus.*—Double complete cataract. Amblyopia. Photophobia. Tabes. In disseminated sclerosis both kinds are seen.

**5. Idiopathic Cerebral Abscess.**—J. Henderson states that in a very large percentage of cases of cerebral abscess the determining cause is easy of recognition, but in the remainder it is either very difficult or quite impossible to assign a cause. Cases in which the etiology is very obscure have been from time to time recorded in medical literature. Oppenheim refers to several such cases, though at the same time he recognizes that septic material circulating in the blood may pass directly to the brain, giving rise to a primary purulent encephalitis. Idiopathic cerebral abscess must be a very rare condition—so much so that Osler states that it need scarcely be considered; but in a case like the one reported by the author, in which there was no cause assignable during life, nor discoverable post mortem, the term "idiopathic" seems to have been quite justifiable.

## British Medical Journal.

*May 31, 1913.*

1. The Trend of Thought in Recent Pharmacological Research. Sir William Whitla.
2. Further Experience of the Cardiac Sign in Cancer. W. Gordon.
3. Lipodystrophia Progressiva. F. Parkes Weber.
4. Chronic Pneumococcal Infection of the Lungs in Children. P. L. Sutherland and A. A. Jubb.
5. The Treatment of Adenoids and Enlarged Tonsils without Operation. W. Stenart.
6. The Cause of Enlarged Tonsils and Adenoids in Children and their Treatment with Lymphatic Gland Extract. H. T. Ashby.
7. Iodine as an Antiseptic in Tropical Countries. J. C. Ridgway.
8. The Bionomics of the Rat-flea. C. Strickland.

**2. The Cardiac Sign in Cancer.**—W. Gordon describes this sign as a remarkable diminution of the cardiac dullness in the recumbent posture as determined by digital percussion. In that posture the dullness, in the normal adult, begins above about the third costal cartilage, reaches rightwards as nearly as possible to the midsternal line, and measures across about 3 to 3½ inches at the level of the fifth costal cartilage. On the other hand, in the cancer patient who presents the sign the cardiac dullness in recumbency begins above about the fourth or fifth costal cartilage, has its right margin ½ inch or 1 inch to the left of the midsternal line, and measures across less than 2 inches at the level of the fifth costal cartilage. Often it measures less than 1 inch across. Sometimes there is no cardiac dullness at all. The sign may be explained in three different ways: In some cases of cancer the heart is small, and this reduction in size has been said to account for the reduction of the dullness. This may sometimes partly explain the sign; but by no means always; for often the dullness, though very small in the recumbent position, is normally or even abnormally broad in the erect. If the loss of elasticity, so common in the skin in cases of cancer, affects the lung as well, it is conceivable that ordinary respiration may induce a sort of spurious emphysema and thus diminish the dullness. It is now known that a peculiar form of emphysema does often occur in cancer—Fenwick found it in 28 per cent. of his cases of gastric cancer—and no doubt in many cases this helps to produce the sign. The cardiac sign is often associated with a remarkably soft and toneless pulse, and with very feeble heart sounds. The author sums up the results of his experience as follows: The sign is of practical value. If present in a case in which the presence of cancer is possible, the diagnosis of cancer should only be rejected after most careful consideration. If absent in what may be an early case of cancer, little stress must be laid on its absence. But if absent in what must be, if cancer at all, a late case of it, its absence strengthens considerably the likelihood of the absence of the disease.

**3. Lipodystrophia Progressiva.**—F. Parkes Weber defines this condition as a disease possibly confined to the female sex, and characterized by progressive disappearance of the subcutaneous fat from the face, upper extremities, and trunk, whereas the fat of the lower extremities and gluteal regions remains unaffected or is increased in amount. In some cases, perhaps, the condition is one of pathologically altered distribution of fat rather than of genuine wasting, or possibly merely of relative excess of fat in the lower extremities and buttocks of an otherwise rather thin subject. It is by no means certain that the disorder is always a progressive one. In all probability all degrees of this abnormal fat distribution occur, progressive in some subjects, and arrested or stationary in others, while in yet other cases the condition may probably occur as only a temporary feature in the life-history of a patient or as little more than a slight exaggeration of a normal female sex character.

**4. Chronic Pneumococcal Infection of the Lungs in Children.**—P. L. Sutherland and A. H. Jubb conclude that phthisis is not as common in children as certain recent reports would appear to imply. Many cases of

"phthisis" or "suspected phthisis" in children are really chronic pneumococcal infections of the lungs inducing bronchial and peribronchial lesions. These pneumococcal cases in children form a large percentage of the cases cured or improved in open-air schools. It is extremely likely that such cases in children are treated at tuberculin dispensaries as phthisis in which the tubercle bacilli are not found in the sputum. These pneumococcal infections tend to be chronic and non-fatal, though there is always the liability to tuberculous infection.

5. **Non-Operative Treatment of Tonsils and Adenoids.**—W. Steuart has found that the *x*-rays have a stimulating effect on chronically inflamed adenoid tissue, and enable it to resume its healthy condition. The tonsils do not entirely regain their normal size except in favorable cases, the diminution in size being dependent on the time the organ has been inflamed or on the amount of fibrous tissue that has been formed. The decrease in size is sufficient to dissipate all obstructive symptoms. Conditions dependent on the septic state of the tonsils and adenoids are relieved. Regarding the merits and demerits of the surgical and radiological methods the following points may be raised. It cannot be right to remove tissues that have a definite function, and though this procedure has been necessary in the past it is surely better to restore such tissues to a healthy condition rather than remove them. A small proportion of tonsils owe their enlargement to tubercle, and in these cases it is a matter of risk to resort to surgery on account of the possible dissemination of the disease. The radiological method takes longer, but against this there is no shock to the child and no convalescent period; and as for the sum total of inconvenience the advantage lies with the *x*-rays. The parts affected by operation do not comprise the whole of the inflamed area, whereas by radiation all the pharyngeal lymphoid tissue can be subjected to the influence of the *x*-rays. Recurrences are not at all uncommon after the use of the guillotine.

6. **Lymphatic Gland Extract in the Treatment of Enlarged Tonsils and Adenoids.**—H. T. Ashby states that the mere presence of adenoids does not constitute a disease, and they only become pathological when they hypertrophy and cause trouble. In infancy and childhood the lymphatic structures are at their maximum exactly at the time when enlarged tonsils and adenoids are commonest, and it is one of the functions of the lymphatic tissue to form the lymphocytes. Now it is a peculiar fact that children with enlarged tonsils and adenoids rather have a diminution of lymphocytes in the blood, and there is also an increase in the total number of leucocytes. For this reason it looks as though the enlargement of the tonsils and adenoids were an attempt on the part of Nature to supply the deficiency in the other lymphoid tissue of the body. At the age when enlarged tonsils and adenoids are commonest (2 to 5 years) the lymphocytes are normally beginning to decrease from the high percentage found in infants to the adult standard, and again, the thymus is also decreasing in size. The author believes these two facts support the view that the adenoids and tonsils are an attempt to augment the lymphoid tissue of the body. It is also a common fact that when the enlarged tonsils and adenoids are removed carefully by a competent surgeon before the age of about 5 years they are very liable to recur, so that Nature, as it were, makes a second attempt to raise the amount of lymphoid tissue, or at least supply the body with some secretion from the lymphoid tissue, which it needs at this age. If one could supply these children with lymphoid tissue artificially, there would be no need for the enlarged tonsils and adenoids, and in consequence they would go down, and it is on these lines that the author has been working. Up to the present he has treated about thirty cases of enlarged tonsils and adenoids with lymphatic gland extract, in doses of 5 grains, three times a day. No bad effects have been observed, and nearly all the children have improved in a very satisfactory way; the snoring and noises in breathing have disappeared, and the tonsils have diminished in size.

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## Berliner klinische Wochenschrift.

*May 26, 1913.*

**Achylia Gastrica and Anemia.**—Faber speaks of the importance of this subject and the frequency with which it is discussed. Chronic achylia gastrica is now recognized as a not uncommon condition and within the past few years the author has compiled notes of over 200 cases in his own clinic. Among this material there occurred 22 cases of severe simple anemia, in which hemoglobin ran from 65 to 35. The lowering of the number of erythrocytes, while marked, was not as marked as the reduction in hemoglobin. The index was invariably under 1. The symptoms of achylia were associated with those of anemia. None of the patients died. There remain for consideration 22 cases of achylia with pernicious anemia. The association of the former with the latter is almost constant, due according to some authors to gastric atrophy and to others to toxic gastritis. It appears that achylia may exist for many years before anemia sets in, and the most logical conclusion is that the latter appears when the gastric cells have finally become destroyed. Although this sequence may often be seen it does not explain all cases, for we may have achylia and anemia without structural atrophy. In such cases we find only an intense gastritis which does not involve the glands. This and other finds suggest a toxic component similar to that produced by certain tapeworms which are known to be a frequent cause of anemia. It is of course natural to think of the absorption of hemolytic poisons of some particular origin, and so one asks what part may be played here by bacteria. The only thing absolutely determined is that achylia precedes anemia.

**Treatment of Tabetic Phenomena with Arsenical and Bacterial Preparations.**—Döllken refers only to cure of the clinical phenomena of the disease—although if remedies could be found to dispose of all symptoms this would amount to a complete cure. The measures employed are as follows: salvarsan and a synthetic combination of arsenic and mercury are employed to attack any actual syphilitic component which yet remains accessible to specific treatment. We have recently learned that spirochetes are present in tabes, and if they cannot be controlled by salvarsan, ordinary bactericides may be essayed together with such substances as bind bacterial toxins. As a bactericide the author first tested pyocyanase—a bacteriolytic enyzme. As the exhibition of this substance was attended with disadvantages he began to use a pyocyaneus vaccine. Nineteen patients in the earliest stages of ataxia seemed to improve. That is, the lancinating pains, bladder troubles disappeared, the ataxia vanished and patients were able to resume work. The favorable effects of a tuberculin cure are already well known. Tabes in individual cases has been known to improve during a rabies cure, and after injections of diphtheria antitoxin.

**Arsenical Palsies.**—Obermiller cites the old view that arsenic manifests itself in the brain by convulsions and in the cord by paralyses, and adds that since the introduction of salvarsan, the ancient belief has received no corroboration; in fact, we have ignored it and instead have erected new theories of neurotropism which have led to no definite conclusions. An immense number of citations from toxicologists are then submitted with a consensus which seems to show that arsenicism from the

salvarsan presents no actual differences from arsenicism in general. We see hemorrhagic encephalitis and spinal paralyses, in both luetics and non-luetics. In a word the cerebrospinal accidents following salvarsan represent only arsenicism and should be preventable.

## Deutsche medizinische Wochenschrift.

*May 15 and 22, 1913.*

**Pathology and Therapy of Degeneration.**—Hübner delivered a full lecture on this subject in Westphal's clinic. The condition is at present in need of standardization. It is essentially inherited, and the psychical peculiarities of parents and children show a certain correspondence, although actual cumulation of one particular expression in a family is uncommon. The author assumes that alcoholism in the parents is not necessarily directly responsible for a good share of degeneracy in the offspring; for the alcoholic ascendant was invariably himself a degenerate. Again he is conservative about the part played by lues and tuberculosis. Back of all secondary causes is more degeneracy, and degeneracy there must have been long before syphilis and alcoholism existed as we understand these terms today. That is to say, the higher physical stigmata, like cleft palate and cryptorchidism no doubt existed always. The most conspicuous psychical expression suggesting degeneracy in childhood is seen in the various sleep disturbances. Another is seen in the conduct at school—the desire to avoid obligations and to antagonize their teachers—in other words, they rebel against all discipline. They lie and are cruel. With puberty they develop a peculiar vita sexualis, more noticeable in girls who may have no self-restraint at all. In after years the symptoms most in evidence are those comprised under hysteria, psychasthenia, sexual abnormities, obsessions and phobias, and actual psychoses. Under treatment the author only cites educational methods in youth.

**Intranasal Operations for the Cure of Headache.**—Fröse reports a number of cases of headache which he believed due to compression of exostoses, hypertrophies, etc., upon sensory nerve filaments. His conception is best shown by individual cases. Thus a man with swollen face, lacrymation, etc., had complained for four months past of severe headaches. There was an S-shaped curve of the septum and the middle turbinal was similarly bent. Anemization of the nasal chamber did not enlarge the lumen. Submucous resection of the septum caused some improvement in the headaches, but not enough to constitute a good result. The two middle turbinals were then subjected to resection and the headaches permanently disappeared. A number of similar cases are described.

**Sociological Sterilization of the Insane.**—Friedel adds some cases to a certain European material; these are not cases in which sterilization was actually effected but where it was unquestionably indicated but refused. In one instance of an imbecile girl living at home her parents refused the intervention, while in another asylum control or segregation filled the indication for sterilization. Nowhere in Germany are laws for the latter yet available, although the practice is under way in parts of Switzerland. The point made by the author is the enormous damage done before these cases come to the attention of alienists. The girls give birth to several children destined to become burdens to the community. They seduce young boys and in one case a girl submitted to sixteen boys in succession, and evidently took the initiative. An immense amount of gonorrhea is diffused through the community. It is, of course, hoped that the high degree of salacity will be much diminished by the sterilization. This at least is the case with the male after vasectomy. The danger from the imbecile girl is that she constantly follows men and boys about and thus greatly multiplies opportunities. Segregation will very likely prove to be the only resource for the girls and women of this type.

**Bacteriological Studies in Nurslings with Intestinal Diseases.**—Gildemeister and Baerthlein sum up their finds as follows: in a high percentage of these nurslings bacteria were present which belong to the toxin-poor dysenteric group, and appear to be pathogenic at times—for example a change of diet may activate them—while in other cases the activation is spontaneous, due perhaps to the quantitative factor. We know nothing as to the conditions which permit the germs to multiply. In but a small per cent. of cases have the paratyphus B. and Gaertner's *B. enteritidis* been associated, and it is impossible to state the causes of this association or to what extent the disease picture was influenced by their presence, but the authors are inclined to believe that these germs determine the character of certain diseases. In the nursling feces we frequently encounter the *B. proteus*, *B. pyocyaneus*, and *B. coli* in several forms, both alone and in association with dysentery and paratyphus germs. It has not yet been determined to what extent all these organisms are pathogenic.

**Case of Rare Disturbance of Potence.**—Lissmann relates a case which he believes to be unique. A healthy clergyman married at the age of 32. His vita sexualis had been very simple. He had masturbated as a boy not over three times. After that until his marriage he had occasional nocturnal pollutions with erotic dreams and orgasms. On and after his wedding night he had impotentia coeundi, followed later by normal erection and intromission, but without ejaculation. It was necessary in order that his semen be examined to obtain the latter by masturbation, which was easily effected, and the spermatozoids were found to be normal. Nevertheless for many years the man could not effect an emission. Both the clergyman and his wife had an ardent desire for children which appeared to cause a psychic inhibition of ejaculation. The best authorities in Munich were consulted. Absolutely no reason was found for aspermatism, although numerous theories could be supplied, such as insufficiency of the ejaculatory center as a result of years of disuse. Yohmibin given even by epidural injection, did no more than stimulate the erections. Coitus was performed in the inverted posture, but nothing could rouse the center of ejaculation. Since the patient had been found able to ejaculate with masturbation an attempt was made to employ the latter up to the moment of ejaculation and then insert the penis into the vagina. Although this stratagem was successful conception did not result. As a last resort artificial impregnation was advised.

**Striking Uremic Phenomena.**—Engelen reports the case of a woman aged 38 admitted to a hospital for "apoplexy and uremia." She had had nephritis for five years, and in the meantime convulsive attacks attributed to hysteria. Ordinarily she felt perfectly well, although never free from uremia. The condition on admission was extremely complicated, suggesting hysteria as the simpler solution. She had bronchitis with fever, however. The motor phenomena were unilateral and their nature, together with the state of the psyche, was strongly suggestive of hysteria. Nevertheless the patient soon passed into fatal coma. The author terms the case one of toxic (uremic) hysteria. Uremia alone can cause an entire train of psychic phenomena. There must also have been a focal lesion in the left pyramidal tract.

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**Cerebrospinal Fluid in Tuberculous Meningitis.**—H. Roger calls attention to the following chemical changes characteristic of the cerebrospinal fluid in tuberculous meningitis in the child: hypochloruria, diminution in the ash, a moderate hyperalbuminosis, and a marked reduction in the amount of glucose.—*Le Progrès Médical.*

# Insurance Medicine.

## SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

### ELEMENTARY PRINCIPLES OF LIFE INSURANCE.

*Sources of the Surplus*:—The difference between the actual cost of insurance and the amount of premiums paid with the interest thereon creates a surplus or excess fund, out of which the so-called dividends are taken for distribution to the policyholders. This fund is derived from the following sources:

1. Surplus derived from a Favorable Mortality. In computing the premiums it was assumed that the actual mortality would correspond with the mortality table. In practice, however, it would be impossible to construct an infallible table and as the actual rate will differ somewhat from the tabular rate, it is imperative, for the sake of security, for any deviation to be in the favor of the company; that is, for the rate to be lower rather than higher than that indicated in the table. As a result of careful selection in well-managed companies, some of the policyholders do outlive the period indicated in the table. The deaths of those who live longer than expected will occur ultimately, but the extension of their lives implies the receipt of a larger number of premiums and a longer time for interest on the funds to accumulate, the gains from both sources going into the surplus. A poor selection of risks, on the other hand, with the consequent writing of a lower grade of risks would probably turn these gains into an irretrievable loss.

Experience teaches that a judicious selection of risks after competent examinations results in a mortality considerably less than the average for the same age and that a large influx of new business tends to produce a favorable rate of mortality. For instance, the mortality in the first year of insurance is rarely as high as 50 per cent. of the tabular rate. This percentage gradually diminishes but remains less than the tabular rate for many years longer. It is commonly assumed that the benefit of selection lasts only about five years and this is true to a large extent. Nevertheless, the influence of selection will continue much longer if due consideration is given to such questions as family history, overweight, rheumatism, gout, syphilis, and other conditions which are apt to affect the risks in later life.

The statements of new companies should show the benefit from this early low mortality and the public might be misled by a comparison of their rates with those of the older companies which inevitably experience a higher mortality due to deaths among policyholders of long standing. This advantage to the new companies is offset to a large degree by the increased expense of inaugurating and writing new business and it should furthermore be remembered that the new companies will eventually have the same obligations to meet and that they still have to encounter the vicissitudes and chances of failure incidental to all corporations in their infancy. It is problematical then as to whether or not the low rate of mortality reported by these companies will help materially in forming a surplus.

2. Surplus derived from the Loading. The loading is the amount added to the net premium to provide for the expense of managing the business and for contingencies. The percentage of loading is determined by each company, but competition compels the adoption of a rate as low as possible. Still, the rate must be larger than actually needed and as the excess is added to the surplus, the policy holders are compensated for the additional expense and, at the same time, the security of their interests is made more certain.

3. Surplus earned from a High Interest Rate. The maximum rate of interest that may be assumed by the companies is prescribed by the laws of the several States and varies from 3½ to 4½ per cent. In New York, Massachusetts and a few other States the specified legal standard calls for 3½ per cent., so that a company whose premiums are computed on a 4 per cent. basis must, in order to do business in those States, submit to a valuation of the higher standard of 3½ per cent. Many companies have adjusted their premiums on the still more conservative basis of 3 per cent. The gains and savings from interest will vary according to the reserve basis, the gain from interest being naturally greater on a 3 than on a 3½ or 4 per cent. reserve. The companies should earn between 4 and 4½ per cent. on conservative investments, the difference between this and their assumed rate going to the surplus.

4. Surplus derived from Lapses. Lapses are not a desirable source of profit to a company on account of what is called "Adverse Selection against the company." Nearly all policyholders who lapse are in good health, whereas those whose health has become impaired cling to their policies.

At the end of the third year and thereafter the lapsing policy possesses a "surrender value" made up of a large part of its own reserve which may be withdrawn, or applied to the purchase of a paid-up policy or extended insurance. The extended or continued insurance goes into force automatically, in the event of default in payment of the premium, if the other options are not chosen by the policyholder, and remains as term insurance for a definite period set forth in the policy. The remaining small part of the reserve is retained by the companies as a "surrender charge," but there is grave doubt as to the adequacy of this charge as a compensation to the companies for the adverse selection in lapses.

Surrender values are not granted until the policies have been in force more than two years. Little or nothing is gained by this restriction, however, as the forfeited reserves do not make up for the expense in replacing lapsed policies on the books.

It may be regarded then as a general rule that while some profit may be derived in some cases from lapses, they can not be regarded as an appreciable source of surplus.

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**Effects of Furfural.**—J. T. J. Battle points out that furfural, which is generated by the combustion of tobacco, has a direct effect upon the suprarenal glands, causing an increased flow of their secretions, which in turn first raise the blood pressure, but later decrease it. This explains why a smoker becomes an excessive one. The lowered blood pressure needs constant stimulation. Overstimulation of any organ causes in time a deleterious effect. So the age of beginning smoking should be postponed as long as possible. Tobacco undoubtedly tends to shorten life.—Medical Section, American Life Convention, Hot Springs, February, 1913.

# Book Reviews.

A Clinical System of Tuberculosis, Describing All Forms of the Disease. By Dr. B. Bandelier and Dr. O. Roepke. Translated from the German by Dr. G. Bertram Hunt. $6.00 net. New York: Wm. Wood & Co., 1913.

The authors of the Clinical System of Tuberculosis have already been introduced to the English-speaking public by Dr. Morland's translation of their excellent book, "Tuberculin in Diagnosis and Treatment." The book before us has many interesting features, not the least of which is the conciseness and yet completeness with which it treats of all the clinical phases of tuberculosis. The etiology and pathology receive careful consideration, and while not offering anything new the very excellent colored illustrations give to the student of pathology a very good idea of the changes in the tissues brought about by Koch's bacillus. The symptomatology of the various organs of the body when afflicted with tuberculosis is on the whole excellent. If any criticism of this portion is justified it is that the authors, perhaps inadvertently, neglected almost completely the works of any besides those which originated in the fatherland. Thus the very excellent and classic work of Grancher of Paris on physical diagnosis of the lung does not receive the slightest notice. Important works of English and American authors are likewise ignored in the text and even in the bibliography.

As enthusiastic students of tuberculin therapy the authors devote considerable space to this culture product as a remedial and diagnostic agent. It is pleasing to note that they absolutely reject the conjunctival test as not only distinctly dangerous but also as markedly uncertain and unreliable since the positive reaction generally only indicates that there is a tuberculous focus somewhere in the body, but it is silent as to the site, activity, or inactivity. Refreshing also is the caution which the authors express concerning the use of tuberculin as a remedial agent when they say: "Whoever takes up tuberculin treatment must first master the general details of this valuable remedy and must have the desire and ability to make himself familiar with the various irregularities which may occur." The other well-known remedial agents, medicinal and climatic are enumerated. The aero-, helio-, and hydrotherapy receive their due share, and all of the excellent results obtained at Leysin from exposure to direct sunrays in the surgical forms of tuberculosis are mentioned. Interesting is also the reference to radium as one of the newer means of curing surgical tuberculosis, especially abscesses and fistulæ. Somewhat surprising is the omission of the value of seacoast climate in the treatment of joint tuberculosis, particularly in children.

The translator has done his work well, with the exception of one very unpleasant, if not philologically wrong use of the adjective "tubercular" instead of *tuberculous*. As an example of the inaccuracy of his use of the word tubercular we would refer only to one instance where he speaks of a "tubercular neuritis." It is well known that in the tubercular type of leprosy, where there is a pathological pinheadlike conformation, we may have also a neuritis accompanying it, yet no one would think of considering this tubercular neuritis as having anything to do with the tuberculous neuritis primarily due to the invasion of Koch's tubercle bacillus. Aside from this little criticism the book, which is beautifully gotten up and substantially bound, may be considered as one of the best of its kind and a good guide to the general practitioner as well as to the special student. It is a splendid résumé of what we know up to date of the etiology, pathology, and therapy of the various forms of tuberculosis.

The Fitness of the Environment. An Inquiry into the Biological Significance of the Properties of Matter. By Lawrence J. Henderson, Assistant Professor of Biological Chemistry in Harvard University. In Part Delivered as Lectures in the Lowell Institute, February, 1913. Price $1.50 net. New York: The Macmillan Company, 1913.

All the departments of science are touched upon in this little volume. The subject is presented in a scholarly way and an advanced doctrine is expressed in the light of the recent growth of the science of physical chemistry. The mutual relationship between the organism and the environment was recognized by Darwin and his followers. But the author desires to prove that "fitness of environment is quite as essential a component as the fitness which arises in the process of organic evolution; and in fundamental characteristics the actual environment is the fittest possible abode of life." The applications of the new physical chemistry to physiology began only about fifteen years ago. Maly's important observations on the phenomena of the diffusion and dialysis of phosphates and the behavior of solutions containing carbonic acid, for example, were not definitely explainable until the later theory of ionization shed its light. An understanding of the peculiar conditions of equilibrium between acids and bases in blood and protoplasm is of recent date. The automatic regulation of neutrality possessed by phosphoric acid and carbonic acid is a fact of great importance and of recent knowledge. The author has collected the various chemical and physical facts relating to the general and special properties of matter, etc., in his book and interprets them in their biological relations and in their reciprocal character between organism and environment. The task is one of great biological interest. The author employs a logical rather than a descriptive method, from necessity, he says, in the development of his argument. But he has condensed his evidence in four chapters on which he rests his case. These four chapters comprise: Water, its thermal properties and action upon other substances; carbonic acid, its solubility and acidity; the ocean, its condition, effect on circulation of water, and as environment; and the chemistry of the three elements, C, H, and O. The remaining four chapters of the book are devoted to the purpose and outcome of the investigation. The book is intended for the biologist, and will be of interest to the scientific physician.

A Handbook of Surgery for Dental and Junior Medical Students. By Arthur S. Underwood, M.R.C.S., Eng., L.D.S., Eng., late examiner Royal College of Surgeons, Eng., etc., etc., and Bayford Underwood, M.B., B.S., London; L.R.C.P., M.R.C.S., England. Price $1.50. New York: Wm. Wood & Co., 1913.

This is a very readable condensed surgery quite elementary, even though somewhat comprehensive. There is little if anything new and as the authors state in the preface, considerable has been borrowed from Rose and Carless and other textbooks on the subject. There are very few illustrations. After a cursory view of bacteriology the authors enter upon a discussion of asepsis and antisepsis, followed by the usual chapters on inflammation, ulceration, gangrene wounds, etc. Then follow sections dealing with arteritis, diseases of the nerves (tic, herpes zoster) and of the lymphatics (elephantiasis macroglossia, etc.) and diseases of bones and joints. Under the latter the author makes two broad statements, viz., a single joint inflammation is almost always gonorrheal and "rheumatic" joints in children are more often osteomyelitis. The book is quite general but ought to be of service to those requiring only an elementary knowledge of surgery.

Heredity, Evolution, and Vitalism. By Ronald Campbell Macafie, M.A., M.B., C.M. Price $2.50. New York: Wm. Wood & Co., 1912.

The philosophy of science is one of the predominant notes of this book. The author discusses first the phylogeny of man as a recapitulation of evolution. Weismann's theory of determinants is touched upon and also Mendel's classical experiments. Determination of sex is quite fully discussed with reference to bees from fertilized and unfertilized eggs. In this connection the idea seems quite new that the male offspring is more metabolic, as is shown by the preponderance of males in high dry altitudes where oxidation is more active. The author refutes Darwin's statement, "*natura non facit saltum*," by referring to new species developed without transition and puts special creation in the place of Darwin's denial of the necessity of the supernatural. As to spontaneous life he says vital force is contingently teleological and creative.

Chloride of Lime in Sanitation. By Albert H. Hooker, Technical Director, Hooker Electrochemical Company. New York: John Wiley & Sons, 1913.

The Hooker Electrochemical Company manufactures chloride of lime and set about to collect all data in regard to the use of this substance in sanitation. The result written in book form and presented here is exceedingly satisfactory. The applicability of chloride of lime for the disinfection of water, sewage, garbage, streets, etc., is demonstrated and its cheapness and reliability extolled. About two-thirds of the volume is taken up with abstracts and references which number over four hundred, thus furnishing easy access to all the literature on the subject. In the text, the argument is very forcibly presented, and if the publication largely increases the use of chloride of lime in sanitation it will have been of benefit not only to the makers but also to even a greater degree to the users.

# Society Reports.

## AMERICAN MEDICAL ASSOCIATION.

*Sixty-fourth Annual Meeting, Held at Minneapolis, Minn., June 16, 17, 18, 19 and 20, 1913.*

(Special Report by Telegraph to the MEDICAL RECORD.)

### HOUSE OF DELEGATES.

*Monday, June 16—First Day.*

THE PRESIDENT, DR. ABRAHAM JACOBI OF NEW YORK, IN THE CHAIR.

**President's Address.**—Dr. ABRAHAM JACOBI said that hitherto it had not been the custom of the president of the American Medical Association to consider the strictly scientific or technical problems that affected the association, but to leave these with the sections. He would take the liberty to suggest that the papers presented be fewer in number, as they did not all benefit ten thousand listeners. Ample discussion would be more profitable than voluminous papers. All extemporaneous remarks enlisted sympathy and not only drew audiences but held them. All successful medical societies, as well as other organizations, made the office of secretary more or less permanent, and it seemed desirable to him that a change in this organization with respect to the term of office of the secretaries of sections be made. Such a step would add to the character of the section work. It was one of the functions of the president of the association to act as teacher and guide in the political, educational and economic interests of the profession and they were responsible to those of the profession less instructed and less capable than themselves. At present the influence of the president was trifling and far from permanent. His duties were few. It was not proper that he should suggest changes resulting in an extension of the duties of his office while he was holding that office lest he be suspected of adding to his own prerogatives.

One should never be the prey of political push. Thus the office demanded few duties but profound silence. He had asked for invitations to attend the meetings of councils, committees, etc. These had always been granted and he had been received cordially but it seemed to him that the president of the association should be chairman of some of the conferences and have a deciding vote in others. He should have the right of speech in all. Dr. Jacobi said he would like to address the absentees. It was largely their neglect of duty that was responsible for the accusations of conspiracy on the part of those active in the conduct of the affairs of the association. The indifference of those at home who shirked their duties did not help to make willing servants of their delegates. Complaint had been made that the activities of the American Medical Association were at a standstill; he had received many letters objecting to the methods of the association in conducting its business and asking for a more open procedure. There was no reason in these complaints, for the House of Delegates had great responsibilities. It might be suggested that the house should convene two or three days before the scientific meeting when there would be more time for due deliberation. Those of scientific mind and heart wished to fulfill all obligations and many declined the duties of delegates because they wished to devote their time to the section work. The various States should select delegates for their personality, and if they did this there would be fewer complaints of the autocracy of the House of Delegates and less fault found with the method of conducting business.

Dr. Jacobi then read a letter from the American Institute of Homeopathy asking that a committee of five from the American Medical Association be appointed to confer with a similar committee from the aforenamed organization for the purpose of making a scientific investigation of the formula, *similia similibus curantur*. The letter further suggested that such an investigation be conducted under the auspices of some institution like the Rockefeller or the McCormick Institutes. Such an investigation would be of the utmost value to both schools of medicine. If the theory of homeopathy were found to be true it would add materially to the armamentarium of the regular physician, and if it were disproved then the last barrier to medical unity would be swept away.

**Report of the Secretary.**—Dr. ALEXANDER R. CRAIG of Chicago submitted this report in which he stated that the membership of the American Medical Association on May 1, 1912, was 34,283. During the past year a total of 2,421 names had been deducted from the membership list. There had been added 6,051 names to the membership roll of which 4,695 were transferred from the subscription list. The membership of the American Medical Association on May 1, 1913, was 37,913, a net increase for the year of 3,630. As was readily seen this gain in members was due largely to circularizing subscribers to the Journal who were eligible, urging them to become members. This increase under normal conditions would have been distributed throughout the years during which the question of postage on journals mailed to members was unsettled. The secretary also presented a petition to create a section on gastroenterology and proctology. He submitted a petition from the Medical Association of Porto Rico addressed to the House of Delegates of the American Medical Association praying that the Medical Association of Porto Rico be accepted as a constituent branch of the American Medical Asssociation.

**Report of the Board of Trustees.**—Dr. W. W. GRANT of Denver submitted this report. He said that it was a pleasure to report favorable and in the main very satisfactory progress in association work during the past year. The establishment of a surgical journal was still under consideration by a committee of the Board of Trustees. The Council on Health and Public Instruction was doing an educational work of the greatest interest and importance in public health matters. Its cooperation with clubs and non-medical organizations in creating a public interest and demand for medical lectures and information on public health matters was worthy of the commendation and endorsement of the profession. The Committee on Medical Education had continued its active labors in behalf of fewer and better schools, better standards of admission, more scientific instruction, and a higher class of men for the practice of medicine and surgery. The board had last year passed a resolution limiting the length of papers to four pages of the Journal and the discussions of each speaker to five hundred words, unless otherwise ordered by the publication committee. The conditions, however, during the past year had been aggravated by the increased number of sections. For instance, in 1908 there were 294 papers read before the sections; in 1910, 315; in 1912, 411. This large number of papers made it impossible to complete their publication within a reasonable length of time, which was a serious disadvantage both to the Journal and the authors. Furthermore in the endeavor to crowd section papers through little space was left for voluntary articles and of course it was realized that the success of the Journal depended much on the excellent work of the association, especially as far as finances were concerned. Therefore the board suggested that the House of Delegates give the subject serious consideration before it established more sections. The large number of sections made it increasingly difficult to find satisfactory places of meeting and there was danger of making the section work top-heavy and of the duplication of subjects by two or more sections. They had therefore adopted a resolution at their February meeting recommending that the number of papers to be read in any section at the annual meeting should not exceed thirty and that the by-laws be changed in accordance with this resolution. The board further recommended that the retiring chairman should be the one to pass on and approve or disapprove of the publication of the papers read and that the by-laws be modified to meet this recommendation. The board recommended that the House of Delegates take some action either in the form of resolutions or otherwise urging the sections to consider the advisability of making the secretaryship a more permanent office than it was now. The board believed that this recommendation was of vital importance. However, the Board of Trustees considered the advisability of appointing a committee to assist the State journals that were conducted in accordance with reasonable rules as to plain honesty in their advertising and reading pages, in securing honest advertisement on a reasonable percentage basis. In line with this recommendation a plan was being worked out to establish a cooperative medical advertising bureau in the association headquarters with the object of furthering the interests of the various State journals that complied with the standard regarding advertising. This would mean the appropriation of a certain amount of money, as the board expected to be able to adopt a plan at the present meeting.

Relative to the action of the House of Delegates recommending that the Board of Trustees be directed to amend the charter so as to provide that the president, the secretary, and the editor of the Journal should be ex-officio members of the Board of Trustees without the right to vote, and that the secretary of the association should be ex-officio secretary of the Board of Trustees, the attorneys of the association expressed the opinion that this

would be invalid under the laws of Illinois. The circulation of the *Archives of Internal Medicine* was increasing as much as could be expected, though the loss on this publication last year was $500. The circulation of the *American Journal of Diseases of Children* was now approximately 1,900, the loss on this publication having been about $300 last year.

With reference to the work of the Council on Pharmacy and Chemistry it was emphasized that the Council was now doing more practical and constructive work than ever. Especially of this character was the clinical and research work being done under the direction of the Committee on Therapeutic Research. The board had thus far appropriated $3,500 for this work, believing that it should be encouraged in an endorsement of the Council's broader aims toward the improvement of conditions. It was mentioned that it had now issued, in preliminary form, a publication known as "Useful Remedies." This contained a limited list of drugs and when issued in complete form the book would include a description of the action, use, and dosage of the drugs mentioned. The main object of the book was to furnish a list of important drugs that should be used as a basis of teaching in medical schools, and also as a basis on which State Boards of Examiners should examine applicants for license to practice. Although issued only in a tentative form, this book had already been adopted by several schools and also by various examining boards. As a direct result of the work of the Council on Pharmacy and Chemistry, a similar body had been created in Germany. One of the principal men in this body, and the one really responsible for it, was Professor Heubner, of the University of Göttingen, and editor of the *Therapeutische Monatshefte*. The Council asked the Board of Trustees to elect Professor Heubner a corresponding member of the Council on Pharmacy and Chemistry. This the board gladly did, especially because of the great work he had done in bringing about better conditions in Germany.

The work of the Council on Pharmacy and Chemistry was not as cordially supported as it should be by the leaders in the profession, surgeons as well as clinicians, but the rank and file of the profession did appreciate the work and were cooperating. For instance, a large number of physicians dispensed their own drugs, and it was charged that many of such physicians obtained their drugs from so-called "physicians'" supply houses. It was also charged that the official drugs furnished by these supply houses were not standard. Their chemists had about completed an investigation covering many of the products put out by these firms, and the report of this work would soon be published. The work of enlightening the public in regard to fraudulent "patent medicines" and quackery had been broadened in its scope and was producing encouraging results. The number of inquiries from laymen had increased enormously. Many lay societies carrying on antituberculosis campaigns had used the information published in the Journal on "Consumption Cure" frauds and had distributed numbers of their pamphlets in their employees' libraries. Newspapers and magazines were continually writing for information in regard to advertisers. A second edition of the book "Nostrums and Quackery" had been issued, the first edition of 10,000 copies having been exhausted in less than a year.

In accordance with the authorization they, the House of Delegates, secured a bronze bust of Dr. N. S. Davis, and placed it in what was originally called the library, but which by definite action on the part of the Board was now designated as the Davis Memorial Room. The balance of the fund, $3,299.43, was made a permanent fund to be used in any appropriate way, other than the purchase of books, in furnishing and maintaining the Davis Memorial Room in the new building. The Board suggested that the Davis Memorial Room would make an excellent repository for articles of historical interest to the medical profession and to medicine in this country, such as medallions, portraits of prominent men, *Festschrifts,* memorial volumes, etc. Dr. Grant submitted reports from the subscription department of the Journal showing an average weekly circulation of 57,204 and the treasurer's report showed a net income for the year of $39,147, and the total value of the property and plant of the association as $345,613.

**Report of Judicial Council.**—Dr. ALEXANDER LAMBERT of New York presented this report, in which he discussed the matter of membership in the American Medical Association and the relation of this membership to the constituent State and territorial bodies. Membership in any county society of any constituent body should legally, and did, constitute membership in the State body in the State to which the county belonged, and to the national body. Any physician, therefore, joining a county medical society of a constituent State or territorial body thus logically became a member of the American Medical Association. In this membership were some who were content to remain on this footing, but there were others who desired to go further and in this desire were willing to tax themselves by a definite annual fee by which they might maintain the scientific work and the scientific sessions of the American Medical Association, its Journal, and its manifold activities for the benefit of themselves, the other members of the American Medical Association, and the profession at large throughout the United States. These members supporting the scientific work of the American Medical Association, it seemed wise to designate by some special appellation, and this was best fulfilled by the term "Fellows of the American Medical Association." With this explanation of the meaning of the differences between membership and fellowship the judicial council recommended to the House of Delegates that the by-laws be amended to indicate this difference in membership and fellowship in the association.

The Judicial Council had expressed to Dr. J. W. Barrett, of Melbourne, Australia, its appreciation of the invitation he extended on behalf of the Trustees of the Congress and the University of Melbourne to the members of the American Medical Association to attend the Australian Medical Congress to be held in Auckland, New Zealand, in 1914. Members who were able to accept this invitation must leave in January, 1914, the trip requiring three months. Members who desired to make this trip would be furnished with letters of introduction to the New Zealand Medical Association and the Australian Medical Society announcing their membership in the American Medical Association. Literature concerning New Zealand and the trip, sent from Auckland, was in the hands of the secretary of the association.

With reference to a resolution offered at the last meeting of the House of Delegates that a Speaker should be elected who should preside during the twelve months and until his successor should be elected, the Judicial Council considered that this resolution brought up two questions: First, whether or not a Speaker should be elected to preside over the House of Delegates, and, second, whether this officer should be elected by each House of Delegates to preside over its sessions or whether any given House of Delegates should elect a presiding officer for a succeeding house without this succeeding house having any say in the matter. The Judicial Council believed that it should not decide these questions. It, therefore, made the following recommendations: That the House of Delegates should choose a time and an hour at this meeting in which it should sit as a committee of the whole to consider and decide these questions for itself.

With reference to fee-splitting the Judicial Council reported that a circular was sent to each president and to each secretary of each county society in every State in the United States, and various sections of the country were further apportioned off to the members of the Judicial Council who sent throughout their sections personal letters, containing these circulars, to various members of the profession whom the members of the Judicial Council knew to be prominent in their sections and who would be conversant with the public opinion and the practices of the various members of the profession in their communities. Some six thousand circulars were thus sent out and the replies received amounted to just over 50 per cent. of the circulars sent. It might be justly said to be a report founded on the representative opinion of the members of the American Medical Association. From the statistics thus gathered it was evident that in the matter of secret splitting of fees, while the existence of the practice could not be denied in any State, the degree of its prevalence varied greatly in different sections of the United States, and the opinion of the local profession for or against it also varied in different regions. In the New England States the practice was not prevalent, though it existed to a slight degree in them all, being most prevalent in and toward the larger cities of Massachusetts and in that part of Connecticut that was near New York. In New York State the practice varied, some counties being nearly free of the evil, other counties and the large cities being filled with it. In New York City, with its crowded population and with its large proportion of foreigners in some sections of the city, among certain groups of men it was without doubt the rule rather than the exception. It was interesting to note that in the replies given, stating whether or not secret fee-splitting was justifiable there were 77.3 per cent. who answered in the negative, 13.4 per cent. who answered in the affirmative, and 9.3 per cent. who were doubtful. It was interesting to note the rea-

sons given for this secret fee-splitting, as a justification, in the statistics which formed the basis of this report. One of the commonest reasons was that it was justifiable because of the disproportionate fee between the amount paid the surgeon and the amount paid the physician who had made the diagnosis and referred the patient to the surgeon. This was on the basis that a wrong had been done the physician because his services were not as well paid as those of the surgeon. But two wrongs never yet made a right and the further wrongdoing of taking a patient to a surgeon because the latter split the most generously did not remedy or make up an injustice, however great this had been to the physician.

This report also condemned the taking of a commission from a commercial house furnishing an instrument or appliance to a patient and the taking of rebates from hospitals and sanatoria by those sending patients to such institutions. There was no reason in law or morals why a physician should not enter into a contract with an individual, firm, or corporation provided that the contract was an honorable one and did not interfere with the rights of others.

In the mater of lodge practice and fraternal and benevolent societies another situation arose, namely, the question of health insurance. Medical attendance in the lodge and fraternal benevolent associations was a part of the inducement offered members of these associations. There was a point in wage earnings at which these lodge medical services were not economic necessities, but on the other hand there was a point in wage earnings at which the ratio of fixed charges to total income was such that these fraternal societies did become an economic necessity in the sense of health insurance. The late Dr. Bristow, in an address before the New York Academy of Medicine, strongly emphasized this point of view. He further showed that in the United States the annual income of adult males was in 90 per cent. less than $800; in 75 per cent. less than $600, and in fully 50 per cent. less than $500, with 20 per cent. earning as low as $200 per annum. On the other hand, the result on the medical profession of this economic situation was that hardly more than 10 per cent. of the physicians in the United States were able to earn a comfortable income. The medical profession found that an adequate medical education required of students a constantly increasing length of time and of money for its attainment. It was the most costly of all the learned professions, and with the living expenses constantly increasing and with the physicians' opportunities of earning a livelihood from the general population constantly diminishing, and further with the profession devoted to self-immolation by its constantly increasing development of preventive medicine and sanitation, they were forced to consider the situation as one produced by economic forces and that lodge practice under certain circumstances was one of health insurance that must be accepted and controlled and not condemned and shunned. Fee-splitting could be best remedied by the profession announcing that it demanded publicity in all transactions between patients and the members of the profession and that it refused to sanction the retention on the roster of any of its organizations of the names of those who were proven guilty of these practices. The physician had himself to blame who failed to put a just appraisal on his services and to demand a just reward for them and who, through failure of endeavor to collect his just deserts, found himself unappreciated.

The replies received by the Judicial Council on the matter of contracts in mines and railroads and factories showed that in some states the contracts were just and that the recompense to the physician was in ratio to services rendered and was adequate in amount for such services. On the other hand, there were other replies which showed the reverse. The Judicial Council believed the remedy for these evils resided in the county societies, that these societies should use their influence and power not to condemn the physician who must take the contract by ostracizing him, but to prevent underbidding for these contracts below what would give a fair reward for medical services rendered. So, too, in the matter of lodge practice the Judicial Council believed it to be the duty of the local county societies to endeavor to reform and not alone to condemn the abuses of lodge practice.

The Judicial Council, therefore, recommended for adoption by the House of Delegates the following resolutions:

*Resolved*, That any member of the American Medical Association found guilty of secret fee-splitting or of giving or receiving commissions shall cease to be a member of the American Medical Association.

*Resolved*, That the House of Delegates of the American Medical Association recommends to each constituent body that it endeavor through the action of its various county societies to reform the various abuses of lodge practice in their separate communities in order that the lodges may give an adequate service to their members and an honorable remuneration to the medical men.

**Report of the Council on Health and Public Instruction.**—Dr. Henry B. Favell of Chicago presented this report in which he stated that the press bulletin had been continued throughout the past year, a weekly bulletin being prepared and mailed to approximately 5,000 newspapers and publications. During the year from June 1, 1912, to June 1, 1913, forty-four press bulletins had been issued, with an average circulation of 4,763. The effect of this bulletin on the newspapers of the country was apparent. Not only were the items contained in the bulletin more generally used than in previous years, but there had been a marked change in attitude of the press toward the medical profession and the association. Editorials criticising physicians as a class were by no means as common as they were in previous years, while there was an increase in the number of newspapers that used the press bulletin material regularly and as texts for editorials. Speakers had been furnished for 213 meetings held in the seven months, from November 1, 1912, to June 1, 1913. Many requests had been denied, either because the invitation came from a single organization or because the town was too small, and the audience offered would justify the expenditure. The revision of the list of speakers and the preparation of an announcement for the coming season was now being carried on. In the light of the experience of the past seven months the most promising fields for this work seemed to be women's clubs, normal schools, colleges, and other educational institutions and Chautauquas. Teachers' institutes and farmers' institutes, alliances and granges were not included in the plans for the past year owing to the difficulty experienced in securing a complete list of these organizations. They could be included in plans for the coming year. The council recommended that each State which had not already done so be asked to establish a standing committee on public education, either as a separate committee or in conjunction with other duties, and that this committee have oversight of the work of furnishing speakers for the State, calling on the Speakers' Bureau of the American Medical Association to furnish speakers from a distance for the larger and more important meetings. By such a division of work the activities of the association in this direction could be greatly extended. Each State committee could call on the Speakers' Bureau of the American Medical Association to furnish speakers for from five to ten meetings in each State during the year. The organization of a bureau for loaning lantern slides to speakers of local societies and others had been begun, but had not yet sufficiently advanced to render a definite report possible at this time. The Council had called a conference of the various organizations interested in public health work, about fifty organizations having been invited which convened in New York April 12, 1913. After exhaustive discussion of the situation in which the need of better organization and coordination was generally admitted, the conference adopted a resolution offered by Prof. Irving Fisher, authorizing the chairman to appoint a committee of fifteen, to consider the entire question of public health activities and the ways in which they could be improved and to report its findings with definite recommendations to a subsequent meeting of the conference. It was hoped that this movement might result in better coordination of the organized efforts for the conservation of life and health. The work of establishing a medicolegal bureau was progressing. The collection of laws on public health topics had been completed and the bureau had undertaken the preparation of a series of model laws.

During the fall and winter legislators had met in forty-two States. The number of bills bearing on public health matters had probably been unprecedented. As nearly as could be estimated between 700 and 800 bills on health or related subjects had been introduced in the different legislatures. A considerable portion of the time and efforts of the council during the past year had been devoted to an effort to bring about harmonious cooperation between the council itself, the special committee on national health organization, and the committee of one hundred in order that the definite program might be adopted by which concerted action for national health might be possible. Two days' conference resulted in the appointment of a special committee to call on President Wilson and urge on him the importance of establishing a national Department of Health and a White House conference on vital resources.

A committee was also appointed to confer with Senator Owen with a view to revising the present Senate Bill No. 1 The conference also endorsed the program drafted by Prof. Irving Fisher and unanimously adopted after exhaustive discussion, which requested that President Wilson should call a White House conference on public health next fall somewhat similar to the Governors' conference on conservation called by President Roosevelt, the object of this conference being to promote the success of the President's policy and if necessary to aid in framing these policies; that at the next regular session the President should send a special message favoring public health legislation or else should emphasize it in his regular annual message; that the President should select for the position of First Assistant Secretary of the Treasury some one interested in public health; and that in the next regular session they should support the President in securing such public health legislation as he decided to recommend.

The report of the Council on Health and Public Instruction included reports from subcommittees on the prevention of blindness due to accidents, on trachoma, on wood alcohol, etc., on visual standards for pilots, on resuscitation from electric shock, on the protection of medical research, on cooperation with the National Education Association for public health work among women, and on the revision of the model law on vital statistics.

**On the Uniform Regulation of Membership.**—Dr. Thomas McDavitt of St. Paul made this report which contained the following resolutions: (1) That this conference endorse the plan of having the fiscal year coincide with the calendar year in all parts of the organization; that secretaries of all State associations which have not already adopted this provision bring this matter to the attention of their associations and recommend its adoption. (2) That the constituent State associations adopt provisions making dues in county societies payable on January 1 of each year, and requiring county secretaries to report to State secretaries all members in good standing, together with their per capita assessment for the current year not later than March 31. State societies desiring to do so may provide a shorter period. (3) Regarding the prorating of dues they recommended that this be made optional with each local society. (4) Regarding an admission fee for membership the committee recommended that this be made optional with local societies. (5) That the House of Delegates of the American Medical Association be asked to consider the advisability of issuing charters to constituent State associations. (6) As the committee recognized the value of the conference of secretaries to the State association secretaries, and to the purposes of organization, it therefore recommends that future conferences of this character be held.

**Report of the Council on Medical Education.**—Dr. Arthur Dean Bevan of Chicago presented this report, in which he declared that the progress reported in previous years was still being continued. The Ninth Annual Conference on Medical Education was held in Chicago, February 24. Probably the most effective work carried on by the Council had been through these annual conferences which had been regularly attended by delegates from medical colleges, State licensing boards, State medical societies, colleges, associations, federations of State boards, and university presidents. These conferences had constituted an open forum in which the various problems in medical education had been taken up and given thorough and frank discussion. It was undoubtedly through these conferences that unanimity of effort by the various agencies working for an improved medical education had been secured and as a result of which such decided progress had been made. In this connection a recent bulletin issued by the United States Bureau of Education, after reproducing several pages from the Council's report, in regard to medical education said: "No more marvelous chapter in the history of educational standards can be found than in a review of the work of these conferences." The report showed that after January 14 there would be at least seventy-five medical colleges which have put into effect entrance requirements of at least one year of college work, including courses in physics, chemistry, biology, and a modern language. There were thirty-two medical schools requiring two or more years' work in a college of liberal arts in addition to a four years' high school education. There were now eleven State medical licensing boards which had adopted preliminary requirements in advance of a four years' high school education. In no section of the country had the Council had more hearty cooperation than in the South, and on the part of the medical colleges, and in no section of the country had improvements in medical education been greater than in those of the Southern States. Tennessee, which formerly had twelve medical schools, now had only five and three of these, including one negro school, had undergone a remarkable development. In Alabama, Arkansas, Mississippi, Oklahoma, and South Carolina there were now single medical schools supported and controlled by the State. The same development had been going on in the medical schools in practically every Southern State. The generosity with which the people of several Southern cities had come to the support of their local medical schools had shown what might be done in the cities of other sections of the country.

In regard to the cost of teaching medicine definite reports from sixty-five colleges showed that the expense of teaching each student ranged from one and one-half to several times the amount that the student paid in fees. The average amount paid out per student by the sixty-five colleges was $410, while the average amount received in fees was $122. With the same equipment these same schools could probably accommodate two or three times the present number of students, which would greatly reduce the disproportion of expense over income from fees, and hence a further reduction of the number of medical schools would be in the interest of economy and to the betterment of medical education. Any plea for the continuance of the low grade medical school was in the interest of the boy poor in scholarship rather than the one poor in purse, as it cost the student no more at a first-class medical school than at one of low grade. Twenty-seven States now had medical schools as integral parts of the States' universities.

As had been stated in a previous report there were, in 1904, 166 medical schools in the United States, which was nearly one-half of the world's supply. Since that time the decrease in the number of schools had been quite rapid. This had been brought about partly by the disappearance of the commercial medical schools, which had gone out of existence, but more largely through the merger of several small schools in each of numerous localities, leaving in each instance one larger and stronger school. The number of medical schools would be about 110 at the end of the present college session.

Reliable information showed that in 117 medical schools existing in 1912 there were altogether 876 full-time salaried teachers, and of this number 490 had professorial rank. This was at the rate of eight full-time teachers to each school. In regard to the opportunities for the hospital interne year, 852 hospitals reported 3,006 internes in active service. Since there were only about 4,500 medical graduates each year there were still about 1,500 graduates for whom to provide interneships. There were baout 1,400 hospitals having altogether approximately 135,000 beds, which at present had no internes. There was every reason to believe that a special campaign carried on among these hospitals would result in providing an opportunity of an interneship for every medical graduate. From these figures it would seem that definite requirements by State medical boards for a hospital interneship as a prerequisite for license could be made possible within the next few years without working a special hardship on any of the parties concerned. In referring to the subject of State licensing boards, Dr. Bevan declared that the great problem in medical licensure, therefore, was: how to secure a close cooperation between the various State licensing boards by which unanimity of action, uniformity of standards, and equally thorough methods and examinations might be obtained.

Recognizing this need of cooperation there had recently been organized the Federation of State Medical Boards, resulting from the effort to merge the two confederations which had been in existence for several years. Under the new constitution this federation gave promise of doing effective work and it certainly had a great opportunity. It was hoped that all State medical boards would unite with this organization not only for the added protection it would furnish for the individual State but also for the great good that could and needed to be accomplished for the country as a whole. The work in connection with medical colleges had now reached a stage where an American standard of medical education was well fixed and the chief efforts should be not so much toward higher standards as in securing international improvements, better teachers, better hospital and dispensary facilities, more research, and, above all, greater endowments. The marked improvements made in medical colleges in recent years revealed in marked contrast the improvements needed in medical licensures. Many States needed better medical practice acts. In each State there should be a single board in control and a single educational standard by which all practitioners of the healing art should be measured regardless of the particular methods of treatment to be followed. The very best men available should be selected as members

of the licensing boards, and if possible these boards should be taken out of politics. Examinations should be made more practical and thorough whereby a student would have to show evidences of actual training rather than of cramming in quizzes or from compends.

**Report of Committee on Scientific Exhibit.**—Dr. F. Frank B. Wynn of Indianapolis presented this report. He stated that the present scientific exhibit had not been surpassed if it had been equaled at any previous meeting. The superb housing this year appealed to the scientific workers, but would probably spoil them for accepting what necessity might offer in the future. There were certain features of the exhibit that should be emphasized. Anatomy and physiology had received more attention than hitherto. Surgical pathology, both gross and microscopical, made a creditable showing. The newer methods of anesthesia and physiological researches in anesthesia were well demonstrated. A large number of exhibitors, 38 in number, had been brought to recognize the advantages of demonstrations. These were to be given at stated hours. The present aim and purpose of the exhibit was to furnish an avenue through which the fruits of research might be presented to other research workers and to the practitioner. It aimed to coordinate the work of the sections with the exhibits and several papers to be read at this meeting were illustrated in this way. The exhibit became to the real investigator a forum. It served also to democratize the profession. Snobbery did not belong in their ranks and the research worker who would withhold his work from the rank and file of the profession was a snob. The exhibit served to create an understanding between the surgeon who scoffed at the laboratory and the laboratory worker. It served as a restraining influence binding together all the agencies working together toward medical advancement. They owed a debt of gratitude to those who had contributed to this work and could do no less than give them the patronage they deserved.

**Report of Committee on Anesthesia.**—Dr. W. D. Gatch of Indianapolis presented this report in which he stated that the committee was of the opinion that the subject of anesthesia was too broad, and that its practical hearings were too important to be reviewed adequately in a brief report. They felt that the time had come when this committee should do for anesthesia what the council of pharmacy had done for pharmacy, namely, make a thorough-going, critical investigation of every phase of the subject. For the following reasons they believed that there was need for such an investigation: (1) Communications from surgeons and anesthetists in all parts of the country that there was a general dissatisfaction with the present results in anesthesia. Deaths and postanesthetic complications were far too common. (2) There had of late been a tremendous interest in everything which had to do with anesthesia. The physiology, pathology, and pharmacology thereof were being studied by many investigators and numerous new methods were being tried. The proper evaluation of these procedures required thorough investigation, for there was danger that at least in unskillful hands many of them might cause harm, and that, therefore, some very useful methods might fall into discredit. (3) Ether, nitrous oxide, and choloroform had obvious disadvantages, and it was not unreasonable to hope that scientific pharmacology might be able to discover new and better anesthetics. An investigation of the kind they advocated might do much to stimulate work with this object in view. Good results in anesthesia depended not only on the skillful administration of the anesthestics, but also on careful preliminary examination and preparation of the patient, intelligent cooperation of the surgeon and anesthetist, and proper postoperative care. To secure the necessary attention to each patient required a hospital organization especially adapted to this purpose. In each hospital some one man must be made responsible for good results in anesthesia. He must be given the authority to see that every patient was carefully examined and prepared for operation; he must confer when necessary with the surgeon concerning the anesthesia and he must be put in charge of the patient during his recovery from the same. He must have the power to instruct and direct the nurses and internes in the part of the work which they might be called on to do. Finally, he must be held responsible for every complication or accident due to anesthesia. A competent man provided with the authority outlined and cooperating with his surgeon could at the present time prevent most of the deaths and other calamities which were all too frequent under the present system. A good salary, together with the interest and importance of the work, would secure plenty of men capable of filling such a position in any city of the country.

The committee believed that every student should receive adequate instruction in anesthesia, that this should not be limited to the mere administration of anesthetics, but should be broad enough in scope to give the student an intelligent conception of all the factors that must be taken into account in planning the anesthetic for each patient. They condemned the practice of allowing students to administer the anesthetic except under very strict supervision, which should be given during the interne year.

*Tuesday, June 17—Second Day.*

The President, Dr. John A. Witherspoon, in the Chair.

**Report of the Committee on Red Cross Medical Work.**—Dr. George W. Kober of Washington reported that on April 30 fifty-seven county medical societies in twenty-four States had organized committees and a number of secretaries of county societies had acknowledged the receipt of the communication and had promised to bring it to the attention of the respective bodies at the next meeting. He would supply the names of five physicians to serve as members of county committee on Red Cross medical work, two of whom should be the president and secretary of the county medical society ex-officio. In case of a disaster requiring the intervention of the Red Cross, that organization would be in a position to call upon the county committee to select a sufficient number of qualified medical men for service to advise with the representatives of the society on questions of medical policy and procedure. The Red Cross would thus be assured of the services of qualified medical men.

**Report of the Committee on Scientific Research.**—Ludwig Hektoen of Chicago reported that the committee had during the past year given special grants of $200 to Dr. A. Sophian of New York, Dr. R. M. Pearce, Dr J. H. Austin, Dr. Arthur D. Eisenbrey and Dr. O. H. Pepper of Philadelphia for experimental work on contagious diseases.

**Report of the Committee on Nomenclature and Classification of Disease.**—Dr. Cressy L. Wilbur of Washington reported that after the last meeting it had been found that only a tentative edition of 1,000 copies was possible. He trusted that the work might proceed and that a plan might be found for general distribution to physicians of copies of a brief booklet containing the nomenclature and asked that members of the committee be continued.

**Report of the Committee on a Memorial to the Medical Officers Who Lost Their Lives in the Civil War.**—This committee reported that the formation of a general committee of one from each State had progressed rapidly since the issuance of an explanatory circular letter to one delegate in each State requesting nominations to the central committee. The complete list of naval surgeons who lost their lives during the Civil War was received from the Bureau of Medicine and Surgery of the Navy Department. Both in Illinois and Georgia memorials embodying the sentiments advocated in the first report of the committee were about to be erected. The committee asked that it be continued with all the privileges, instructions, and appropriations authorized by the House of Delegates in 1909.

**Report of the Committee to Consider the Mode of Commemorating the Completion of the Panama Canal.**—The report submitted recommended: First, the American Medical Association at its 1913 meeting should memorialize Congress to establish a permanent monument in recognition of the great work of Americans in sanitary science and preventive medicine. A hospital for tropical diseases would fullfil the purpose of such memorial. Second, the committee should be authorized to carry out the plans generally submitted last year and such authorization should be specific in indicating the organization of a congress and the constituency of such a congress. Third, provision should be made for funds sufficient to carry out the plans and the way such funds should be available should be specified.

**Report of a Committee to Advise with the British Medical Association.**—Dr. W. W. Grant reported that nothing definite had been accomplished and stated that the committee asked to be continued or a new committee should be constituted to complete its task. The House of Delegates should empower it to arrange for such a joint session, should this be desirable, it being definitely understood that in the interim between the meetings of the House of Delegates the committee should act in cooperation with and under the sanction of the Board of Trustees.

**Report of the Committee on Clinics.**—Dr. Charles

Mix of Chicago announced that Minneapolis and St. Paul had only modern amphitheatres seating not more than thirty-five or forty persons, hence they had been modest in announcing clinics. Clinics would be given on Friday and Saturday, however. This committee requested that the same publicity be given to its work as to that given to the sections. They thought it desirable that the program of their work should appear on the regular program. The great success of the clinics showed that they were in demand.

Dr. G. Wythe Cooke of the District of Columbia presented a resolution providing that each constituent society should have control over its own membership without interference from the American Medical Association. Any member of a constituent society after removing from his district remained eligible for the American Medical Association for eighteen months, after which he was no longer eligible until he had reestablished himself by becoming a member of the local society in the district in which he resided.

**Baltimore Home for Physicians' Widows and Orphans.**—Dr. Randolf Winslow of Baltimore presented a petition from the manager of a home for widows and orphans of physicians proposing to turn over the property and franchise of the home to the American Medical Association. The property was a building three and one-half stories in height, in the best residence district of Baltimore. Its scope was already national and the only object in making this offer was to provide for permanence. The only condition was that the home should continue under the present management and should remain in Baltimore.

All reports of officers, councils, and committees and other communications were referred to their appropriate committees.

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GENERAL SESSIONS.

*Tuesday, June 17—First Day.*

The President, Dr. Abraham Jacobi, of New York, in the Chair.

**Invocation.**—The Reverend James E. Freeman, D.D., of Minneapolis, made the invocation.

**Addresses of Welcome.**—Dr. George Edgar Vincent, President of the University of Minnesota, said that the State of Minnesota maintained a center of scientific investigation and liberal professional education. To the members of the University community it was a keen satisfaction to welcome this distinguished body, dominated by scientific spirit and by educational ideals. In the days when specialization in research seemed to isolate investigators from one another it was well to remember that fundamental to all specialized tasks was a method and an aim which bound all separate inquiries into one inspiring cooperative search for truth. It was also well to remember that science was a unity. The Medical School extended fraternal greetings of genuine warmth. In this school the University took a just pride. To the upbuilding of this school the medical men of these cities had devoted themselves loyally. Under conditions sometimes disheartening they had persisted with courage and unflagging zeal. Gradually the unification of medical education for the whole State was achieved. Minnesota enjoyed the distinction of a unified medical education under State control. The close association between the laboratory and the Medical School and the State Board of Health afforded efficient concentration. The school was fortunate in the complete control of its own hospital whose capacity, by a recent act of the legislature was increased to 175 beds. Inasmuch as the hospital received only charity patients, certain complications which sometimes arose when hospitals were conducted on another basis, were happily avoided. The affiliation with the city hospitals of Minneapolis and St. Paul provided a wide range of clinical material and gave the school facilities for thorough instruction.

While the Medical School laid more stress upon men than buildings, it would be affectation to conceal the satisfaction which the institution felt in the new and completely equipped laboratories which had been provided for the medical school. These represented an immense amount of labor, study, planning, and supervision on the part of the members of the medical staff. If the Medical School of the university was not satisfied with merely being in Class A plus, but had the ambition to occupy a high place in that honored list, its friends would set this down to the natural hopefulness of this buoyant region. They hoped to win an increasing recognition for their devotion to high standards and ideals of undergraduate teaching, development, graduate instruction, and the fostering of medical research. They looked forward to the time when the Medical School would be brought into close relationship with the various hospitals and institutions of the State. Through this agency the university might increase the scope and efficiency of its service to the commonwealth.

One aspect of medical education gave considerable concern. The universities relied upon the American Medical Association to do a part in solving the problem. A number of years were required for medical education and the consequent expense created a danger of limiting the area of ability from which the medical profession was recruited. To the plea that individuals had a right to a short and easy road to professional practice one might turn a deaf ear, but here the interests of the public transcended those of individuals. Cheap medical education was most expensive for the community. But to limit the candidates for medical practice to those who were economically strong was a wholly different thing. There was reason to believe that men and women who might contribute much to the progress of medicine were now excluded from candidacy. A system of scholarships, maintained through private endowment, through State aid, or through the cooperation of an association might go far toward meeting this difficulty. The ranks of the profession must be open to the best ability, wherever it was to be found.

This community was honored by the presence of men and women dominated by the scientific spirit. In a sense with the advance of knowledge the area of disagreement was narrowed. As phenomena were investigated and laws were formulated, differences of opinion yielded to convincing tests of truth. As underlying medical sciences developed, as clinical research extended its area, sects, and schools of medicine must lose their significance and surrender to science that knew no fundamental antithesis or conflicts. There would always be a frontier on which investigators offered rival theories and where speculation throve, but research left a widening territory of ascertained indisputable truth. The members of the American Medical Association were to be felicitated also upon the socialized ideals of the medical profession. Less and less as medicine was regarded as a personal career, more and more was it exalted as a public service. This changed point of view was a part of the spirit of the times. Old individualism was gradually yielding to the new consciousness of the community, to new loyalty to the common life of the people.

The Association's conception of its social mission was admirably manifested by its interest in preventive medicine and public health. To the cynics who saw in the profession a conspiracy to keep people ill, and hence to profit by fees there seemed something sinister and incredible in the apparent desire to keep the public well. But the sincerity and social spirit of the medical profession would be vindicated as the campaign of popular education was pushed. Forgetting the older ethics which fostered an aloofness from public affairs, medical men now felt that they were more and more a part of the national life.

They who were struggling with a chaotic educational system and who needed the profession's aid, were grateful for what it was doing. In nothing has it shown a truer conception of duty than in its campaign for popular education concerning individual and public health. It realized the difference between aristocratic beaurocracy and democracy. In former times experts might in true paternal fashion command the submissive masses and expect an unquestioned obedience, but in a democracy experts must take their fellow citizens into their confidence and must tell them not only what to do but why. In the campaign for public education, the profession was not only rendering an essential service, but was also conforming to the true principle of democracy which must be built not upon unwilling submission, but upon the intelligent cooperation of the people. Finally the Association was to be congratulated upon the creation and perpetuation of the professional spirit. Man was himself only as he lived a life of cooperation and comradeship. The profession was a collective personality. Each individual made contribution to the whole but the materials and insiration for his own development were drawn from the common store. Only as men had the imagination to see their lives in wider relationships, and only as they lost their petty personal interests in larger and more generous common purposes could they attain the true possibility of personal growth. One might cherish the hope that the profession would gain steadily in loyalty to truth and in a disinterested devotion to common life, and to the high ideals of personal integrity, professional obligation, and scientific fidelity.

Hon. Wallace G. Nye, Mayor of Minneapolis, after drawing a picture of the physical attractions and financial

strength of the city, said they were not unmindful of the physical welfare and comfort and mental development of people, as the playgrounds, baths, parks, child-welfare work and the care of the sick, aged, and unfortunate, bore witness. This was a better index of the city's greatness than the extent of finances. In progressive work in the city the medical profession always took a leading part and he believed this was true throughout the country.

Hon. Adolph Olson Eberhart, Governor of Minnesota, in a jocular vein declared that it was a pleasure after the session of the legislature to look into so many honest faces. More seriously, he said that same legislature had enacted the best laws for the protection of public health that could be devised. The Medical Association of Minnesota has been active in assisting. Three hundred thousand preventable deaths annually, made them realize that help must come from the medical profession and Minnesota was ready to co-operate in the prevention of disease and in making life a little better for everyone not only in Minnesota, but throughout every country on the globe.

**Installation of the New President.**—Dr. Jacobi introduced Dr. John A. Witherspoon, the president-elect.

**President's Address.**—Dr. John A. Witherspoon of Nashville, Tenn., after referring to the multiplicity of work the Association was performing and dwelling at some length on the successful efforts of the profession during the past few years in putting the science of art and of the practice of medicine upon a higher plane, chose as his central theme the problem of establishing a national health department as a subject most suitable for the occasion. For a nation to be truly great must be strong physically and mentally. Standing as a successful republic it would not retain its proud position unless it prevented the useless loss of life. One might compute the financial loss represented by 500,000 preventable deaths annually, but as physicians were intimately associated with family life it was not financial aid that appealed chiefly to them, but unnecessary sorrow, anguish and suffering. The location of the country was such that it was exposed on all sides to the invasion of infectious diseases. Bubonic plague with its high mortality constantly threatened the country. South America and neighboring islands threatened the United States with infections peculiar to the former. All these emphasized the necessity for national protection. Uncinariasis, pellagra, and poliomyelitis threatened the country from within and there must be some organized body for combating them. Physicians had sounded notes of warning that these scourges could be prevented only by a great awakening to the dangers and by co-operation between the profession and the people. The nation should not always have a fear of an epidemic hovering over it. The progress in preventive medicine had kept well in advance and could present sanitary laws adequate for the protection of life. Such laws had made the Canal Zone, which formerly had been thought uninhabitable, a more healthful place than any of the American cities or rural districts. The Panama Canal was a monument not only to scientific engineering but also to sanitary science. Formerly the death rate in the Canal Zone among foreigners was 170 per thousand, now it was 8 per thousand. Should not the people at home have the same protection as those in Panama? It had ever been the aim of the profession to add to the health and happiness of the race, yet there were those who would stay this progress. The profession would welcome any force, any "ism," cult, or sect, that could truly help in the betterment of man's life. The forces opposed to them were destructive and not constructive. The medical profession would accept help from any source and would be glad to proclaim the source. They had been accused of being a medical trust, but they were prosecuting a work that was limiting the income of every one of them. The organization was based on the strongest possible democratic principles. The individual membership was fresh from the county societies and this membership was represented on the governing board. There was no way of making greater democracy. Eleven years ago medical education was in a chaotic state. It was now giving the public men properly trained who could prevent disease. The people must be educated to appreciate the loyalty of the profession to the interests of the public. They were made to feel a sense of gratitude for having through better medical education produced physicians with high ideals capable of teaching people how to stay well and to maintain sanitary conditions in cities and towns. The people were awakening to the demands of the hour and audiences were being addressed all over the country on health matters. They were showing enthusiasm in helping on the work for cleaner homes and cleaner cities. The Association stood for a National Department of Health. To secure success it needed cooperation from the doctor in the rural district to the professor in the university. When they appreciated this fact they would have laws for the protection of health and for sanitation. The doctor should go back and assert his right to be his brother's keeper.

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SECTION ON PRACTICE OF MEDICINE.

*Tuesday, June 17—First Day.*

Dr. W. Jarvis Barlow of Los Angeles in the Chair.

**Chronic Arthritis.**—Dr. Leonard W. Ely of Denver said that the treatment of arthritis had usually devolved on the orthopedist, but he believed that it would eventually fall to the internist. The pathology of most cases of arthritis of chronic type essentially was the same whether it was tuberculous, syphilitic, gonorrheal, hemorrhagic, or traumatic. The commonest type was characterized by proliferative inflammation of bone or cartilage or of both, and this was the result of a change in the synovia and marrow. The changes in the synovia were observed more easily than those in the marrow. The symptomatology was the same whatever the etiology. In some cases the process did not enter the joint and the cultures from the joint were negative. The skiagraph was the same in all the varieties. The differentiation was often possible through the history or the general examination. A great group of nontraumatic arthritides were due to microorganisms. The only way to make a positive diagnosis was to detect the causative organism. The main indication in the treatment was to find the focus of infection and to treat that. Even if definite syphilis could not be demonstrated a course of antisyphilitic treatment was often of advantage. Immobilization was useless where syphilis existed. The prognosis in multiarticular forms presented unsolved problems, but the outlook was not hopeless. Every case furnished a field for patient study. Frequently infection was found in other parts of the body, as the tonsil or nasal cavities. The tonsils should be removed as a routine measure, even when nothing pointed to their infection. Those cases in which the cause was unknown seemed also to be the result of an infection.

Dr. R. C. Cabot of Boston asked if Dr. Ely had seen any cases of multiarticular arthritis cured by the removal of the focus of infection. He had yet to see one case cured in this way.

Dr. Yeager of Hayward, Wis., said rheumatic affections were not yet shown to enter the body by way of the tonsils nor has it been proven that the tonsil is a filter or that removing the tonsil removed the filter.

Dr. Joseph H. Miller of Chicago believed that Ely was correct in taking the stand that infection frequently caused arthritis. Often if the tonsil was removed an abscess was found at the base. If this infectious material was injected into the rabbit it produced arthritis. He believed these were cases helped by treating the focus of the infection.

**Remote Effects of Lesions of the Prostate and Deep Urethra.**—Dr. Thomas McCrae of Philadelphia said that the work of recent years showed the frequency of these lesions in the genitourinary tract. Their local importance was well recognized, but it was necessary to appreciate the results in view of the symptoms which might follow from influences on other organs. The urethral lesions were not infrequently responsible for a general nervous disturbance which might have secondary results. Such diseased sexual organs caused general disturbance out of proportion to the local lesion. Often there was no history to show prostatic disease. This by no means meant that in all males with nervous disturbance this condition was due to disease in this locality, but it was well to look in this direction. Pain might be referred to the kidney, the back, the abdomen, the hip, or the outer side of the thigh, when there was not the slightest sign of disease in the deep urethra or prostate. Arthritis secondary to infections in this locality was possible, especially arthritis of the spine. If one found the local infection and cured it arthritis would be cured. The physical condition of the patients had interested him. He found that after the operation the cardiac condition improved in many cases. It was a point worth raising whether the prostatic condition did not affect the myocardium. There was often a picture of angina pectoris from these local lesions which sometimes caused anxiety. The condition might act adversely on the kidney. What was needed was to get the prostate away. He discussed this subject because the prostate as a cause of nervous disease might easily be overlooked.

Dr. Hugh H. Young of Baltimore said that in the past medical men had been so interested in auscultation, etc., that the thought of a rectal examination was beneath their dignity and they delegated the duty to an incompetent assistant. The prostate, along with the tonsil and intestinal tract, deserved attention. Abroad 90 per cent. of males had prostatic trouble, but there were not so many in this country. Head of London had shown how easily an impulse was sent to the spinal cord, which referred it to other localities; in fact, to almost any portion of the anatomy below the diaphragm. The question of referred pain in pelvic diseases of women was understood, but it was neglected in the male, although it occurred more frequently in the latter.

Dr. W. Bridges of Omaha said that one disturbance often overlooked was an abdominal tumor dependent upon the prostate which obstructed the urinary outflow, causing the accumulation in the bladder and a pressure on the pelvis of the kidneys.

Dr. James M. Anders of Philadelphia said that even if there was no history of gonorrheal infection it would not do to hold the view that there was no infection. The *Bacillus coli* or other agents might cause some trouble.

Dr. Walter Biering of Des Moines, Ia., related a case of abscess of the right leg, general septicemia, and death. Autopsy revealed a deep-seated abscess of the prostate and fibrosis of the myocardium. The history showed that the patient had had gonorrhea five years previous.

**Studies on Uric Acid in the Blood and Urine with Special Reference to the Influence of Atophan.**—Dr. James S. McLester of Birmingham, Ala., said that the determinations of uric acid in the blood and urine in health disease were made by the new calorimetric method of Folin. Wide variations were seen in presumably normal individuals, but the content in a given individual was constant. Still greater variations occurred in disease, gout, nephritis, disease of the central nervous system, and especially syphilis showed the highest values. Atophan produced variable polyuria and a marked increase in urinary uric acid which increase was directly proportional to the uric acid loss in the blood.

Dr. William S. Thayer of Baltimore said that apart from the therapeutic side the method of Folin was of value from the diagnostic viewpoint, especially in gout. There was more gout in this country than was thought. Many cases were regarded as polyarthritis but later they proved to be gout. This method should be of diagnostic value.

Dr. H. A. Freud of Detroit said that the subject of uric acid diseases deserved more attention. They were recognized in Europe but not in this country. The examination of the urinary uric acid output by means of calorimetric methods was open to criticism on the grounds of inaccuracy. He believed that atophan acted directly on the kidneys. The way to determine the presence of gout was to put the patient on a purin-free diet for a few days and then determine the amount of uric acid. Then one should place the patient on thymus to determine the output. One should then give atophan to see if the amount was increased.

**Entamebic Infections in the Northwest.**—Dr. Griffin of Rochester, Minn., stated that in the examination of 1700 patients for parasites entamebæ were found in 227. Of this number *Entameba tetragena* and *Entameba histolytica* were found in 79 cases, and *Entameba coli* in 148. Patients probably infected while residing in the Middle Northwest numbered 147. *Entameba tetragena* and *Entameba histolytica* were found in 41 cases from the middle Northwest; *Entameba coli* was found in 106 cases in the Northwest. The patients complained chiefly of diarrhea. Thirteen had severe attacks with bloody stools, not as severe as in the South. Three-fourths of the patients complained of pain; four of rectal pain; several of indefinite gastric pain. The eosinophilic count was low. In suspicious cases search for parasites should not be abandoned too soon. Some of the cases gave histories of the disease extending over five, ten, or even twenty years. Coal oil enemata had been used in four cases with excellent results. They should be given a trial.

Dr. Yeager, Hayward, Wis., said that if the patient were given a dose of magnesium salts, the stools would show amebæ. In any bowel affection the eosinophilic count was of little value. He advised sixty to one hundred grains of ipecac daily for several days administered in five grain pills, coated with salol, which did not dissolve until they reached the intestine. This he thought was good treatment. Emetine hypodermically was effective.

Dr. Dixon of Nashville said that emetine was the most satisfactory treatment with which he was familiar.

Dr. George N. Head of Minneapolis said that when the physician found a case of chronic diarrhea in the North he should examine for amebæ, as he would if he were in the South.

Dr. Griffin said that they injected a quart of coal oil into the large bowel twice a week. It caused no irritation except in the rectum; this was relieved by vaseline. By coal oil he meant kerosene.

**The Value of the Tuberculin Reaction in Early Cases of Tuberculosis.**—Dr. V. C. Vaughan, Jr., of Detroit, Mich., said that tuberculin reaction was the phenomenon of sensitization at some stage in most early cases of tuberculosis. The recent conclusions were practically confirmatory of those announced in 1909. The extreme sensitiveness of a von Pirquet reaction rendered it doubtful in the diagnosis of active tuberculosis in adults. The subcutaneous method was useful only in hospital or sanatorium treatment. The dangers of the calmette reaction were overestimated in the experience of the author if properly applied. A failure of reaction indicated either an absence of tuberculosis disease or an inability of the patient to react to tuberculin. From clinical experience the secondary reactions following second instillations of tuberculin into the eye were of definite value in the ultimate diagnosis in suspected cases. When the first reaction was positive it was confirmatory of tuberculosis; when negative it was of no value in the diagnosis of tuberculosis. A positive secondary reaction following a negative primary reaction was against active tuberculosis. A secondary negative reaction following a primary negative reaction was of no value in the diagnosis of pulmonary tuberculosis.

Dr. Richard C. Cabot of Boston said the safety of the ophthalmological test was questioned. The experience of many showed it was dangerous and he advised against its use. The greatest value of the tuberculin test was in children. Nearly all adults reacted to the von Pirquet test. The subcutaneous tests were valuable when there was a local reaction in bone and joint tuberculosis. The *x*-ray was an important method in diagnosis, but he deprecated the phrase calcified tubercle, as the *x*-ray showed not pathological processes but only density. This must be interpreted.

Dr. Charles L. Minor of Asheville feared the calmette test and used the subcutaneous method. He thought it safe outside of the sanatorium.

Dr. F. M. Pottenger of Monrovia, Cal., said a diagnosis of tuberculosis in the adult was never made on the basis of the tuberculin reaction, but was of some value if properly interpreted. If the reaction came on promptly it showed the presence of ferments and that the patient was fighting infection. In the chronic fibroid type of disease the reaction appeared as late as the tenth day, but in the active cases it appeared within twenty-four hours. There was no one symptom, or tuberclin test, *x*-ray, or physical examination sign that decided the diagnosis. A good diagnostician was to be trusted better than a poor radiographer.

**Artificial Pneumothorax for the Relief of Advanced Pulmonary Tuberculosis.**—Dr. Charles L. Minor of Asheville, N. C., considered the method of puncture versus cutting. The Armor method was less alarming to patient and generally more desirable. The indications for this procedure were unilateral, severe advanced trouble of short duration; bilateral involvement, severe on one side, slight on the other, and not over one-third of lung destroyed by disease; persistent bleeding; unilateral small, but very active, advancing foci were contraindications. Pneumonic phthisis, active foci in good lung, intestinal trouble, bad adhesions, an anxious patient, emphysema, bad general condition were not contraindications. He had used this procedure in 22 cases; three failed; four did badly; two, not so badly; two did well, then badly; two were negative; two were good and two others were good so far. These were all advanced hopeless cases and three were saved, or a percentage of 13.

Dr. S. Adolphus Knopf of New York said that a year ago he was skeptical as to this procedure but now used it in selected cases and had had 25 per cent. of improvements with it. It was indicated in cases of uncontrollable hemorrhage. Five hundred c.c. of nitrogen stopped hemorrhage. Not many cases were suitable for operation, and those not under constant observation were to be avoided. A slight invasion of the other side was not a contraindication, but cases where there was much invasion should be left alone. It was a serious operation to be used with the utmost precaution. One should be prepared for accidents as air embolism. One should use oxygen first, and be sure to reach the pleural cavity.

Dr. Mary E. Lapham of Highlands, N. C., used oxygen in preference to nitrogen because it was absorbed faster

and helped the patient more. It had a tonic effect, and gave greatest relief. They followed cases with *x*-ray examinations but also by watching the line of resonance. She emphasized the necessity for examination before and after puncture.

**Rest and Repair in Pulmonary Tuberculosis.**—Dr. John W. Flinn of Prescott, Ariz., said that in both the plant and animal kingdoms rest was essential to growth. In infancy development was in its highest state of activity, and the healthy infant passed the greatest portion of its life in a state of rest and sleep. Repair was but the repetition of growth and for it rest was just as necessary as in injury to limbs when rest was obtained by splints, bandages, etc. In the case of the heart and lungs rest could be gotten only by resting the whole body in the recumbent position. Rest in bed was the most powerful curative agent in the treatment of active tuberculosis. One or two months in bed were necessary in the beginning of treatment of all cases. If the disease was very active the patient should be fed by a nurse and treated as in typhoid fever. Bed treatment should be continued until the temperature and pulse had both been normal for some little time and the weight was nearly normal. The rest treatment of tuberculosis had been attended with brilliant results.

**Studies in Blood Pressures in Tuberculosis at High Altitudes.**—Drs. Leroy S. Peters and E. S. Bullock of Silver City, N. M., said that heretofore the knowledge of climate in tuberculosis had been based solely on experience. However, in the past few years much work had been done to place the question of climate in the treatment of this disase on a scientific basis. They had shown conclusively by a study of six hundred cases of consumptives treated at the elevation of 6,000 feet at Silver City, N. M., that the blood pressure of consumptives was materially raised so that it approached the blood pressure of normal individuals at the sea level. They contended that any factor which served to restore the body conditions to a normal tended to better the condition of the disease. These findings might explain to some extent the reason why results in the treatment of tuberculosis at high altitudes were better than those at sea level.

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SECTION ON DISEASES OF CHILDREN.

*Tuesday, June 17—First Day.*

Dr. Henry Dwight Chapin of New York in the Chair.

**Chairman's Address: Radiographic Studies of the Intestines in Infants.**—Dr. Henry Dwight Chapin of New York called attention to the benefits to be derived from a study of anatomical conditions by use of the radiograph because of the differences which recent use of the apparatus had brought to light between living and dead subjects. He described fully the technique with which he had been most successful, the length of time it took for the bismuth to go through the digestive organs, and from his experience deduced that there was much difference in mobility of the colon and that the sigmoid was shown to occupy a great deal more space than had commonly been supposed.

**The Use of the Röntgen Ray in the Diagnosis of Obscure Abdominal Conditions in Infancy and Childhood.**—John Lovett Morse of Boston read this paper and by the use of the stereopticon pointed out the use of the *x*-ray in differential diagnosis. In many cases it would be possible to differentiate between pyloric stenosis, pyloric spasm, chronic gastric indigestion, and splanchnoptosis in a few hours with the Röntgen ray and determine which were surgical and which amenable to medicinal treatment. It also showed marked usefulness in determining cases of intussusception and infectious diarrhea which under ordinary methods were frequently confused, in revealing the causative factor of recurrent vomiting which was often puzzling, and also in determining the presence of abdominal tumor.

**The Use of the Röntgen Ray in Pyloric Obstruction.**—Dr. L. R. DeBuys of New Orleans, after a brief reference to the use of the *x*-ray in the study of the adult stomach, said that the findings were of little aid in the infant. The use of the Röntgen ray had shown the false ideas previously held as to the size, shape, and position of the infant's stomach and had corroborated the theory that high fats retarded the movements of the stomach. It had also shown clearly the phenomena that had made differential diagnosis difficult. To be of the most value the observations should be made under as nearly normal conditions of feeding, etc., as possible. He had been surprised to find that by the time the last food went into the stomach the first had already left it in the process of digestion. He showed with motion pictures peristaltic waves.

Dr. A. Jacobi of New York said that from the plates shown he concluded that some of the cases were what used to be termed congenital constipation, a condition in which the sigmoid was so long that it formed two or three saccculations with a resulting chronic constipation. When a baby had been constipated from birth, and fed only breast milk, it was reasonable to suppose that the sigmoid was so long that it bent upon itself with resulting constipation and sometimes actual obstruction.

Dr. G. R. Pisek of New York said that any serial, instantaneous pictures that could be taken without danger to the infant were of the utmost value in diagnosis. Even in the diagnosis of stenosis alone, to get the patient into the hands of the surgeon quickly or to save some cases from unnecessary operation, would repay a great deal of study. He thought it possible that the Röntgen ray would determine in early life many conditions to be the precursors of anatomical diseases of adults.

Dr. Cole of New York wished to know if Dr. Chapin considered the contractions which showed in the pictures of two of his cases after the giving of enemas something that would occur with ordinary feedings or that was due to a spasm from the unusual filling of colon.

Dr. Crane of Kalamazoo, Michigan, thought that taking plates would fail to impress general practitioners because the fluorescent screen presented a true moving picture of the stomach and intestines and was a truly clinical method of examination, because the bismuth could be seen as it entered the stomach and the contractions of the stomach and the quantities in which the bismuth was mixed could be watched. He thought it necessary to take twenty or thirty plates to make any careful study with the Röntgen ray while with the screen this number would not be necessary, also a waste amount of work need not necessarily be done to enable a physician to interpret the pictures thrown upon the screen.

Dr. H. F. Helmholtz of Chicago wished to know if it was possible to make a diagnosis of abnormality from pictures alone.

Dr. H. Lowenberg of Philadelphia thought the same diagnostic results could be obtained by the use of charcoal. He thought that if the child passed any feces at all and retained its weight or gained a little it should be withheld from operation and studied.

Dr. Morse, in closing, answered Dr. Helmholtz's question in the negative and said that it was necessary to have the symptoms in addition to the picture to make a diagnosis.

Dr. DeBuys, in closing, said that many substances would give equally good shadows, but he used bismuth because it had no ill effects and was perfectly safe. He thought that it was common to procrastinate so long in these cases that they became poor surgical risks and urged the use of any measure that would reduce the present high mortality of 50 per cent.

Dr. Chapin, in closing, said that as Dr. Cole suggested the contractions might have been due to spasm, but he thought that more probably these were to be attributed to the peristaltic action of the colon.

(*To be continued.*)

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# State Medical Licensing Boards.

## STATE BOARD EXAMINATION QUESTIONS.

Medical Examining Board of Virginia.

*June, 1912.*

(*Continued from page 1058.*)

MATERIA MEDICA.

1. State difference between a tonic and a stimulant, giving an example of each.
2. What are the preparations and doses of arsenic?
3. What is alcohol and what its medicinal uses?
4. Give doses of following: Creosote, sulphate of spartein, phenacetine, caffeine citrate, atropine, potassium iodide.
5. Give the classification of gentian, chloroform, magnesium sulphate, strophanthus, santonine, viburnum prunifolium.
6. What are the principal medicinal uses of digitalis?
7. What are (1) antiseptics, (2) germicides, (3) deodorants? Giving an example of each.

TOXICOLOGY.

1. Give symptoms, minimum fatal dose, and treatment of poisoning by arsenic.

2. When lucifer match heads are taken into stomach what is best treatment and what should be especially avoided?

3. Give chemical and physiological antidotes for opium, strychnine, and carbolic acid.

THERAPEUTICS.

1. Classify emetics and give two examples in each class.

2. Give therapeutic uses of digitalis and the objections to its long continued use.

3. Give uses of iodine and name preparations most prescribed internally.

4. Name the urinary acidifiers and state whether the bicarbonates should be given before or after meals for such effect.

5. Give the leading action of each of the three principal mineral acids

PATHOLOGY AND BACTERIOLOGY.

1. What is meant by the term "compensation" as used in heart diseases? Trace the course of events due to broken compensation.

2. Give the etiology and pathology of erysipelas. Through what channels does it spread?

3. Discuss syncope, shock, and collapse, and state what features are common to all three conditions.

4. Distinguish between hemoptysis and hematemesis. Name the diseases of the organs that may produce the latter.

5. Describe the phenomenon known as Cheyne-Stokes respiration. State some of the conditions in which these respirations appear, and give the prognosis of same.

6. Give the pathology of nephrolithiasis.

7. The power to induce (by biological reaction) the formation of what distinguishes toxins from other poisons—such as alkaloids?

Of what disease is the *Spirocheta pallida* the exciting agent?

8. How do bacteria multiply? Mention three pathogenic bacteria that may be conveyed from the soil. Describe the *Bacillus tetani*.

9. How does an antitoxin differ from a vaccine?

10. How would you prepare and stain a specimen of sputum to examine for the baccilli of tuberculosis?

PRACTICE OF MEDICINE.

1. Differentiate from one another—apoplexy, epilepsy, alcoholic intoxication, and uremia.

2. Give the etiology and clinical symptoms of catarrhal (broncho or lobular) pneumonia.

3. Differentiate cardiac hypertrophy from cardiac dilatation.

4. Define: urticaria; herpes zoster; astigmatism; amnesia; aphasia.

5. Give the clinical symptoms and treatment of acute nephritis.

6. Describe a typical case of measles from the time of infection to its close.

7. Give the clinical symptoms of eczema and its treatment, including diet.

8. Give the principal measures for protection against malarial, typhoid, and yellow fever.

9. Give the treatment for follicular tonsillitis.

10. What factors determine normal blood-pressure and what is the normal pressure for an adult?

## ANSWERS.

MATERIA MEDICA.

1. The terms stimulant and tonic are both used laxly. In Foster's *Dictionary of Practical Therapeutics* stimulants are defined as "agents whose influence is to augment the vital activity or function of an organ or to increase the vital energy of the entire system." *Tonics* are said to be "measures which are employed for the purpose of restoring permanent energy or tone to weakened, impaired, or diseased organs or systems of organs or the organism at large." Alcohol is an example of a stimulant; strychnine, of a tonic.

2. Arsenic trioxide, gr. 1/20; solution of arsenous acid, ♏viij; solution of potassium arsenite, ♏viij; sodium arsenate, gr. 1/10; exsiccated sodium arsenate, gr. 1/20; solution of sodium arsenate, ♏iij; arsenic iodide, gr. 1/10; solution of arsenic and mercuric iodide, ♏jss.

3. Alcohol is a liquid containing about 93 per cent. of ethyl alcohol and about 7 per cent. of water. It is used medicinally as an antiseptic, astringent, and refrigerant; for bruises and sprains; in headaches, in fevers; to check sweating; in diphtheria, pneumonia, snake-bite; as a stimulant, a food, and as a diuretic.

4. Dose of creosote, ♏iij; sulphate of sparteine, gr. 1/5; phenacetine, gr. vijss; citrated caffeine, gr. ij; atropine, gr. 1/160; potassium iodide, gr. vijss.

5. Gentian is a stomachic; chloroform, an anesthetic; magnesium sulphate a cathartic; strophanthus, a circulatory stimulant; santonin, an anthelmintic; viburnum prunifolium, an antispasmodic.

6. *Therapy of digitalis:* Digitalis is indicated in diseases of the heart, (1) when the heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is also a diuretic; and it is also used in some forms of nephritis, exopthalmic goitre, pneumonia, chronic bronchitis, etc.

7. An *antiseptic* is a substance which prevents or restrains putrefaction; example, cold. A *germicide* is a substance or agent which destroys bacteria and their germs; example, mercuric chloride. A *deodorant* is a substance or agent which destroys foul odors; example, sulphur dioxide.

TOXICOLOGY.

1. *Symptoms of arsenic poisoning:* Nausea, faintness pain in stomach, vomiting, purging, and pain in extremities; the vomitus is blood-streaked. *Minimum fatal dose* is probably between two and four grains. *Treatment* consists in the administration of freshly prepared solution of ferric hydroxide.

2. Give an emetic (copper sulphate or apomorphine), or wash out the stomach with a 0.2 per cent. solution of potassium permanganate, and then with warm water. Old French oil of turpentine is said to be the physiological antidote. Fats and oils are not to be administered. (Note that Old French oil of turpentine is not an oil chemically.)

3. *Opium.* Potassium permanganate is a chemical antidote; caffeine, strong coffee, strychnine, nitroglycerin, and cocaine are said to be physiological antidotes.

*Strychnine.* Tannin is the chemical antidote; chloral and chloroform are physiological antidotes.

*Carbolic acid.* Alcohol and sodium sulphate are said to be antidotes.

THERAPEUTICS.

1. *Emetics* are: (1) *local* (which act directly on the nerve filament in the stomach or pharynx), such as alum and copper sulphate; and (2) *general* or *systemic* (which act through the circulation), such as apomorphine and ipecac.

2. See above, MATERIA MEDICA, 6. The objection to the long continued use of digitalis is its cumulative action; the heart may be so strained by overstimulation that some slight but sudden exertion may cause cardiac failure.

3. *Iodine* is an irritant, vesicant; it is used as a counter irritant in glandular tumors, cysts, hydrocele, skin diseases, fissures. It is an antiseptic and disinfectant. Iodine is but little used internally. The preparations are: Tincture of iodine, ♏iss; compound solution of iodine, ♏iij, well diluted; and ointment of iodine.

4. The *urinary acidifiers* are: Acid sodium phosphate, benzoic acid, salicylic acid, vegetable acids, salol, and potassium bitartrate. The bicarbonates are not urinary acidifiers.

5. Hydrochloric, sulphuric, and nitric acids are all escharotic. Further, *hydrochloric* acid is a bleaching, deodorizing, and disinfecting agent. *Nitric* acid is a good local escharotic because its action is limited to the spot where it is applied. *Sulphuric* acid, on the other hand, has an escharotic action which spreads; this is owing to the strong tendency of this acid to unite with water.

PATHOLOGY AND BACTERIOLOGY.

1. *Compensation.* "The alterations in the systemic blood supply caused by the valvular defects of chronic endocardial inflammation are such that, if continued, the integrity of the body is threatened. To overcome the impaired functions of the valves and to maintain the general circulation, the heart increases in size and strength (*compensatory hypertrophy*). The period in which this occurs is called the *period of compensation;* its duration is indefinite. It may be recognized by the physical signs of valvular disease without any symptoms of disturbed circulation. Anything which disturbs the equilibrium as it now exists, such as acute diseases and excessive work, leads to ruptured compensation, a condition attended by cyanosis, dyspnea, edema, gastric, hepatic, and renal dis-

turbances, and often death." (Hughes' *Practice of Medicine.*)

2. *Erysipelas* is caused by the streptococcus erysipelatis, which enters through a wound or abrasion. The skin and subcutaneous connective tissue are inflamed, and the lymphatic vessels are also involved; there is little or no pus formation, but leucocytosis is present, and the streptococci are found in and around the lymphatic channels. Round cell infiltration is common. The disease spreads by the lymphatics, and possibly also by direct continuity.

3. *Syncope* is a state of suspended animation due to sudden failure of the action of the heart. *Shock* is a condition of general depression of vital activity due to a violent stimulation of the peripheral nerves or nerve endings of the sensory or sympathetic system; it may also be produced by a sudden or severe emotion. "*Collapse* is a condition of extreme depression of the nervous system, especially of the cardiac and respiratory centers. It is usually due to powerful afferent stimuli, but may be produced by slighter impulses, if preceded by conditions tending to exhaustion. Its chief manifestations are those of mental and physical prostration. The terms *collapse* and *shock* are often used indiscriminately in reference to conditions of sudden prostration due to injury of any kind. They are not, however, synonymous terms. *Shock* is essentially a reflex vasomotor paralysis with cardiac inhibition, the effect being produced through the vagi, depressor, and other nerves. The venous system thus becomes intensely congested, the condition being virtually equivalent to the occurrence of an internal hemorrhage. The output of blood from the heart is diminished, and the resulting diminution of arterial pressure causes acute arterial anemia, in which the brain, muscles, skin, etc., partake. Combined with this anemia is inhibition (*i.e.* slowing) of the heart's action, and lessened frequency of the pulse. But the flow of blood from the veins into the heart being deficient the pulse, instead of being infrequent and full, becomes infrequent and weak. Thus the heart has less work to perform as measured by output, and its pause or recuperative period is longer; hence it does not become exhausted. In *collapse*, failure of the heart and respiration of central origin is the essential feature, as shown by the frequent weak pulse and shallow breathing. Shock may precede, merge into, and terminate in collapse, or the latter may result directly from the cause of the shock if it is prolonged; but the shock is neither a necessary antecedent nor an invariable accompaniment of collapse." (From Quaim's *Dictionary of Medicine.*)

Pallor and a weak or imperceptible pulse are found in all three conditions.

4.

| HEMATEMESIS. | HEMOPTYSIS. |
|---|---|
| 1. Previous history of gastric, hepatic, or splenic disease. | 1. Previous history of pulmonary troubles. |
| 2. Blood is vomited. | 2. Blood is coughed up. |
| 3. Blood is dark colored and not frothy. | 3. Blood is frothy and bright red. |
| 4. Blood may be mixed with food. | 4. Blood may be mixed with sputa. |
| 5. Giddiness or faintness usually precede vomiting. | 5. Sensation of tickling in the throat usually precedes. |
| 6. Nausea and weight in epigastrium. | 6. Dyspnea and pains in the chest. |
| 7. Often followed by melena (black tarry stools). | 7. Is not usually succeeded by melena. |

"*Hematemesis may be due* to ulcer, cancer, cirrhosis, or congestion of the liver, scurvy, purpura, hemophilia, malaria, congestion of the spleen, chronic heart disease, vicarious menstruation, traumatism, yellow fever, toxic gastritis, or rupture of an aneurysm into the stomach." (Hughes' *Practice of Medicine.*)

5. In *Cheyne-Stokes respiration* the respirations gradually become deeper and more rapid, then they become shallower and slower, and after a pause of several seconds this cycle is repeated. It is found in apoplexy, uremia, chronic nephritis, tuberculous meningitis, fatty degeneration of the heart. The prognosis is grave.

6. *Nephrolithiasis.* "In the absence of septic infection, the changes in the kidney are the result of mechanical irritation, with or without retention of urine according to the situation of the stone. The irritation induces an increase in the interstitial connective tissue, whereby the organ becomes tougher and harder, and the fatty and fibrous capsules become thickened and fused with one another, and firmly adherent to the parenchyma. The mucous membrane of the pelvis is injected and swollen, and the stone tends to become buried in it. If the stone hinders the outflow from the pelvis, hydronephrotic changes result. In some cases there is a remarkable overgrowth of fat, which originates at the hilum, surrounds the calyces, and finally replaces the parenchyma, the kidney being ultimately transformed into a solid lipoma enclosing a cavity—the pelvis—in which the stone is lodged. When infective processes are superadded, pyelonephritis and pyonephrosis ensue. The perinephric cellular tissue also may become the seat of suppuration and of abscess. The addition of sepsis may result in the deposition of phosphates upon the existing stone, which may thereby be greatly increased in size. The opposite kidney may remain healthy, and may even undergo hypertrophy to compensate for the loss of function in the diseased organ, but it also is liable to become the seat of stone formation and of infection and suppuration." (Thomson and Miles' *Surgery.*)

7. *Toxins* are capable of producing antibodies or antitoxins; other poisons, such as alkaloids, cannot do this.

8. The *Spirochæta pallida* is the exciting agent of syphilis. Bacteria multiply by cell-division. A bacterium about to divide seems to be larger than normal, and if it is a coccus it becomes more ovoid; changes occur first in the nucleus, and the bacterium just falls in two. Cocci may divide in one, two, or three directions of space; bacilli divide transversely to their long axis, and spirilla divide transversely to their long diameter. *Three pathogenic bacteria that may be conveyed from the soil:* Bacillus tetani, bacillus edematis, and bacillus aërogenes capsulatus.

*The bacillus of tetanus* is characterized by its peculiar spore, formed at one end of the bacillus and giving it the appearance of a pin; it is purely anaërobic, and cannot be developed at all in the presence of oxygen. It generally comes from the soil and is found in penetrating wounds. It appears in two forms, the spore-bearing form, as described above, and the vegetative form, which is a short bacillus with rounded ends, and which may occur singly or in pairs, or may form long filaments. It grows in gelatin stab cultures in the middle of the medium and the colonies look something like a fir tree; its growth is slow, and a disagreeable odor is at the same time emitted. In bouillon, it grows near the bottom of the tube, and produces gases.

9. *Differences between an antitoxin and a bacterial vaccine:* "The antitoxic sera act directly upon the poison secreted by the living bacterial cell and neutralize its toxic property, while the bacteriolytic sera affect the bacteria themselves and destroy them or paralyze their action. Since the antibacterial sera are without effect upon the formed toxin, they are mainly useful in practice as a means of protecting against the bacterial invasion, while the antitoxic sera (*e.g.* diphtheria) may be employed to combat an infection already in progress. Broadly speaking, the latter are curative, the former protective." (Jordan's *Bacteriology.*)

10. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbol-fuchsin and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

PRACTICE OF MEDICINE.

1. In *alcoholic coma* the coma is not usually absolute; there may be an odor of alcohol on the breath, the patient can generally be aroused by shouting in his ear; there is no paralysis; the pupils are normal or dilated; respiration is practically normal; the pulse is first rapid and later feeble, and the skin cool.

In *uremic coma* the coma is deep; there may be a urinous odor to the breath; the urine is scanty and contains albumin; there is slow pulse, with high arterial tension; the pupils are usually small and equal; respiration is deep and may be quickened; the body temperature may be above normal, or subnormal.

In *cerebral apoplexy* there is generally paralysis of the head and upper limbs, and in left-sided lesions there may be aphasia; the pulse is slow and full; the respirations are

at first slow, regular, and stertorous, later on becoming of the Cheyne-Stokes type.

In *coma of epilepsy:* History of attack, with previous convulsion; the coma is of brief duration, and the unconsciousness gradually becomes less; there may be a bitten tongue or other scars.

2. *Catarrhal pneumonia* is generally secondary to some other disease such as diphtheria, whooping cough, or measles; but it may be primary. It is most frequent in childhood and old age; in the latter condition it is often secondary to some exhausting disease. It generally begins as a bronchial catarrh, the temperature becomes high, dyspnea and cough are present, the sputum may be bloody but it is never rusty, and is quite different from that of lobar pneumonia. Vocal resonance and fremitus may be increased, and subcrepitant râles may be present.

3. CARDIAC HYPERTROPHY: "Inspection reveals fullness or prominence of the precordium with a distinct impulse. *Palpation* detects the impulse one or two intercostal spaces lower down and to the left. It is stronger and more or less diffused—the heaving impulse. *Percussion* determines an increase in the area of cardiac dullness vertically and transversely on the left side of the sternum, unless the right ventricle is also hypertrophied, when the cardiac dullness is increased to the right of the sternum. *Auscultation* in simple hypertrophy without any valvular changes detects a loud first sound of a somewhat metallic quality, the second sound being strongly accentuated. In the presence of valvular disease the characteristic murmurs are heard in addition." (Hughes' *Practice of Medicine.*)

CARDIAC DILATATION: "*Inspection* detects enlargement and distention of the superficial veins and an indistinct, often wavy and diffused, cardiac impulse. If tricuspid regurgitation is present jugular pulsation will be observed. *Palpation* confirms inspection; the impulse is feeble, irregular, and heaving. *Percussion* serves to determine extension of the area of cardiac dullness transversely and especially toward the right side. *Auscultation* in the presence of valvular lesions reveals characteristic murmurs. If there are no valvular lesions the cardiac sounds are weaker than normal and the first sound is sharper in quality than usual." (Hughes' *Practice of Medicine.*)

4. *Urticaria* is an inflammatory condition of the skin with development of wheals, and accompanied by itching and often associated with fever and gastric disturbances.

*Herpes zoster* is an inflammatory disease with formation of vesicles along the line of a cutaneous nerve, and accompanied by neuralgic pains.

*Astigmatism* is a condition of the eye in which rays of a light from a point do not converge on the retina.

*Amnesia* is loss of memory, especially of the ideas presented by words.

*Aphasia* is inability to express ideas in speech or writing.

5. ACUTE NEPHRITIS. *Symptoms:* The first evidence of the affection is the edematous condition of the face. This edema may extend and produce general anasarca. The urine is scanty, smoky in color, and of a high specific gravity. It usually contains albumin, blood-cells, blood casts, epithelial casts, hyaline casts, and free renal epithelium. Retention of urine, uremia, intense itching of the skin, dyspnea, delusional insanity, and palsies occur.

*The treatment* consists largely in rest in bed, warmth, milk diet, and attempts at elimination of waste products. Free purgation should be secured by means of the salines, calomel, or compound jalap powder. Diaphoresis may be favored by the administration of sweet spirits of niter, and in severe cases pilocarpin, and by the use of warm baths, warm applications, or the vapor bath. Tincture of digitalis (♏ 5-20 every 4 hours), tincture of strophanthus, or spartein (gr. ¼-½) may be given as diuretics. The occurrence of uremia will require prompt and energetic measures. (*Pocket Cyclopedia.*)

6. MEASLES. The incubation period is from nine to fourteen days and the disease is attended by a more or less extensive catarrhal inflammation of the various mucous surfaces of the body. The prodromes are coryza, lacrimation, photophobia, hard bronchial or croupy cough somnolence, irritability of temper, and sometimes convulsions. The temperature rises to 100° or 104° F., and increases until the rash is fully developed. On the second day, hard papules of a dark purplish color may be seen on the palate, and on the fourth day an eruption made up of crescentic patches of small papules upon a slightly reddened base appears on the neck, forehead, trunk, and extremities. The rash remains for from one to six days, after which the symptoms subside and a branny desquamation occurs. Extension of the catarrhal inflammation may result in complications such as bronchopneumonia, laryngitis, otitis media, enteritis, tuberculosis, etc. In healthy children and in uncomplicated cases recovery is the rule. The treatment consists in rest in bed in a darkened, well ventilated room, liquid diet, isolation, and the administration of water or acidulated drinks. In the early stages an enema or mild laxative is very beneficial. (*Pocket Cyclopedia.*)

7. *Eczema.* The skin is red, swollen, hot; a discharge is present, which leads to crust formation; itching or burning is always present. The disease is often intractable. The general health must be attended to; tea, coffee, alcohol, pastry, sugar, fried meat, starches, should be reduced to a minimum or prohibited. Cathartics and diuretics are indicated, as are proper hygienic surroundings and suitable exercise. Soap should not be used over the affected part, but water containing boric acid may be employed. The crust and scales must be removed with some oily preparation, and a dusting powder of bismuth subnitrate, boric acid, or zinc oxide used. Lassar's paste has also been recommended. Tar preparations or phenol may relieve the itching, but care must be taken to use only such strengths as will not increase the irritation.

8. *Malaria* is spread by the anopheles mosquito; *yellow fever,* by the stegomyia. These mosquitoes should be kept out of the dwellings, and away from the houses. Mosquito netting should be used, swamps and weeds removed, and a general destruction of mosquitoes instituted. For *typhoid,* see HYGIENE AND PREVENTIVE MEDICINE, 5.

9. *Follicular tonsillitis* requires cold compresses to the neck; and potassium chlorate and iron should be administered internally.

10. The *factors which influence normal blood-pressure* are: Age, posture, altitude, exercise, excitement and emotion, food, alcohol, tobacco, diseases, and quantity of the blood. The *normal pressure for an adult* is about 120 to 130 millimeters of mercury; a more liberal limit places it at from 100 to 145 for young, healthy adults.

(*To be concluded.*)

## BULLETIN OF APPROACHING EXAMINATIONS

| STATE | NAME AND ADDRESS OF SECRETARY | PLACE AND DATE OF NEXT EXAMINATION† |
|---|---|---|
| Alabama* | W. H. Sanders, Montgomery | Montgomery July 8 |
| Arizona* | J. W. Thomas, Phoenix | Phoenix |
| Arkansas | F. T. Murphy, Brinkley | Little Rock |
| California* | C. B. Pinkham, 929 Butler Building, San Francisco | San Francisco Aug. 5 |
| Colorado | David A. Strickler, Empire Building, Denver | Denver July 1 |
| Connecticut* | Chas. A Tuttle, New Haven | New Haven July 8 |
| Delaware | J. H. Wilson, Dover | Dover |
| Dist. of Col'ba | Geo. C. Ober, Washington | Washington July 8 |
| Florida* | I. D. Fernandez, Jacksonville | Jacksonville Nov. 12 |
| Georgia | C. T. Nolan, Marietta | Atlanta Oct. 14 |
| Idaho* | O. J. Allen, Bellevue | Boise Oct. 7 |
| Illinois | | Chicago |
| Indiana | W. T. Gott, Crawfordsville | Indianapolis July 8 |
| Iowa | G. H. Sumner, Des Moines | Des Moines June |
| Kansas | H. A. Dykes, Lebanon | Topeka |
| Kentucky | J. N. McCormack, Bowling Green | Louisville |
| Louisiana | A. B. Brown, Cusach's Bldg., New Orleans | New Orleans |
| Maine | F. W. Searle, Portland | Portland July 15 |
| Maryland | J. McP. Scott, Hagerstown | Baltimore |
| Massachusetts* | W. P. Bowers, State House, Boston | Boston July 8 |
| Michigan | B. D. Harison, 205 Whitney Building, Detroit | Lansing Oct. 14 |
| Minnesota | W. S. Fullerton, St. Paul | Minneapolis Oct. 7 |
| Mississippi | S. H. McLean, Jackson | Jackson Oct. 14 |
| Missouri | Frank B. Hiller, Jefferson City | St. Louis June 16 |
| Montana* | Wm. C. Riddell, Helena | Helena Oct. 7 |
| Nebraska | C. P. Fall, Beatrice | Lincoln Aug. 13 |
| Nevada | S. L. Lee, Carson City | Carson City Nov. 3 |
| N. Hampshire | Henry C. Morrison, State Library, Concord | Concord July 8 |
| New Jersey | H. G. Norton, Trenton | Trenton |
| New Mexico | W. E. Kaser, East Las Vegas | Santa Fe July 14 |
| New York | H. H. Horner, Univ. of State of New York, Albany | New York / Albany / Syracuse / Buffalo June 24 |
| N. Carolina | B. K. Hays, Oxford | |
| N. Dakota | G. M. Williamson, Grand Forks | Grand Forks July 1 |
| Ohio | Geo. H. Matson, Columbus | Columbus |
| Oklahoma* | J. W. Duke, Guthrie | Guthrie July 8 |
| Oregon | B. E. Miller, Portland | Portland July 1 |
| Pennsylvania | N. C. Schaeffer, Harrisburg | Philadelphia / Harrisburg / Pittsburgh June 23 |
| Rhode Island | G. T. Swarts, Providence | Providence July 1 |
| S. Carolina | H. E. Boozer, Columbia | Columbia |
| S. Dakota | L. G. Hill, Watertown | Pierre July 8 |
| Tennessee | | Memphis / Nashville / Knoxville |
| Texas | W. L. Crosthwaite, Waco | Austin June 24 |
| Utah | R. W. Fisher, Salt Lake City | Salt Lake City July 7 |
| Vermont | W. Scott Nay, Underhill | Burlington July 8 |
| Virginia | Herbert Old, Norfolk | Richmond June 24 |
| Washington* | F. P. Witter, Spokane | Tacoma July 1 |
| W. Virginia | H. A. Barbee, Point Pleasant | Huntington |
| Wisconsin | J. M. Beffel, Milwaukee | Madison July 8 |
| Wyoming | J. B. Tyrrell, Laramie | Cheyenne June 25 |

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

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## Original Articles.

### SCIATICA AND ITS TREATMENT.*

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To understand sciatica it is necessary to bear in mind the real meaning of the word. Sciatica is a term. A term which is loosely applied to those conditions in which the leading symptom is pain in the neighborhood of the sciatic nerve; that is to say, that the pain in the smaller sciatic nerve, in the lumbosacral plexus, in the spinal roots, from which the greater nerve springs, as well as pain along the course of the sciatic nerve itself, may be, and is, designated as sciatica. The key to the understanding of the condition is the understanding of the cause.

The causes of sciatica may be grouped under four headings: (1) Intrapelvic disease. (2) Constitutional states. (3) Damage to the nerve trunk. (4) Damage to the sacroiliac joint. Thus sciatica may be the result of specific exudates within the pelvis, of venous congestion, of pressure from a pregnant uterus, a new growth, or a loaded rectum; it may be the result of constitutional toxemias, such as syphilis, gout, rheumatism, diabetes, typhoid, sepsis, gonorrhea, chronic intestinal autointoxications, lead, arsenic, and alcohol; it may be the result of injuries, fractures, inflammations, or exposure along the course of the nerve trunk; and finally it may be the result of sprain, relaxation, or damage to the sacroiliac joint.

We owe much to Goldthwaite, of Boston, who two years ago, pointed out disease of the sacroiliac joint as furnishing the lesion in many hitherto incurable sciaticas. The lumbosacral cord, as well as the first sacral nerve, are in front of the joint, while the second and third sacral nerves are separated from it only by the pyriformis muscle. An injury, or an inflammatory condition of the joint will at once stretch these nerves, transmit the pain and cause the phenomenon known as sciatica. Do not fail then in every instance to palpate and examine this joint.

I have collated one or two practical rules which may help to distinguish a pathological joint condition:

(1) Stooping forward causes pain in the joint, together with reflex spasm of the adductors.

(2) Lasègue's sign gives pain in the joint as well as along the course of the nerve.

(3) Tenderness and limited movement of the joint.

There are some curious facts in regard to sciatica —facts which have often been lost sight of, but which, nevertheless, are instructive and interesting. I am going to mention some of these. One is that the disease occurs in men rather than women in the proportion of five to one. This may be due to the fact that the pelvis is wider, that more space is given the nerve at its exit, or to the fact that men are more liable to exposure; finally, that in women the nerve is more thickly covered.

The age at which the condition occurs is that of midlife. It is rare in old age, and, strange as it may seem, I have failed to find the report of a single case in childhood. Two or three instances are recorded of the occurrence at about the age of twelve.

Autopsies in cases of sciatica have been very rare. Although the disease is ancient and honorable, only twelve autopsies have been described. Some of these have revealed nothing, some only an enlarged, edematous, and congested nerve, some the presence of a jelly-like substance in the sheath, and some the signs of an interstitial neuritis. Microscopic negative.

Occupation is a factor in the production of sciatica. Sabareau has pointed out that it occurs most frequently in masons, gardeners, longshoremen, coachmen, and clerks. The conclusion to be drawn from this is that, so far as occupation is concerned, three factors enter into the cause. These are exposure, overexertion, and pressure from prolonged sitting on hard seats.

Climate also plays a part. Romberg observed that there were fewer cases in Berlin than in Paris. There is no doubt of the fact that the condition is more common in low altitudes and along water courses than in the hills and mountains. It is also more common at certain seasons of the year. The months of late winter, January, February, and March, a time when melting snow and dampness prevail, is the season most productive of sciatica.

An important factor is the constitution of the patient. Not only are the gouty susceptible, but also those who suffer from endarteritis, rheumatism, migraine, lithiasis, and all those diseases in which there is a new growth of connective tissue. The diabetic especially is apt to develop pain along the sciatic nerve; the characteristic feature of this type is that it is bilateral. So usual is it for sciatica to occur in the course of diabetes that in every case where the condition is apparent, there should be made repeated and careful analyses of the urine. In the gouty Charcot called attention to the fact that in the same patient outbreaks of gout and sciatica frequently alternated. Gowers reminds us that it is very liable to develop on a gouty basis.

Among the symptoms should be included polyuria. It is especially common in the grave cases, whereas in the milder, the reverse is apt to occur. A doubtful case should have an analysis for sugar

*Read by invitation before the Bronx Medical Association, April 2, 1913.

and indican, and a record kept of the quantity passed.

The symptoms of sciatica are: Pain, gait, wasting of the muscles, tenderness of the nerve to pressure, sometimes loss of the kneejerk.

*The pain* is boring in character, worse on exertion, worse in spots; the patient describes a condition in which the leg feels as though about to break. The pain can always be produced by flexing the thigh and extending the knee (Lasègue's sign). *The gait* is that of a modified hemiplegia; the leg is flexed, the knee inverted, the heel raised from the ground. There is a *wasting* of the adductor muscles. There is no R. D.

The nerve is tender to pressure in certain definite spots—at the sciatic notch, about the middle of the thigh, in the popliteal space, and back of the head of the fibula. The important point to decide in sciatica is whether the case is one of simple sciatica or of organic sciatica—that is to say, whether it is a simple neuritis or whether it is a pain the result of some other condition.

There are two or three little points which may help you to differentiate between a simple primary and a secondary organic sciatica.

In the simple sciatica the pain is apt to be more spontaneous and the nerve much more tender to pressure. In the secondary type there often occurs a sensory disturbance along the foot, together with an absence of the Achilles jerk. In this form there is degenerative atrophy, with electrical changes and much weakened muscles.

The course of sciatica is a long one. It is tedious and discouraging. A classical and typical case of sciatica will not only exhaust the patient, but usually two or three doctors. It is rare to find that the physician who started with the case, and who has done the hard work and borne the brunt of the fight, should be in attendance when the patient recovers.

The treatment of sciatica is a formidable subject. Osler once summarized it in two words, "Six months." A certain Frenchman said that there was "no treatment, but that there was a certain therapeutic method applicable to the sufferer from that disease."

The treatment must depend upon the cause. This means care and great detail. It means a thorough physical and laboratory examination. It may necessitate an examination of the blood, sputum, and cerebrospinal fluid; it may mean the taking of a Wassermann, a von Pirquet, or a luetin test. It may mean a vaginal, or a rectal examination, it may necessitate the calling in of an orthopedist. Every effort from the point of view of the pathologist, and every aid from the point of view of the clinician should be brought to bear on this point.

If the conclusion is reached that the basis of the sciatica is rheumatic, the treatment should be directed along rheumatic lines by the employment of the salicylates, aspirin, oil of wintergreen, menthol, and a proper diet; if the basis is gouty, then the treatment should be colchicum, atophan, iodide, lithia, fluids, and a restricted diet; if the basis is specific then the treatment should follow the approved course of that condition—mercury and iodides. An interesting question which would here present itself would be the advisability of giving either salvarsan or neosalvarsan. As a general principle it seems to me that if the case were clearly syphilitic, and either of recent or long standing, small and repeated doses of neosalvarsan could do no possible harm, might aid locally, and certainly would improve the general condition. If given, the other specific drugs—mercury and iodide—should not be relegated to the background.

If the conclusion is reached that the condition is secondary to diabetes, then the treatment should be that of diabetes—diet, with the removal of the sugars and starches.

If the basis of the condition is due to new growths, to pressure, or to some conditions which by mechanical measures causes the sciatica, the treatment should then be, so far as can be indicated, surgical. The general condition of the patient, together with the local indications for operation, must be borne in mind, carefully weighed, and a just conclusion reached. It is only after all of these measures have been resorted to that we are justified in calling the sciatica idiopathic.

If we find no discoverable cause that the sciatica is a primary neuritis or perineuritis, we must then resort to such methods and aids as are especially indicated in such conditions.

The patient must be in bed. In a mild, a severe, or a long-standing case of sciatica no remedy is comparable with that of rest. But rest does not mean lying down or attending to one's affairs with the aid of a conveyance; in the treatment of sciatica rest means complete relaxation of both mind and body. It means that the patient shall give himself up absolutely to taking care of himself; it means abandonment of his business, exile from his well-meaning friends and, most important of all, it means bed. A specified time should be agreed upon; a systematic and complete rest cure insisted upon. Once in bed, the leg should be so arranged as to receive the greatest amount of rest; if necessary a splint or a cradle may be adjusted so as to keep it easy and quiet.

Protect the leg from changes of temperature; this can best be brought about by flannel or woolen pajamas and socks. It is not necessary to cover both limbs; one leg of a pair of pajamas may be cut off and worn. All along the course of the nerve pack a series of hot water bags and bottles. If there are particular points of pain great comfort and aid can be derived from an electric pad. Through this a steady and continuous current can be run; in this way may be attained an even and uniform degree of heat.

The bed, when the circumstances warrant and the condition is sufficiently grave, should be a water bed; the sheets, not linen, preferably cotton. The environment is all important—quiet, attractive, and free from disturbing influences.

Next to absolute rest the one agent which is most serviceable and valuable is counterirritation. This can be applied in many ways—in the form of antiphlogistine, cantharides blisters, mustard, painting with iodine, and ironing. Ironing has many advantages; it not only applies heat, but also massage. Iodine is of value, the best preparation being Churchill's compound tincture. Of all the several counterirritants, however, one stands out pre-eminent; it gives the best results, and the least trouble. I refer to the Paquelin cautery. Apply it daily with skill and dexterity. He who applies the cautery should first learn to cauterize, and yet not burn tissue paper. Apply the cautery along the entire course of the affected nerve, leave spaces between the marks so that on the following day they too can be burned. Apply it daily for several times.

A suppository composed either of opium or one

of its alkaloids is a small adjuvant, but one which it is well to bear in mind.

Electricity is recommended by many. It is given in two forms, the Galvanic or high frequency. Either of these, in my opinion, is of doubtful value. The high frequency current can have but little effect, save from a psychic point of view. The galvanic current (3-5 milliamperes should be given) may serve, but to no great extent. It has always seemed to me that in the treatment of sciatica electricity occupies but a small and insignificant position.

Under the head of local applications I want to mention blood-letting methods. These may at times produce a very remarkable effect. They may be applied in one of two forms, either as cupping or with leeches. Apply them over the point of pain and allow them to remain for some time. Local sprays are frequently spoken of; they afford relief, but it is transient; they should be regarded more in the light of placebos than curative measures.

Much has been written in recent years of the injection method. This, by no means a modern form of treatment, dates back more than half a century. It was in 1853 that it was first presented by Wood, of Edinboro. For a number of years after it was much in vogue and then lapsed into disuse until about seven years ago, when Lange, of Vienna, revived it. Later it was modified by D'Orsay Hecht. The method consists of injecting into the sciatic nerve about 100 c.c. of normal saline solution at the body temperature and under considerable pressure.

The original method has been modified in many ways. Cocaine, stovaine, and eucaine have been added to the salt solution. For normal salt there has been substituted salts of magnesium and of sodium. Nothing, however, has proven so satisfactory or so lasting as the normal salt solution. The best plan is to inject about 100 c.c. of normal salt solution into the nerve under considerable pressure.

There are two points at which the injection may be made: If the pain is below the knee inject the peroneal branch, where it comes off from the parent nerve. If the pain is above the knee, inject the main trunk where it passes over the spine of the ischium, immediately after leaving the pelvis, through the great sacrosciatic foramen. At this point it passes between bone and muscle. The advantages of this point of selection are numerous; the point is easy to locate, it is unusually high in the course of the nerve, it is a point apt to be affected and the bony floor over which the nerve rests serves as a guide as well as an indication that the needle has passed through.

Forscheimer gives the following rule for locating this point: "Measure from the middle of the sacrococcygeal junction to the upper end of the posteroexternal border of the great trochanter. Mark the junction of the inner and middle thirds of this line, then go one inch further out." Again he says: "It also lies on a line joining the posterior-superior spine of the ilium and the tuberosity of the ischium at the junction of its middle and inferior thirds."

He gives the following technique for the injection: Sterilize the skin with soap and alcohol, paint the point chosen for the injection with iodine. Anesthetize the point and the tissues immediately beneath it with a few minims of cocaine from a hypodermic needle. Then with the patient either in the knee-chest position or preferably lying flat on his back insert the needle slowly but steadily. The needle should be about four inches long and the syringe metallic, capable of holding about 100 c.c. A shooting pain will tell when the nerve has been reached. The fluid should not be injected until this phenomenon has been experienced. Seal the puncture with collodion and keep the patient in bed for a day.

In contrast to this method are the alcoholic injections. These latter consist of the introduction of from ten to fifteen c.c. of a solution of alcohol into the sheath of the nerve. Formerly it was considered to be of much more value than at present. It should be borne in mind that the sciatic nerve, being wholly a motor nerve, the injection of alcohol produces a condition of degeneration and motor-paralysis. The consensus of opinion, therefore, is that in sciatica injections of alcohol are unwarranted.

Hot air has been tried and in some instances has relieved the pain. At Harrowgate, England, the affected leg has been subjected to an atmosphere of 350° Fahr.; some relief has been obtained but in general the result has been disappointing.

Mud baths have been tried by men in many places; this form of treatment is not practicable, and even if it were such results as have been achieved have not warranted essaying the treatment.

Baths of all kinds are without doubt of a certain benefit. These may take the form of showers, douches, needle, and medicated baths. The best of all is the hot sulphur immersion bath. This consists of placing the leg in a hot bath to which sulphur has been added. The objection to this mode of treatment is that in private practice it is extremely difficult to arrange in a satisfactory way any kind of a bath. It necessitates great quantities of hot water which should be kept at an even temperature and also requires constant handling and moving of the patient. The result is that the effort of getting a patient into and out of a tub often undoes the advantage gained by the prolonged immersion. At best any bath form of treatment is slow, tedious, and uncertain.

Hypodermic injections are frequently recommended and do relieve pain. Such relief as they give are transitory, add to the burden of the patient, owing to the elimination of drugs, and, above all, tend to inculcate a habit. The two drugs which may be injected are cocaine and morphine. The former in doses of one-tenth to one-half a grain and the latter in doses of one-eighth to one-half. These are not only unsatisfactory but dangerous methods, should be tried only as a last resort, and, if tried at all, should only be administered under the supervision of and by the physician. There is absolutely no excuse for allowing a patient to administer to himself a hypodermic for the relief of pain in sciatica. No nurse should be allowed to give it, only a physician. He should give it very exceptionally.

Massage has been frequently tried; at times with good results. The value is dependent upon the cause and the type of the sciatica. If the condition is one in which there is marked congestion, gentle, steady, and persistent massage will help. Ichthyol instead of cocoa-butter seems to exert a specific influence for the good. The very strong and disagreeable odor which accompanies the use of ichthyol is an argument against it.

Surgical measures are largely restricted to stretch-

ing the nerve. This, like many of the other procedures which I have mentioned, should be relegated to the list of remedies "of last resort."

So far as concerns medication, the list of drugs tried in sciatica is very large. In those cases in which no marked cause is discoverable methylene blue has been recommended. Castor oil is another favorite; it is always of value, as it seems to reduce the congestion and remove the toxemia. Large and repeated daily doses of strychnia help by increasing the resistance, improving the nutrition, and toning up the nervous system.

The most important thing of all is to keep the general health of the patient as near perfect as is possible. To bring about this result, resort should be had to nerve foods, tonics and stimulants. The glycerophosphates, strychnia, and alteratives are of use.

Diet is a detail which to my mind has never received sufficient attention. Any patient who is suffering acute pain and upon whose nervous system great and constant demands are being made requires a large amount of food, and nourishment of a kind which is both stimulating and fat producing. A part of the treatment of every sciatic should, therefore, consist of a diet in which fats predominate. He should have milk, cream, eggs, butter, marrow, bacon, and oils, mayonnaise dressing, and cheese. He should have frequent feedings between meals in addition to three regular and large meals. Forced feeding is almost as essential as rest. The principal foods which are contraindicated are those abounding in the proteids. Therefore meats, especially the red meats, must be eaten sparingly. Alcohol should be interdicted. Large quantities of water aid in two ways, by tending to improve general nutrition and by flushing out the kidneys. An excellent plan is to give these patients half an hour before each meal a large cup of hot water into which has been poured one of the glycerophosphates.

Now I come to a part of the subject which is very important—the after-treatment. The treatment of a condition like that of sciatica is only successful when minute attention to detail is assured. Those cases, and they are numerous, in which relapses and second attacks occur just as the patient is about to recover, or has been discharged, are, in a large measure, the results of faulty or careless after-treatment. It is unwise to discharge a case too soon, it is unwise to adjudge a case cured simply because the patient ceases to suffer. Bear in mind that a cessation of the pain does not mean that the nerve is wholly free from congestion and inflammation. A large nerve like the sciatic which has been exposed to a long siege for months afterwards, remains susceptible to fatigue, to exposure, and to changes of temperature; it is more readily affected by toxins, by diet, and by prolonged exercise. Therefore, see to all these details, keep the sciatic nerve nourished, see that it is not pressed upon, cover it, and protect it from draughts and exposure. Do this for some months after the pain has ceased and in this way give it every possible chance to get well. A practical point to bear in mind is, that no sciatica is cured until Lasègue's sign can be elicited without giving pain. I mean by this that no sciatic patient is ready to be discharged so long as flexion of the thigh upon the abdomen with the leg fully extended continues to give pain. This is a very sure help, one which you would do well to remember and one which you ought to practise.

Finally in the after-care do not forget that constitutional treatment is important and necessary; here fat producing foods and cod liver oil will be of most help.

There are a certain number of long standing and intractable cases in which no cause can be discovered and in which no treatment has helped. These cases suffer a great deal of pain and a great deal of inconvenience. The best way to manage such cases is to make a complete change of their environment, to get them away from home and friends, to give them a nurse, and to treat their general health. Such patients should be given to understand that time is the most important factor in their care and that many methods will have to be tried. In these cases I should advise a treatment consisting of rest, the saline injections, and building up of the general health. It is surprising what results can be obtained even in the chronic and long-standing cases by such methods.

In conclusion I wish to thank you for the honor you conferred upon me in inviting me here to-night and for your very kind attention.

54 West Fiftieth Street.

## DIETETIC HABIT AND GASTRIC FUNCTION.

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It is generally assumed that the question "What shall I eat?" when put to gastrologists, should be answered with facility. Simple as the question is and natural to those immediately interested, it is one of the most difficult to reply to promptly, in any given case. Hesitation usually implies either ignorance or mediocrity to the average mind. Many of us can testify to this with embarrassment, for with all due respect to the progress made in the physiology of the digestive processes during the past generation, not one particular dietetic scheme has been evolved which will meet the requirements of the general or average run of common gastric disturbances, and aid the physician to answer quickly and with assurance, the question so concisely put. The enthusiasm which prevailed in the youth of this specialty led to the elaboration of the most enticing dietetic measures and lists, devoted to this or that organic change in the stomach, scientifically conceived according to individual interpretations of analytical values, calculated with precision as to acid percentage or caloric worth; but not one of these has stood the test of time or can help any of us to determine quickly the proper procedure in any individual case. In order to be convinced of this, we have only to listen to the banal, evasive, and indifferent answers given to the question in any one of the gastric clinics.

It is not necessary to go very far to seek for the causes of this inadequacy. The elaborately detailed diet lists which appeared in such profusion during the development of this particular subject received their inspiration from enthusiasm resident in the various lines of experiment at the time. An examination of the literature will reveal that there was a period of carbohydrate preference and a period of protein preference, each for the purpose of influencing the gastric secretions. Both schools contained the names of prominent clinicians whose reputation for scientific precision could scarcely be questioned. It was the period of trial and experiment, and it remained for time to decide. The accumulation of

evidence over the years has amply demonstrated, however, that it is useless in the average case to try to change an established gastric secretion by any particular chemical property of food, at least, within periods of ordinary observation. Abnormalities of secretion, once established, are more or less fixed, no matter what improvement in symptoms may occur, and the whole object of treatment should be to accommodate the organism to the conditions. Even the radical changes induced by operation cannot alter the local tendency, a fact which has been repeatedly proved by gastric analysis in numerous cases, years after gastroenterostomy. Deficient secretion as a result of cell degeneration, cannot be restored, and protoplasmic habit and memory operate to the same end in excessive secretion. In addition to this, we now know that the great majority of the gastric abnormal secretions are not due to dietetic indiscretions and abuse as was formerly supposed, but are rather unavoidably induced by circumstances over which, in most cases, the individual has no control. Herein lies the secret of the failure of elaborate dietetics. This is the reason that the simple question, "What shall I eat?" resolves itself into one of the most perplexing with which we have to deal.

In view of the inefficacy of dietetic measures, selected as to chemical affinity, markedly to influence the gastric secretions permanently, it would seem necessary to attack the problem from another quarter. This appears all the more reasonable since clinical experience has led us to believe that the vagaries of the gastric acid secretion are of secondary importance in the sum total of casuality in diseases of the stomach. The clinical experience accumulated in the last twenty years enables the gastrologist to view the subject with broader comprehension, and to discard those minute differences of gastric function which at one time seemed so important. We have passed the period when the determination of such conditions as hyperchlorhydria or hypermotility represent the final effort in diagnosis. We look beyond the local situation and use it only as a sign post indicating the infringement of physiological or constitutional laws. Except in the very small percentage of abnormal functions, due to direct abuse of the digestive tract, most vagaries of gastric secretion represent in the individuals possessing them, indications of constitutional taint, be they metabolistic, evolutional, or temperamental. It is in the appreciation of these that real comprehension of the local conditions lies.

The secret of the successful dietetic management of most dyspepsias consists in methodically meeting these conditions and adapting the food supply thereto. Hence the question is not so much "What shall I eat?" as "When shall I eat," or "How shall I eat." Such a modification does not, as a rule, satisfy the demand or the interest of the individual concerned, for the close relationship of chemical affinity of food to distinct gastric symptoms, is an ingrained conception inspired through generations of habit and false association. We all know how difficult it is to combat this association of specific insult to specific distress, and with what incredulity any suggestion to the contrary is met. In this respect the dietetic management of most cases amounts to a process of reeducation, eradication of false notions; in short, a psychological readjustment to existing conditions. It was an old maxim of Trousseau that individual judgment in the course of experience would satisfactorily adjust the diet of the individual to the individual. While this may be true in some cases, we also know that the temporary disagreement of any particular item of food will induce in certain hyperaffective individuals an antagonistic psychological setting, calculated to produce disagreeable digestive results indefinitely. This would further lead to the conviction that in dealing with many of the indeterminate varieties of gastric disturbance, we have to do with distinct phobias, engendered by the primal instinct of self-preservation, of which hunger and appetite are but partial impulses.

The estimate of the value of our present knowledge of dietetics will depend largely upon the point of view. If we regard the subject in the light of scientific research we must feel encouraged. The work of the metabolists along decided chemical and physical lines is far reaching. If, on the other hand, we approach the question from the purely utilitarian standpoint and attempt to apply the principles so far proposed to the daily routine of actual practice, where do we stand? From not one book of the many written upon the subject of dietetics or gastric diseases can the general practitioner glean a practical scheme calculated to meet promptly the demands made upon him in any particular case. At best he receives but a hazy conception of the dubious importance of carbohydrate or protein regulation in the event of exaggerated or diminished analytical findings.

There are two aspects to the dietetic management of every case of chronic dyspepsia. There is the distinctly personal or psychological side, and there is the scientifically determined side. In the one, treatment is entirely individual. In the other, it is more or less schematic, according to the classification of the local conditions. Successful treatment will depend upon a judicious combination of the two. Undue exaggeration in either direction will result in failure. Unfortunately, such exaggeration exists all too frequently, especially on the scientific side, with the result that the human stomach is regarded as a chemical laboratory or mecahanical device which can be forced to correction by corresponding methods.

It must be evident to those having sufficient experience that there is a great number of indeterminate gastric conditions, which cannot be classified, and which cannot be reached by either physical or chemical procedure. To approach these cases from the purely scientific side would be useless. Nowhere is this more apparent than in their dietetic management. There is here a very large personal factor, involving ingrained tendency, which, if scientific dietetics does not regard it, will surely render all its efforts futile. It is here that the finest psychological insight it required. It is not sufficient in these cases to classify them as simply neurotics and to place them upon a hypernutritive diet, in the manner of frequent feeding or to subject them to the usual institutional hydrotherapeutic measures. These cases require the keenest psychological analysis, for they are not neurasthenics or psychasthenics, in the ordinary acceptation of these terms. Most of them belong to the distinct category of the anxiety neurosis, and as such, demand a complete exposure, not only of their daily routine as regards diet, work, and recreation, but also of the oftentimes hidden mental mechanisms inspiring their motives, habits, and general psychological trend. It is not to be understood that in these cases the local organic changes can be ignored. These may be very decided and require the appropriate treatment of the books. What must be remembered is that each one of these indeter-

minate cases represents a psychophysical parallelism which the present mechanical tendency in gastrology is only too willing to ignore. So great is the demand for specific chemical or mechanical procedure to meet the local conditions that the average gastrologist is afraid to acknowledge the neurological features of a case, because it might involve him in a confession of ignorance.

It is fairly safe to assume that the result of abuse of the stomach from the ordinary standpoint is not directly proportional to the amount of abuse, but is directly proportional to extraneous circumtances. It is the latter which determine the character of the local changes largely and which also cloud the issue as regards positive diagnosis. Hence it follows that the most difficult cases—difficult as to diagnosis and treatment—are found among those classes where the struggle for existence is keenest, where adjustment to the environment, in its broadest sense, is impossible, because the environment is constantly changing. Here we find that great mass of indeterminate cases, mixed psychoneurogastric conditions, which may well require the services of gastrologist, neurologist, psychologist, and sociologist. This is not so apparent at the extreme ends of the social scale. Here the results of abuse of the stomach are more directly proportional to the amount of abuse, and it is astonishing to what extent this abuse may be carried without producing symptoms. Examination in these cases will often reveal the most decided and extensive local abnormality. The impunity, however, is only apparent. The effects are there, but they are not in evidence. The reasons for this are obvious, for they lie in the sphere of affectivity, which at the opposite ends of the social scale is relatively dulled, each for its own specific cause.

Every chronic dyspeptic represents a psychological problem. It is not sufficient to be satisfied with the diagnosis, neurasthenia, or psychasthenia. In the majority of the conditions the real causes lie far deeper than the superficial atmosphere designated by these terms. The causes operating to produce the necessary affectivity are to be found at the very foundation of the individual's being. His primitive instincts are involved. In these cases it is his instinct of self-preservation, from which philosophers tell us all the baser qualities of human nature spring. Education, with resulting intelligence, does not seem to help much in guarding against such affectivity. The veneer of this is soon rubbed off by the force of impulse. Judgment is warped by emotivity. Hence it is clear why the conflict which is constantly raging in the struggle for existence should primarily affect those organs which represent for the individual the only basis of his continued existence; namely, his food supply or nutrition. It is immaterial whether the initiative for the local condition in the stomach was originally given by the habits of the individual, forces over which he had control, or his environment, over which he had no control. The final result will be the same. It is the business of the gastrologist to grasp fully the principles here involved, to shake himself free from the idea that attention to these details involves a confession of ignorance. Every accomplished gastrologist has got to be a psychologist and neurologist. The three departments go together. They are inseparable, and only with this equipment can he successfully approach those unclassifiable cases which form the great bulk of our chronic dyspeptic conditions. In this connection it would be reasonable to venture the opinion that the modern psychological neurologist, who has equipped himself with a practical working knowledge of the principles of gastric functional processes and their pathological tendencies, would be better able to approach these cases successfully than the gastrologist himself.

The general character of these cases would seem to indicate that such individuals are living in an atmosphere of tension. Psychic tension, characteristic of the age, results in physical tension, which, if projected into the gastric area, produces hyperactivity of all the functions. Hence the great frequency of such conditions as hyperchlorhydria, hypersecretion, and hypermotility. Most of these conditions are the local manifestations of anxiety states. They are preferably localized in the digestive area because most of man's activities are subservient to his animal demands. They are aided and abetted by the daily habits of diet, imposed upon the individual by necessity in some cases, more likely, however, as the result of false notions of utility or imitation of common pernicious practices. It is the latter which interest us in this connection.

It has been said that Americans do not eat; that they stoke. This criticism is justified, for it is certain that the average daily dietetic habits in this country are not adapted to the demands made upon the organism by the exigencies of life here. Until habit is adjusted to these demands there is going to be no diminution in the common forms of gastric disturbances as we encounter them in the great mass of our digestive troubles. That this will be accomplished in the near future is not probable, for the psychological setting of the average American is not conducive to this end. Living and working as he does, in an atmosphere of constant tension, let us see to what extent the daily habits of diet of the average business man would offset this tension. Breakfast is usually hurriedly taken, between seven and eight in the morning, and is of such quantity and quality that it has left the stomach in two to three hours. Hence the average worker continues to labor under conditions of tension for two hours, at least, upon an absolutely empty stomach, one which, in all probability, already exhibits excessive acidity and motility. Under these conditions of inadequate physiological and psychological receptivity, a quick lunch is indulged in. This has left the stomach by three or four o'clock, and labor is continued until the end of the working day under the same conditions.

Arrived at the usual dinner hour the average individual, exhausted and laboring under accumulated tension, exhibits one of two tendencies. He either has a voracious appetite or no appetite at all. This is the purely psychic aspect. Actual hunger is present in each case. In the first condition a hearty meal is indulged in and the stomach which has been in a condition of tonic contraction since early morning is suddenly called upon for complete relaxation to receive a large quantity of food, of promiscuous quality, and rarely selected for digestibility. If the reflex mechanisms are in proper working harmony, this may be accomplished without undue disturbance. The chances, however, are that the same conditions of habit, environment, and occupation, which have necessitated the daily routine, have already interfered with the necessary reflex regulation of adaptation by relaxation, so that instead of complete adjustment to the new conditions, there results insufficient local muscular relaxation, giving

rise to the common symptoms of pressure, bloating, and general gastric discomfort. These are evidences of muscular inability to meet the new demands. During the night the stomach gradually becomes master of the situation and the symptoms disappear. It is possible that no harm may result, but the chances are that the foundation is being laid for a permanent hyperchlorhydria or hypermotility. The general nutrition need not suffer under this régimé, for the organism may receive and assimilate its demanded food values for the twenty-four hours.

In many cases, however, the persistent gastric contraction imposed by such a régimé of irregular and insufficient food distribution, results in loss of desire for food. The individual is hungry, but has no appetite. The one is a metabolistic, the other is psychic. The inspiration for the latter comes from the contracted stomach from which the impulse is carried to the centers. It is to be inferred that at some period of the day, in these individuals, the tonic contraction of the gastric musculature was such as to inspire the psychic condition—appetite. Habit and occupation, however, prevented the satisfaction of the desire, with the result that the afferent impulses lose their effect upon the centers as a result of overstimulation. The receptivity of the centers is dulled and anorexia results. These are the cases of rapid satiety or anorexia, which present such a difficult problem for the gastrologist.

In these cases there is no corresponding local muscular relaxation to the food intake. Hence the quantity of food consumed is inadequate, and the general nutrition suffers. In addition, the tension of the day is not relieved, which leads to nocturnal restlessness, disturbing dreams, awakening without a sense of refreshment. The vicious circle is complete—prolonged abstention with hypertension, anorexia with insufficient nutrition, hypertension with local hypersecretion, and hypertonicity. It must be evident how futile it would be to approach these conditions from the purely gastrological side. Hyperchlorhydria, hypersecretion, and hypermotility existed in these individuals long before any exhibition of local discomfort. It is very probable that they exist in a majority of individuals under present conditions of life. They are not pathological until general affectivity makes them so, and this period arrives early in some, late in others, never, in a great many instances. Just as we find achylia persisting through life without declaring itself, so these conditions may exist indefinitely without attracting attention. When they do give evidence of their presence, this is not due to their own intensity, but is rather due to the increased affectivity of the individual. Local nerve irritability may remain unchanged. The individual becomes more receptive for such impressions. It is curious to note that in all the work done in the minute differentiation of the various kinds of hyperchlorhydria or hypersecretion, not one satisfactory explanation has been forthcoming as to local causation. Self-evident mechanical conditions are excepted. All publications usually end by referring to general states, such as neurasthenia or psychasthenia. Nor has one successful scheme, medical or mechanical, been devised for successfully combating these conditions from the purely local side. We have various palliative measures, good so far as they go for local relief, but the real object of treatment must always be to get the individual back into such a mental and physical condition as existed at the time when the local state passed unrecognized.

If the prevalence of such local states as excessive secretory and motor activity of the gastric structures is due to the prevailing routine life, and if this routine is unchangeable under present exacting conditions, then in the spirit of preventive medicine the dietetic habits of the day should be changed, should be so adjusted to the unavoidable conditions that the evil effects of the latter may so far as is possible be obviated or lessened. The whole object of food intake should not be ample nutrition solely, but should be directed toward lessening the psychic tension under which most individuals exist, and by relieving this, prevent the local results of such tension. It has been our habit to do this after the local harm has been done. Hypernutrition by frequent feeding is resorted to after the gastric conditions are established, but as a preventive measure for combating the production of these conditions in individuals, whose occupation and enforced habits of life would lead us to believe that the conditions will sooner or later be developed, nothing or little has been done.

In this connection we must consider metabolism to a certain extent. It is the prevailing custom to attempt to adjust the nutritive value of the food intake to the weight and the daily habits of the individual. There are very comprehensive tables to help us in this respect, and they are undoubtedly serviceable in the management of armies or in institutions, but the average practitioner finds himself peculiarly helpless in their presence. He has his choice between the sixty grammes of protein *per diem*, according to Chittenden, or the hundred grammes *per diem*, according to Atwater. He may calculate on the basis of sixty-five calories for his patient asleep, and two hundred and ninety calories for active muscular work, but unless he takes into consideration the personal factors in each case, the schematic work of the calorimeter may well be vitiated, and usually is. Much safer is he to take refuge in "Factors of Safety," assume that under the present conditions of psychical and physical tension, the individual is undersupplying fuel for his enforced energy production and feed him liberally, trusting that the organism can take care of the waste. Atwater undoubtedly had this in mind when he considered that the average American required more calories, according to body weight, than the average European, because the American throws more energy into his work. This applies as well to mental as to physical work. We have not attained the philosophical spirit on this side. We think tumultuously, and there can be no doubt that the metabolism attendant upon this phase of existence is very considerable, however small the exact calorimetric data may be so far.

The secret of successful dietetic management of the prevailing type of digestive disturbances lies in adjustment. In most cases the food intake, in both quality and quantity, is adequate for the individual. Its distribution is wrong. A quantity of food, sufficient for the caloric requirements of the body for twenty-four hours, can well be taken at one meal. It is not likely that many would perform efficient service under such a régime. Such belongs to the predatory animals. In a general way it may be said that the greater the psychic strain, the more general should be the food distribution. He whose labor is entirely physical can well survive prolonged interprandial periods. Here the exhaustion is more gradual, more cumulative. The exhaustion attendant upon mental effort is irregular. It increases

and diminishes, according to conditions, at various periods of the day. Hence the individual needs more frequent support and the response to this is more rapid. The relief here afforded is not due so much to the nutrition involved, as it is to the relaxation induced from the hypertension under which the individual is laboring. It is this relaxation which is beneficial in most cases, both generally and locally. Much labor has been expended in calculating the quantity of proteid, carbohydrate, and fat for certain body weights and amount of work performed. Very little consideration, however, has been given to the quality of the latter. It is evident, however, from observation of the general run of gastric diseases, that it is the latter which has not only induced the local troubles, but also determined their character, and we can expect very little diminution in their frequency until this proper adjustment is made. This applies as well to the factory worker as to the office worker. In the one case it is the extreme tension of occupation; in the other, its extreme monotony. Both these factors are decidedly operative in neurology as conducive to abnormal nerve states. Physicians from the industrial districts report the frequency of the neuroses among their people. If the neuroses are frequent, it is safe to assume that the gastroses are frequent. Here the increased meal system would not only benefit the local conditions, but, by relieving the monotony of the occupation, would do much to prevent the increase of the minor nervous states. The treatment of a great many of the so-called dyspeptic troubles, the vague, indeterminate cases which do not yield to routine methods, is simply a question of intelligent regulation and adjustment to existing conditions. In this respect an imitation of European customs would serve a certain purpose, and many a case of the class referred to would be relieved and benefited by a *déjeuner à la fourchette* or by some afternoon tea. Nor would such a régime reduce the productive activity of the individual. On the contrary, it would increase it. The quality of the output would be improved, for most of us are working under conditions which are not conducive to the best that is in us of good judgment, concentrated attention, and undisturbed mental poise. For most people, under present conditions of life, there exists a very decided disturbance of relationship between cognition, affectivity, and conation, and while we cannot change conditions as they exist, we can do much in the daily regulation of the individual to adjust him to these conditions. This is the greatest, the most productive, most satisfactory work the gastrologist can perform. This requires oftentimes much patience. It entails not only an inquiry into the individual's habits, occupation, and environment, but also a searching investigation of his general attitude toward life by an analysis of his sentiments into underlying emotional complexes, these further into their propelling primary instincts, and a selection from these of the one which is the driving impulse of the whole of his existence. It can be fairly safely assumed that in each individual there is one selective and compelling primitive instinct, around which the character of the individual is crystallized, and which is the dominating note of his personality.

If this overdetermined instinct assumes such proportions as to bring it into conflict with the herd instinct which manifests itself in the social restriction imposed upon all by the conventions, an emotional conflict will ensue, which, being itself primary in its nature, will naturally first affect those bodily functions which stand in closest relation to the primitive instinct of self-preservation, which is partially revealed as appetite, resulting in food consumption. Every gastrologist should be a psychologist, to a certain extent, for there is a vast number of digestive conditions which will not yield to the cold scientific attitude assumed by those who look upon stomach diseases in the light of purely physical and physiological causal relationship. In philosophy he should be a hedonist, for whatever may be the merit attached to this conception of inspiration for human activity, there can be no doubt that this principle is always involved in the proper estimation of the condition with which we are here dealing.

It is not to be inferred from the foregoing that the actual local conditions of secretions and motility are negligible in the dietetic management of our ordinary dyspepsias. The proper diet, while striking at the root of the evils as they exist in the habits and environment of the individuals, must seek a compromise between the local effects and the general causative agencies. The local effects are primarily increased or diminished secretion, of which achylia and hyperchlorhydria are the extreme types; hypomotility and hypermotility, of which atony and hypertonicity are the best examples. These fundamental states, or the tendency to them, are present in every case, and the question arises how far can we influence them through the diet. In a general way, it may be assumed that they cannot be materially influenced by the diet because in the great majority of cases they have not been produced by the diet. It can further be stated, especially of the secretions, that once firmly established in their abnormality, they have come to stay. Hence a rational diet must adapt itself to the condition and make the best of it.

In this regard it would be interesting to inquire whether the chemical attributes of food have any particular bearing upon these states. Much work has been done along this line, and it is generally assumed that carbohydrates diminish gastric secretions and that proteins stimulate them. Under given conditions of experiment this principle seems to hold true over short periods of time. In practice it has been of indifferent service. There are three reasons for this: First, it does not strike at the causes of the abnormal secretion. Second, any monotonous diet loses its effect in the course of time and fails in its object through lack of variety. It has been experimentally demonstrated that the hyperstimulation of proteins, if continued long enough, will end with hypostimulation. A bodily sensation is the result of variety of stimulation, and the perception of any sensation, be it visual, tactile, or organic, will diminish if the exciting cause continues undiminished and unchanged indefinitely. The best practical example of this we have in certain cases of overstimulation from food retention in the stomach, in the early stages of which we often encounter excessive acid secretion. As a result of continuous irritation, this hyperacidity may change to hypoacidity. It is a fictitious condition, for removal of the retention will alter the secretory function. The third reason for failure to secure the desired theoretical result of either a carbohydrate or protein régime rests with the motor functions. In achylia we cannot give proteins because there is no acid to prepare them for intestinal digestion, and the usual hypermotility results in sudden overloading the upper intestine with a mass of material with which it may be dif-

ficult to cope. In hyperchlorhydria we cannot give proteins because of their hyperstimulating qualities, resulting in excess of acidity which in the hypermotility resident in the common combination of hyperacidity and hypermotility, in the early stages, produces the same overloading of the intestine, except that here it is complicated by an excessive acidity. Further, it must be remembered that the ultimate tendency of every hyperchlorhydria is toward retention, which can only be hastened by a protein diet.

Similar difficulties present themselves in the case of the carbohydrates. In achylia these would seem to constitute the ideal diet. While they may be better digested in the subacid stomach, they lack also the necessary stimulating quality with which it is desired to revive the flagging secretion. This cannot be accomplished by the carbohydrates for their appeal to the appetite is small, so that the very important factor of the psychic secretion is eliminated. In hyperchlorhydria the administration of carbohydrates may yield less acid, but experience teaches that they are not well supported on account of their tendency to excessive fermentation. The ordinary yeast plant flourishes in an acid medium and with the tendency to retention which supervenes in the course of time, the local conditions for fermentation become increasingly favorable.

Hence it is evident that in actual practice there are very decided limitations to the employment of scientifically conceived dietetic régimes. The difficulties enumerated above constitute only a small number of them. The question naturally arises whether in the treatment of our common mixed forms of gastric indigestion, it is essential to lay great stress upon the vagaries of the local functions themselves, to try to influence them by determinate dietetic procedures. Experience only can solve this problem, and it appears to have demonstrated that a simple, non-irritating, rationally conceived mixed diet, distributed in such quantity, and at such intervals as to meet the requirements of general energy disbursement and local muscular activity, will accomplish the desired result in most cases. From observation we know what the general trend of gastric disturbance is, what local conditions are likely to supervene as a result of modern every-day activity. Hence the practitioner who, without gastric analysis, fully appreciates this tendency, can, by regulating the diet to meet these conditions, well afford to neglect the details of chemical affinity. For some years the writer has been employing such a method and has found that the same diet, applied with this conception, will accomplish excellent results, irrespective of ordinary local conditions of acidity or motility.

Much time has been spent and experiment indulged in to differentiate the finer nuances of gastric abnormal secretion, and there are those who lay great store by the results obtained, but when we look back and attempt to discover some differentiating causal relationship, we fail to discover the same, and the finer distinctions of such states as hyperchlorhydria (periodic or permanent), hypersecretion (alimentary, larvated, etc.) are but successive stages of one and the same process, the distinguishing aspects of which are accidental manifestations produced by differences in duration and of individual factors operating in each case. Excepting purely mechanical or gross morphological local conditions, no specific cause for each phase has been found, so that the finer distinctions made and insisted upon by some as so essential retain but a questionable interest.

In conclusion, it may be stated that as specific causes are wanting, so also specific treatments are lacking, and having satisfied our scientific vanity as to finer distinctions in local manifestations, we are forced, when it comes to treatment, to indulge in the broadest kind of generalization. This is as it should be, for the causes of most of our common, mixed, indeterminate stomach troubles are general causes, without specific relationship to local conditions, intimately connected with the personality of the individual in all that this implies, and the gastrologist who fails to go beyond local considerations, who applies himself too assiduously to chemistry and physics, has failed to grasp the situation.

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## THE ECONOMIC IMPORTANCE OF SPEECH DEFECTS.*

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In the evolution of species the origin of speech presents numerous interesting problems. From the stridor of insects to the croaks of frogs or the barks of dogs, there is a gradual development of vocalization until, in the gibbon, there arises the first evidence of musical direction of voice. Speech is an instrument for the communication of ideas. In its broad utilization, speech constitutes a marked characteristic of homo sapiens. As man is essentially a social animal, so speech is his most important social characteristic and activity.

The capacity for speech exists at birth. The acquisition of language and the development of tone production depend upon training through the various senses. Speech may only be acquired through the harmonious action of the brain and the muscles. Cerebration and muscular coordination are prerequisites for the verbal crystallization of the ideation which is seeking expression. Speech in its essence is a conscious act. It originates from a desire or impulse to express ideas or communicate thoughts. Born of emotions it is intellectualized. "Speech was made to open man to man, and not to hide him, to promote commerce and not to betray it."

Sad is the lot of the mute. Woeful and pitiful is he until the gates of intelligence are opened and the flood of ideas may issue forth through the medium of words. The living voiceless man is stultified and the world is deprived of such richness of his mind as cultivation might reveal. In the words of Pliny, it is "the living voice that sways the soul." The value of speech from the standpoint of personal expression cannot be estimated in terms of pounds, shillings, and pence. The development of a single human being to a state of mental happiness involves self-expression. Constant self-repression is incompatible with perfect health and contentment.

The sounds of the voice were primarily used and perfected, according to Darwin, in relation to the propagation of the species. With this germinal idea one may ally the importance of speech to the development of the race. Racial progress is largely dependent upon the development of voice production and the transmutation of ideas into definite arbitrary sounds which constitute a medium of ex-

*Read before the Manhattan Medical Society.

pression. Tone production, modulation, and timbre are subordinate phases and constitute the refinements of speech. They are secondary, however, as modes of thought and expression, just as gesture and muscular movements have been relegated to a position of secondary importance. Among the deaf, the thinking and articulating mechanism may be normal and speech may entirely lack what we call expression, though it serves to communicate thought. The potentional value of such speech is less than that of normal speech because of its monotony, its strain upon the attention of hearers, and its abnormal sound. Its social value is distinctly limited, though it does serve to promote soul expression.

It is exceedingly difficult to establish with even approximate mathematical precision the economic cost of speech defects. We have no method of determining the number of people with speech defects. The economic importance of speech defects depends upon the functional ability of individuals, and at various ages the importance of the same speech defects varies. It is obvious that the importance of a speech defect in a child of five is less than in a man of twenty.

It is almost impossible to consider speech defects as isolated phenomena. There are no careful estimations of the number of individuals who suffer from speech defects without some complication of an organic or functional derangement, such as produce important factors in lessening the economic value of the individual. Obviously speech defects among the deaf and the feeble-minded constitute only a part of the lessening of the economic work and the speech defect must be considered simply as a part of the general disability which lessens the social worth of the afflicted.

All speech defects represent abnormalities. In a wide sense abnormal children are "those afflicted with anything whatever that unfavorably affects their lives in relation to the social medium in which they live." Consequently speech defects represent abnormalities which per se limit the possibilities of children and adults to realize to the utmost their potential power for uniting in the activities of the world.

Speech defects involve the disabilities due to some error in the mechanics of tone production, some inco-ordination in the muscular habit of sound production or faulty cerebration. Pure speech depends upon the integrity of the several mechanisms involved in sound or word appreciation. Speech defects in their origin may be acquired or congenital. In their pathology they may be central or peripheral. According to Makuen "speech is an acquired faculty and stammering is an acquired defect." The child with ability to hear ordinary sounds but who lacks the ability to retain impressions of spoken language will fail to acquire speech.

Stuttering, according to Claiborne, should be classed among those conditions having their basis in a congenital defect in the centers controlling speech. A large proportion of stutterers are curable. Probably fifty per cent. of stuttering could be prevented. The limitation of the stutterer is marked not so much in his powers of acquisition and appreciation as in his ability to give physical expression to his thoughts. His mentality may be intact but his opportunities for giving evidence of his mentality are hampered by virtue of his explosive expression which deprives him of an attentive audience.

Speech defects which originate in organic diseases such as paresis and multiple sclerosis may be of value in first calling attention to the existence of these serious diseases. The value of speech defects as indicating disordered cerebration has not been fully appreciated. Aphasia, whether auditory or motor, complicates the disability of paralysis and renders more helpless the victims of the numerous conditions which produce the aphasias. The disagreeable echolalia or paraphasia present cerebral forms of speech defects which indicate difficulties with cerebral mechanisms and make it difficult for individuals to give free expression to their desires and wants. In all the aphasias, the problem of thought expression is of importance and the economic cost of overcoming the limitations of such speech defects can only be estimated in terms of nursing service, protection and re-education, which is a most valuable factor.

The various types of speech defects which are dependent upon malformations, such as hare-lip, cleft palate, hypertrophied tonsils and adenoids, and dental deformities reveal an economic loss which must include the cost of operations, nursing care, and hospital treatment. The permanent defects which result even after medical and surgical aid has been afforded circumscribe the activities of the sufferers to occupations wherein vocal effort is of minor importance.

Mutism is an unfortunate condition which received attention even in the days of the Venerable Bede. The development of attention to speech defects centers about the effort to gain an insight into the souls of mutes. According to Budin, twenty-five per cent. of deaf-mutes occur among consanguineous marriages. Consequently, the economic cost of this type of defect involves the eugenic considerations that would tend to lessen the occurrence of this defect. The cost of deaf-mutism has not been calculated because in the figures given for institutions for the deaf there is included the cost of instruction of those who are not absolutely deaf-mutes but who have various impairments of hearing due to catarrhal conditions.

The retarded development of speech indicates that something is impairing the mental and physical faculties of childhood. This is especially manifest in the relation of retarded speech to the slow development of walking. The longer speech is delayed, the greater likelihood is there of permanent speech deficiency. To this extent early speech defects or even idioglossia may serve to prognosticate mental impairment. Late talking in itself may have some slight effect upon the mental powers, limiting methods of expression, though not necessarily interfering with powers of idea appreciation. The feeble-minded child who is late in learning to walk as well as to talk is likely to be of the most severe type of mental defective.

Distinction should be made between the deaf child who has speech deficiencies because of his inability to hear and the feeble-minded child who is unable to speak because of a lack of cerebral development. This fact is of the utmost importance in regard to the problems of education, because, though these two types of children may at the time of entering school be equally backward, the methods of education to be employed must be radically different, and consequently different types of classes must be instituted for their education.

The majority of speech defects are combined with defects of vision, hearing, muscular coordination or

cerebral mal-developments. Of the twenty million children in this country it has been estimated that five per cent. have impaired hearing and twenty-five per cent. have impaired sight. It has been adjudged that some impediment in speech exists in three per cent. of the school children. There is no differentiation, however, in so far as I have been able to ascertain, as to the nature of these various impediments.

The character of speech defects and their importance varies according to the degree of deafness. Mutism results if deafness occurs before speech is developed. Indeed if speech has merely begun and deafness ensues approximate mutism results. The deficiencies of speech will vary with moderate or marked degrees of deafness, though these represent types of speech defects which are most easily amenable to educational treatment. Deafness only indirectly affects the speech center but nevertheless markedly influences vocalization and expression.

Feeble-mindedness may be first evidenced by lateness in talking or by peculiarity of speech such as difficulty in giving certain consonant sounds. As has been remarked, the longer speech is delayed in its development, the more likelihood of the permanence of the mental defect. Stammering and stuttering are not usually correlated in any way with feeble-mindedness, although as Church-Peterson states, they "are certainly found more often in children with a neuropathic inheritance than in children with good heredity." The importance of this observation can be estimated by its indication of the necessity of giving particular care and attention to children in the home.

In Germany, investigation has shown that of the fifteen thousand children in special schools for defectives, six per cent. have associated speech defects. It is thus obvious that the economic importance of speech defects is bound up in considerations of the importance of such causative conditions as feeble-mindedness, deafness, and neuropathic manifestations.

Assuming that estimations by Van Sickle, Witmer, and Ayres are correct in that four per cent. of our public school children are feeble-minded, it would mean that there are eight hundred thousand feeble-minded children in the United States, although it must be appreciated that of this number only one hundred thousand are genuinely mentally deficient and should be treated in institutions instead of public schools. If, then, investigation should show that the German percentage, six per cent., would apply to all our defectives, there would be in the United States forty-eight thousand defective children with speech defects. Ninety-four cities in the United States have special classes for defectives, forty-six make special provision for the deaf and semi-deaf, and three have classes for stammerers, stutterers, lispers, and the dumb.

The economic cost of speech defects is registered in the limitations of occupations that are available for individuals who have speech deficiencies. The more pronounced the defect, the more limited the field of activity. Few employers desire deaf-mutes and their industrial situation is most difficult. Law and medicine, or even the ministry, are open to those talented individuals who have risen above their speech limitations and have been able to submerge their sensitiveness and self-consciousness so that their self-expression depends upon what they have to say rather than the way they say it.

Where feeble-mindedness is the basic condition, the occupation is naturally limited by the scale of intelligence to which the individual child can rise. In the New York Institute for the Deaf and Dumb, instruction is given in the shoe shop and tailor shop, while carpentry, printing, gardening, and similar occupations are made available. State institutions for the deaf and dumb require five to seven years of training at a per capita cost of three hundred and twenty-five dollars per year. It has been estimated that one in every twenty-four hundred of the population in the United States is a deaf-mute. This would indicate that there are about 37,500 deaf-mutes in the United States. This would mean that the mere cost of education in the state institutions for all of these deaf-mutes would cost approximately twelve million dollars per annum.

The prevention of industrial accidents requires that all workmen with speech imperfections should be kept out of positions that require quick utterance or that might involve the necessity of sudden expressions of warning to fellow workmen. The relation of speech defects to the cost of industrial accidents has been hinted at in those reports which attribute a part of the cause of accidents to the inability of employees to speak the prevailing language of the factory, mine, or shop.

The importance of discouragement, anxiety, family distress, embarrassment, diffidence, and shyness upon the development of high moral character cannot be estimated. Wherefore, among delinquents, speech deficiencies are noted with greater frequency than among the normal population. This may be due possibly to the fact that there is a greater amount of feeble-mindedness among delinquents.

According to the United States Commissioner of Education in 1910-11, there were fifty-seven state institutions for the deaf containing 10,740 pupils, only 456 of whom were of high school grade. The total cost of these institutions for one year was $3,439,101. The United States possess fifty-five public day schools for the deaf with an enrollment of 1,607 children, while twenty private schools possess 396 pupils. The single public school for the deaf in New York City registered 220 children and cost for 1909-10, $25,000.

It is important that the education of the deaf-mute should be begun early. While home instruction should be begun at two years, the child should be placed in school during the period of life when speech is most easily acquired, before seven years of age. The attempt to correct speech defects after the age of twelve adds greatly to its difficulty.

The British Royal Commission has estimated that each feeble-minded individual costs the state about ten thousand dollars. Figures relating to the number of feeble-minded individuals are mere approximations. Scotland is said to have one to four hundred of the population, England one to two hundred and seventeen, Ireland one to one hundred and seventy-five. Goddard has estimated the ratio to be one to three hundred in New Jersey. The Letchworth Site Commission concluded that there were about 12,300 mental defectives in New York State. Recent figures apparently indicate that there are three hundred thousand feeble-minded people in the United States. Feeble-mindedness with its increased mortality, particularly with the exceedingly high mortality among imbeciles and idiots, involves a decrease in the number of defectives with speech deficiencies who grow to adult life. The lower the mentality of the individual, the less resistant is the physical stamina. For this reason the number of

speech defectives to be noted during adult life is far less proportionately than during the period of infancy and childhood. To support feeble-minded individuals in State institutions costs about $161.20 per annum. The computation does not differentiate the actual cost of speech education, although it is apparent that self-expression through speech is the principal factor to constitute the mental defective a social asset.

The relation of speech defects to normal delinquency has not been determined, although it is possible to appreciate that speech defects if interpreted as closely related to mental abnormality, probably plays some part in the problems of delinquency. In 1911, twenty-seven State institutions maintained 19,672 feeble-minded at a cost of $4,202,664, while eighteen private institutions cared for 997 individuals at a cost of $301,716. In the ordinary public school system, the educational cost for speech defects of moderate degree has not been estimated. A special teacher is necessary, an ungraded class is important, and the development of normal speech must be facilitated through personal analysis of the underlying causes of the speech deficiency. It is vitally important both for the benefit of the individual child with a speech defect, and for the rest of the children in the class, that special classes for stutterers, stammerers, and lispers should be maintained with a view to developing normal speech for them.

Finally, in estimating the economic importance of speech defects, I can but repeat what I have already stated. The actual cost of speech defects to society cannot be estimated at the present time in dollars and cents. The limitations of self-expression is a loss to the individual and to the community. Speech defects which interfere with the expansion of consciousness along the lines of culture and education with a view to developing useful citizenship decrease the social worth of the individual and rob the community of the full fruits of human mentality. As a medium of social intercourse, speech is the maximum factor. Only through the voice has the history of the past, before the days of writing, been given to us. To be a normal being, normal speech is a prerequisite.

230 West Ninety-seventh Street.

## THE IMPORTANCE AND VALUE OF THE INVERTED T-INCISION IN VAGINAL SURGERY.

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When a transverse incision is made in the anterior fornix above the external os below the lower border of the bladder, and through this incision the bladder is separated from contact with the anterior wall of the cervix and uterus, the vesicouterine fold of peritoneum is reached. This must be perforated or incised in order to enter the peritoneal cavity. If, for diagnostic purposes, one desires to look at this pouch of peritoneum and see if blood in the pelvic cavity shimmers through, then this transverse incision suffices. If one is dealing with a multipara and with a uterus which descends readily one may, through such a transverse incision, enter the peritoneal cavity, deliver the uterus, and do some of the various operations on the adnexa. If one is to do a vaginal hysterectomy, this transverse incision, continued entirely around the cervix, enables one to remove the uterus without abdominal incision.

If, however, one wishes to fix any part of the uterus to any part of the vaginal wall at a point higher than the transverse incision, one must separate the bladder in part or in whole. If one wishes to fix the upper part of the fundus to the lowest part of the anterior vaginal wall for the correction of cystocele or retroflexion by the so-called Dührssen method, the bladder must be separated from the entire anterior vaginal wall. If one wishes a roomy space through which to work, if one desires to obtain a splendid exposure of the vesicouterine fold of peritoneum, and to open this fold with the aid of sight, one must add a longitudinal incision to the transverse. If we wish to obtain more ready approach to the lower area of the uterus in the performance of the technically most difficult vaginal hysterectomy; if we wish to hold the bladder out of harm's way in performing this operation, and if we wish to have more room for delivering the uterus before or after morcellement, we must add a longitudinal incision to the transverse. *If we wish, after performing a hysterectomy, to attach the lateral flaps of vaginal mucosa to the broad ligaments, in such a manner as to hold up the bladder as if in a hammock; if we wish to avoid the subsequent occurrence of cystocele*, we must add a longitudinal incision to a primary transverse one. If we wish a clear exposure of the vesicouterine fold of peritoneum, in order to diagnose the existence of an ectopic gestation without opening this plica, or with opening of the plica, or if we wish to remove an ectopic gestation by this route readily, and by the aid of sight, we ought to add a longitudinal incision to the primary transverse one.

The longitudinal incision is necessary to obtain separation of the bladder from the anterior vaginal wall throughout the greatest portion of its extent. The transverse incision is necessary to amplify the area of entrance into the pelvis obtained by a longitudinal incision, but there are more important reasons for its use. With the transverse incision, we readily separate the bladder from the anterior wall of the cervix and uterus *without the slightest risk of perforating the bladder*, and we readily reach the vesicouterine fold of peritoneum, which is so important a landmark, and which is readily recognized by the sense of touch and by sight. Starting out from the middle of the upper margin of the transverse incision and with the bladder separated from the uterus, we have a point of entrance into any level between the vaginal mucosa and the bladder mucosa covered by muscularis. We know the situation of these two tissues, we know with certainty that we can cut and pass between the two, we can choose the depth to which we wish to go, and leave as much of that elastic and connective tissue, situated between the vaginal mucosa and bladder, attached to either of these two as we wish. In other words, we can make the vaginal flaps thin or thick, we can separate the bladder and leave it covered by little or much of the interposed fascia. We can do this with the various planes exposed to view. We can, by inserting the finger under the bladder, make such use of the sense of touch, that the longitudinal incision can be made of any length, and the bladder can be dissected to any desired extent *without the faintest danger of perforating the bladder*.

After all, it is the bladder which is the important preliminary organ which we have to bear in mind, and *I have no doubt but that failure to attack this bladder problem in an easy and safe manner is responsible to a great degree for the failure of many men to take up this method after observing it, or to continue it after attempting it.* The question is simple enough. Our mode of approach is between the bladder and the uterus. If we pass safely between these two organs, if we make the right sort of incisions, if we use simply ordinary care to do no injury, we have as ready, as safe and as practical a means of entering the pelvic cavity as one could possibly wish. Certainly as roomy an approach is before us as many surgeons have with their individual forms of incision in the performance of innumerable abdominal operations.

Any intraperitoneal operation finds its dangers in injury to some structure or viscus which has a lumen. If one leaves no blood vessel untied, if there is no opening (which will not heal) in intestine, or bladder, or ureter, operations on the pelvic organs are generally successful. Injury to any of these structures may occur in the performance of an abdominal operation of a gynecological nature. The same holds true by the vaginal route. If no blood vessel be left untied, if the ureters are not injured, if the intestine is not injured, if the bladder is not perforated, the operations are usually successful, so far as recovery is concerned. In other words, care is essential by either route. I hold that there is less risk of injuring these structures in the operations which I consider appropriate to the vaginal method than by the abdominal path. Aside from this, many of the operations are performed with greater ease, the patients accept this path with less reluctance. In the case of the very obese, the advantage of a possible vaginal choice is great. Besides, there are several operations, especially those designed to cure cystocele and the various degrees of descensus uteri down to the degree of total prolapse, which produce better and more permanent results than any abdominal methods yet devised. Once the uterus is exposed to view, its delivery into the vagina or the attack upon the uterus, or upon any diseased structures of the inner genitalia, is directed by the same principles, mental and mechanical, as are made use of in the performance of those operations through the abdominal wall. Since the space through which the work is done depends upon the character of the introitus and the size of the opening in the anterior fornix, we are forced to consider just these two points. As a general proposition it goes without saying that in a unipara or multipara the introitus provides a larger area of entrance than is the case with a nullipara. The same holds true of the anterior fornix where the opening which we make cannot be so large nor so readily accessible in a nullipara as is the case with multiparæ. Hence one uses judgment in selecting the favorable cases, and on the proper exercise of this judgment depends to a great degree the readiness with which the operation may be begun and completed. The more readily the cervix can be pulled down toward the vulva, the more easily may the operation be carried out. With these various considerations in mind, it is apparent that, to enter the peritoneal cavity and to perform any of the various types of gynecological operations, the bladder must be separated from contact with the vagina and uterus and must be held out of the way of injury while the operation is being done. To accomplish this separation with the greatest ease, with the greatest certainty of avoiding injury to the bladder, with the greatest exposure of the peritoneum, and with the association of the widest space through which the various steps of the operation may be performed, the inverted T-incision is a procedure of such vital importance that I can say with the utmost confidence that, he who tries it and masters it will find opened to him a variety of operations the character and value of which is only now beginning to be recognized.

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## SOME REMARKS ON BRONCHIAL OR TRUE ASTHMA.*

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THE GLEN SPRINGS, WATKINS, N. Y.

If one glances even casually at a description of asthma in any of the leading textbooks on medicine he is immediately struck by the curious fact that anything under heaven can excite an attack and conversely anything can cure it. Consequently a person with an imagination will promptly decide that a disease of such varied etiology and heterogeneous treatment cannot as yet be thoroughly understood, and he is quite correct—in a sense. Asthma has existed as a clinical entity as long as medicine itself and it is not hard to imagine that some of the curious "seizures" of which we read in ancient literature may have been the spontaneous onset of such an attack; perhaps even an occasional "miracle" may have been performed and an apparently dying man restored to health and happiness in the twinkling of an eye by someone with more intelligence than the average and a desire to impress the multitude.

Asthma may then be described as paroxysmal dyspnea, largely of the expiratory type, of more or less sudden onset, and variable though short duration. As the dyspnea is essentially of the paroxysmal type we can at once exclude from consideration such so-called asthmatic conditions as those developing in late cardiac and renal disease, and confine ourselves to true or bronchial asthma with its allies —hay-fever, rose-cold, paroxysmal sneezing, and spasmodic bronchitis of children. All these seem to have a common basis in patients of the so-called nervous or neurotic type. All are of a paroxysmal nature, with sudden onset and a tendency to recur at more or less definite intervals, and none is in itself fatal, although any may indirectly lead to a fatal issue.

Asthma is found in all climates, all races, and at any age—twenty-eight days being the youngest recorded case. Hyde Salter's series of 225 showed that over thirty-one per cent. developed before the age of ten, forty-five per cent. before twenty years were reached, sixty-two per cent. before the thirtieth year, and eighty-two per cent. under forty.

The disease can develop in either sex, but curiously enough is twice as frequent in the male, thereby being a powerful argumentative weapon in the hands of those who say that "the female of the species is less nervous than the male." While hay-fever and rose-cold have, as their names imply, a specific time of year to appear, asthma itself is much more frequent in the fall and spring. As might be expected this distressing disease appears in family groups frequently and many times, although we may not find out and out asthmatics, we at least discover

*Written for the Schuyler County Medical Society, January 28, 1913.

a neurotic tendency in other ways, such as urticaria, nervous vomiting and diarrhea, polyuria, and "indigestion," if I may be pardoned for the use of so unscientific a term.

Ever since 1872, when Voltolini started the ball rolling by apparently curing eleven cases of asthma by the removal of nasal polypi, the medical profession has been searching for the cause of this most annoying condition in and about the nasal mucosa, so far, however, with rather unsatisfactory results, although just enough progress has been made to encourage further effort in this direction. As a damper though on the enthusiasm of the rhinologist who believes he can cure it by operation, cases have been reported in sufficient numbers to make the statement true beyond peradventure that asthma is frequently developed by, or a pre-existing attack made worse by, the removal of septal spurs, turbinates, or polypi. However, both contentions can be reconciled if one exercises a little thought, it being quite conceivable that in the one case a hypersensitive area may be removed at operation, while in the other an area that has previously given no trouble may become oversensitized and excite reflexly an attack of asthma. This is partly hypothesis, but is somewhat borne out by an experiment performed by Lazarus, who was able to excite bronchial constriction by the application of a mild electrical current to the nasal mucosa. Moreover, it is well known that dust, pollen of hay and some plants, and often emanations from the cat or other animals, can bring on one of these annoying seizures.

Anatomically considered, asthma is a very simple disease indeed if we confine ourselves to it alone and leave out of consideration its results. Commonly there is found dilatation and thickening of the smaller bronchial tubes, distention of the air sacs, atheromatous changes in the branches of the pulmonary artery in the lung, and frequently moderate dilatation of the right heart. Curious masses of mucus containing eosinophilic cells and often the double pointed Charcot-Leyden crystals are constant. These Curschmann's spirals, as they are called, can be teased out or will separate themselves if placed in a glass of water and are found to be complete casts of the finer bronchial tubes and bronchioles.

As to the actual morbid conditions that can bring about such changes there are at least two theories of sufficient merit to be considered. I refer to a spasmodic constriction of the small bronchi and a rapid turgescence or tumefaction of the mucosa. The first has by far the greater number of supporters, not by any means the least among them being Hyde Salter who says in support of it: "In the first place, the sudden induction and remission of the asthmatic paroxysm is consistent with the supposition; in the second place, there is abundant proof that the air in the lungs is locked up, and cannot be got in or out; there is plenty of air in the chest, percussion is even overresonant, yet the patient is as unable to drive air out as to draw it in; he can neither inspire nor expire; he cannot discharge breath enough to whistle, to blow out a candle, or to blow his nose. The muscles of respiration tug and labor to fill and empty the chest, but the chest walls remain almost immovable; the inspiratory muscles cannot raise them, the expiratory cannot depress them. On listening to the chest we find corroborative evidence of the stagnation of air. The respiratory murmur is in a great degree lost. This absence of respiratory sound accompanied by violent respiratory effort is one of the most striking and suggestive of the facts of asthma."

How can we explain it except by supposing that there is some bar to the ingress and egress of air; and what can this bar be, unless it be spasm of the bronchial tubes? It cannot be inflammatory thickening of the mucous membrane lining them; for the sudden almost instantaneous establishment and remission of the dyspnea is incompatible with this. It cannot be mucus plugging the tubes, for the attack will often come and go without any expectoration whatever. But we have still more positive and precise evidence of the circumscribed narrowing of the air-tubes in the musical sounds that are present in asthmatic breathing. This symptom has all the certainty and precision that characterizes physical phenomena; and it shows that the air-tubes are the seat of constrictions which throw the air passing through them into vibrations and convert them into musical instruments; since the musical sounds are multitudinous, the points of constriction must be many; since they are constantly varying in locality and character, the constrictions of the tubes must be undergoing similar change. Experimental evidence, too, supports this theory, as Brodie and Dixon, in a work published in 1903, show that constriction of the small bronchi brought about by stimulation of the vagus produces distention of the air sacs similar to that occurring in asthma.

The second theory, that of temporary turgescence of the bronchial mucosa, sounds well, but histology teaches us that while the nasal mucous membrane is vascular and contains much erectile tissue, that of the bronchi is very poorly supplied with blood and could not in the very nature of things respond in the same way to an irritant. Moreover no inflammatory change has ever been demonstrated in the bronchi of a person dying during an attack of asthma.

Clinically this disease is so characteristic that it would seem unnecessary to enumerate its symptoms, but to refresh our memories and to make this paper complete in that essential, I will attempt to describe a typical attack. Usually at night, or in the early morning hours, the patient suddenly awakes with a feeling of oppression in his chest, and in a few moments he is gasping for breath. He cannot remain prone but is forced to sit up or even to rush from the bed to the open window; his head is fixed by firm contraction of the neck muscles which stand out like whipcords; his shoulders are hunched up, and his hands grasp firmly anything he can get hold of, like the back of a chair, foot of the bed, or window-sill, to assist in the tremendous effort for breath. The face is either extremely pallid or dusky red to black from accumulation of carbon-dioxide in the blood; the eyes bulge, the nostrils dilate with each attempted inspiration, and the skin is covered with a cold, clammy sweat. The pulse is usually normal and the temperature is never raised during an uncomplicated attack. Gradually the spasm relaxes and the patient sinks back into a resting posture, often going quietly to sleep after the passage of a large quantity of pale urine. During the attack physical examination will disclose a bulging chest wall which plunges but actually moves very little with each respiratory effort; the inspiration will be found short, gasping, and abortive, while the expiration is four or five times as long. Percussion is hyperresonant throughout; there are practically no breath sounds; but many soft, far-away, long-drawn-out sibilant râles are heard with each attempt to empty the lungs.

It must not be thought that such a description applies to each and every attack; this is far from the case; however, it may be said that they differ largely in degree, and under most circumstances the diagnosis is easily made. It is a curious fact, noted by many observers, that if the paroxysm lasts long enough a patient will often apparently fail to appreciate that it is over and will continue to gasp and plunge for some moments even though he could breathe with perfect ease. In this connection I recall the first asthmatic I ever saw who habitually did just this thing, and would with a start wake to a realization of the fact that she was well and would then settle back to enjoy life once more.

Hay-fever being the most common and the worst of asthma's allies deserves some mention here, as it occasionally alternates with true asthmatic attacks and is frequently found in the family groups previously mentioned. This disease is characterized by severe frontal headache, coryza, and oppressive wheezing quite comparable to that of the more important condition. It, too, is most common in early life, but is not by any means confined to young people. A physician of my acquaintance never had an attack until he was past 30, but now suffers from it during the entire summer unless he goes to a cooler climate.

The prognosis then may be summed up in a few words. If taken in time, in early life before the nervous system has, we may say, the habit, it is often possible by painstaking care to train the little patient in the way he should go and entirely cure this most distressing condition. Later in life the hope of permanent relief is remote and one's attention must of necessity be directed toward alleviation rather than cure.

The treatment may be divided for our purposes into three stages—prophylactic of the attack itself, and between attacks. The first includes good, wholesome food, plenty of fresh air, proper bathing and exercising, care of the bowels, and prompt attention to any abnormal condition that may develop, especial attention being paid of course to the nose and throat.

The treatment of the attack itself is purely medicinal and should consist of the most rapid known means of relief. Unfortunately all patients do not respond to the same line of treatment and valuable time is frequently wasted hunting for a remedy for the case at hand. In the physician's hands nothing works with anything like the magic charm of morphine hypodermically and nitrite of amyl by inhalation. These may either be used in conjunction or separately, but if morphine is to be relied upon always remember to give enough and not putter around with minimal dosage. Chloroform is frequently recommended and does well for the moment but often we are disgusted to see the wheezing start again as soon as the effects of the drug begin to wear off. Adrenalin chloride solution too is used by many physicians and apparently with excellent results in some cases, but I have never had any success at all the few times I have tried it and prefer the other and surer remedies. If exhaustion is extreme or collapse threatened, a cup of strong coffee will often fill the bill admirably, but one should not hesitate to use strychnine, caffeine, camphor, or any other stimulant he may have at hand if he thinks it needed. Mild attacks are frequently relieved or, if taken in time, aborted by the use of various fumes among which belladonna and stramonium probably rank first. The most convenient method of administration is in the form of cigarettes of which there are several well known brands on the market.

Treatment between attacks is climatic, hygienic, and medicinal, and should always be insisted upon by the conscientious physician. It is a well-known fact that diametrically opposite climatic conditions to those under which the patient lives will oftener than not cure a case of asthma, at least for the time being. With this idea in view it is well to investigate carefully the surroundings and then suggest a number of possibilities, always impressing upon the sufferer that he must keep going until he strikes the right place. Strangely enough small, smoky cities, the smokier the better, seem to be the places where most asthmatics eventually turn up. Many of us would suffer the torments of the damned breathing in the awful mixture that they seem to thrive on. The condition of the body is of paramount importance to these people and one must impress upon them the necessity of daily bathing, care in the selection of the food, proper mode of dress, daily evacuation of the bowels, and above all plenty of outdoor air. Breathing exercises combined with gymnastics have been recommended and many physicians strongly advise their patients to take a course of carbonated brine, or Nauheim baths, as they are called. This is not such bad advice either and often works wonders, particularly when the right heart has begun to dilate under the excessive strain.

Of the drugs, according to Goodhart and Spriggs in Allbutt and Rolleston's "System of Medicine," there is nothing to compare with arsenic in the form of Fowler's solution given three times a day in small dosage for periods of three or four weeks with intermissions of equal length. Next to this a combination of strychnine and the iodides appears to be the favorite prescription and perhaps is more generally used than the other although there are not such enthusiastic claims made for it. Phosphorus and the bromides have their supporters and undoubtedly do good in selected cases. Among so-called specifics pollantin may be mentioned and in at least one case of hay-fever that I recall it seemed to work wonders, but I have known it to fail often where results were most confidently expected. One other line of treatment perhaps should be considered here which offers a possibility of results far and away beyond anything else I know of. I refer to autotherapy as elaborated by Duncan of New York. I will not attempt to describe this most interesting process but will simply refer to his articles in the MEDICAL RECORD and the *New York Medical Journal.*

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**Cholecystitis and Cholelithiasis in Childhood.**—A. v. Shautz notes the extreme rarity of these conditions in early life. Only fifteen cases of gallstones occurring in children have been reported in the literature. The clinical picture is the same as that observed in adults. Pure cholecystitis without stones is still less common.—*Centralblat für die Grenzgebiete der Medizin und Chirurgie.*

# SCIENTIFIC SANITATION IN RURAL HEALTH WORK.

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It is very evident, not only to those engaged in public health work, but to every physician, that sanitary science is going through a transition stage, and that the more we are finding out about the real cause of disease, the more are old methods of fighting it disappearing. Already we are far ahead theoretically in this matter and know just exactly how to limit the spread of a number of diseases, but to practice effectually what we know in theory, we need the assistance and co-operation of an enlightened public, yet it seems hard, very hard for the public to give up their ancient ideas. I recall a case which well illustrates this: Some years ago I was talking on typhoid fever at a farmers' convention, under the auspices of the Department of Agriculture, and I had taken great pains to tell the audience that human discharges are the only real dangerous thing in the transmission of this disease, and that if these infected discharges were kept out of drinking water and food, there would be very little typhoid fever. After I had finished one old gentleman got up and said he had enjoyed my talk very much and wanted to add a word. He said that he knew a family where they had sickness of some sort nearly all the time; their neighbors became alarmed for them and finally prevailed upon them to clean out the old well; and what do you think they found? Two dead frogs and a dead snake. "Now, is it any wonder," the old gentleman said, "that they had sickness? We cannot be too careful of the drinking water." So my endeavors had fallen flat, very flat indeed.

Garbage, sewer gas, filthy gutters, and ponds are all accused by the public of causing untold woes and sickness, but, of course, have really nothing to do directly with causing disease, and very little indirectly. In rural work we have great trouble with the pig-pen nuisance, and I have heard the pig-pen accused of causing almost every disease we have. Of course, pig-pens are a nuisance, especially in thickly settled communities, but it is just as well to remember that they do not cause any disease whatsoever. Here is a little story somewhat on this point: One of our health officers, a layman, of whom I had previously inquired the probable cause of a house epidemic of typhoid fever, meeting me some time after, said very solemnly: "Doctor, I have at last found the cause of that typhoid fever. They keep a swill barrel in the cellar."

One case of measles or diphtheria in a school, especially among those who doctor themselves, is of vastly more importance to the public health than a damp, dirty cellar or an overflowing privy, but it is very hard to make the public believe this. It is, nevertheless, beginning to be pretty broadly accepted that the spread of the common contagious diseases is brought about by the "carrier" and the neglected mild case. If we could only get hold of these, sanitary work would become very simple and effective. In the country districts the mild case which has no doctor causes most of the trouble. In the city, during nine months in the year at least, daily school inspection has done much to eliminate these "missed" cases, but in the country school system such supervision is impossible at present. In Pennsylvania, however, under Dr. Dixon's wise guidance, we are trying to overcome this sanitary loophole by educating the teacher and the parents, supplemented by special school inspections when necessary: educating the teachers to be on the watch and to send home every child apparently sick, and to notify the proper authorities if suspicious of a contagious affection; then in addition, educating the parents to consult a physician for even minor ailments, especially when symptoms point to any of the contagious and infectious diseases; very often, by measures like these, in fairly intelligent communities, it is very easy to keep down epidemics. I recall an instance in which a case of diphtheria appeared in a certain country school, and the teacher reported that some other children had "sore throats." So we promptly examined the throats of all these children and sent three home, who had slight fever and inflammation of the fauces; two of the three developed diphtheria in a few days, but they were at home, isolated and not spreading contagion among the rest of the children. It is needless to say we had no epidemic. I recall another instance in which this emergency inspection did much good. In a certain town of 5,000 inhabitants there was a number of cases of a slight eruptive disease, called "frizles" by some of the local doctors. Finally the local health board asked help from the State Department of Health. We immediately went through the schools and examined about 300 children. We found a number who were just about recovering from a mild attack of scarlet fever, and we found two cases of the fully developed disease. All these cases were quarantined, the schools disinfected, and the epidemic of "frizles" vanished.

In the matter of limiting the spread of disease by milk, considerable progress is being made by restricting the sale unless proper precautionary measures are used, such as will surely keep the pathogenic germs out of the milk, but right here our work is imperfect on account of the "missed" case. Here is an actual instance of which I am sorry to say, there are some duplicates: A man who was conducting a small dairy farm became sick. He didn't consult a doctor, but kept at work. Finally a number of people using his milk developed typhoid fever and when an investigation was made the dairyman himself was found to have had this disease in a mild form. As his case had not been reported to the health authorities, no restrictions were placed on the sale of his milk, and as a result thirty-four people developed the disease and several died. Cases like this emphasize the fact that we cannot have effective health administration, except by the aid of an intelligent public educated in the means of the transmission of diseases and educated to consult a physician for lesser ailments, or at least to so conduct themselves as not to transmit a possibly contagious affection.

A great deal of our rural typhoid fever, by the way, is due to "contact" on account of less attention to, and lack of facilities for, personal cleanliness, which exist in city houses of the better class. I have one record of thirty-five cases occurring in six houses: there should have been only six cases at the most, but carelessness and neglect of the simple ordinary rules of cleanliness made the others. I recall a bad house-epidemic of this disease in a certain locality last year where there were fifteen cases in two houses—all developing one after another by "contact" from one or perhaps two primary cases. The environment was so bad that I took a State

health officer and a nurse and instituted a general cleaning up. For although it is questionable if typhoid fever germs will live long in filth, the habits which permit filth to accumulate account for much of our rural typhoid fever. For a long time that day I missed the health officer and finally found that he had been tramping all over the farm hunting something to account for the typhoid fever, and had he found a dead cat or a sick dog, I feel sure he would have come to me with glee. And then right there I saw the old and new hygiene—the health officer hunting a dead cat or a sick dog as the cause of the illness; that was the old method, reaching far back to the Middle Ages. And the nurse in the kitchen showing the attendants how to keep the hands clean and how to disinfect the discharges of the sick; that was the new method, the sanitation of to-day and to-morrow.

While we want to get rid of filth more than ever, on account of its being a nuisance, a breeder of flies, and a breeder of bad habits, the day of the dead cat, the sick dog and the swill-barrel as causes of disease is fast passing away, and in a few more years we will wonder why we were ever so stupid or so antiquated.

## A CASE OF TRICHINOSIS WTH AUTOPSY.*

By E. P. BERNSTEIN, M.D.,
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In reviewing the literature of this disease for the past few years, we are impressed with the fact that either the condition is much more common than formerly or our diagnostic aids have made its recognition so much easier that there is an apparent increase in the number of infections by the *Trichina spiralis*. Probably both factors play a role in increasing the number of cases reported. We have but to remember that the foreign element of our population is constantly increasing—prominent among whom are the Italians and Austrians—both heavy consumers of raw or smoked ham. We must also not forget that beef, geese, dogs, and rabbits have been the means of infection in man. Furthermore, the recognition of this disease has become more easy through increased and more refined laboratory methods.

From a clinical point of view the symptom complex is well established, but the pathology of the disease is still somewhat unsettled—especially that branch dealing with the mode of passage of the embryos from the intestinal tract to the muscles.

Several facts which have been well established but are too often lost sight of, should be emphasized, for they easily explain why the stools have never contained the trichinæ, and also why the parasite should not be expected in the blood at all times.

Staubli has proved that the adult trichinæ cannot produce the disease. It is conveyed from host to host only through the embryos. This fact has too often been forgotten. He showed that if rats developed an acute intestinal trichinosis after eating flesh containing a great number of embryos, and this condition became severe enough to cause the rat's rapid death, then this animal was no longer a factor in the propagation of the disease, for if its body musculature and organs are in their turn eaten, they do not cause the disease, the rat not having had time to develop muscle embryos. These latter are the infecting agents.

Taken in food, the surrounding membrane of the embryo is dissolved by the gastric juice, and the parasite is now free to attach itself to the mucous membrane of the intestinal canal. Here copulation takes place at the earliest in from six to eight days, the embryo being transported through the lymph spaces to the blood vessels and finally to the muscles. The embryos are present in the circulating blood for about three weeks. Since they are never discharged into the lumen of the intestine, it is not to be wondered at that no author has as yet succeeded in finding them in the stool. And yet, how often is a specimen sent to a laboratory with the request that it be examined for trichina embryos! The uselessness of the procedure is apparent.

Also, since the embryos are in the circulation for but three weeks at most, we should not be surprised at our failure to find the parasite in the blood in long standing cases—and yet in just such cases we are often called upon to employ the technique of Herrick and Janeway for their detection.

The absence of embryos in the blood in the case under consideration was proved not only by the failure to find them after a careful and prolonged search in the hemolyzed, centrifugalized blood, but also by feeding the sediment from ten cubic centimeters of fresh, defibrinated blood to guinea pigs who remained healthy for four weeks and were then killed and found entirely free from the disease. The above result was to be expected, since the case was fairly advanced when admitted to the hospital.

The case is of interest as it shows the wide distribution of the embryos in all of the voluntary muscles, and their absence in the involuntary muscles of the heart and intestines.

The patient, an Italian, was admitted to the Lebanon Hospital on the medical service of Dr. A. Mayer. His present history dates back some ten days, when he had several severe chills followed by a rise in temperature, generalized pains, vomiting, and diarrhea. His physical examination on admission showed nothing pathological except in his musculature—his forearms were flexed on his arm, and it was impossible to extend them passively or actively—attempts to do so causing excruciating pain. His mouth could be opened for only about one-half an inch, while he was unable to protrude his tongue beyond the line of his teeth. Pressure over any of the muscles of the extremities, chest, or head caused severe pains. His temperature ranged between 100° and 104°, with a pulse rate of 100 to 112.

Urine analysis constantly gave a strongly positive diazo reaction. This test is too often neglected in the diagnosis of trichinosis, and yet it is a very valuable help, being almost always positive. Examination of feces for ova was negative.

Blood examination showed a leucocytosis averaging about 17,800, with an eosinophilia of 7½ per cent. Blood culture was sterile. A careful search for ova in the blood was negative, while animal experimentation in the attempt to convey the disease from the patient's blood to guinea-pigs through feeding was also without result. Since these examinations were performed long after the embryos had left the circulation, the failure to find or convey them is not to be wondered at. A section of the left gastrocnemius muscle, teased in normal saline solution, showed numerous motile specimens of *Trichina spiralis*.

*From the Pathological Laboratory of Lebanon Hospital.

The patient died after sixteen days in the hospital, and the post-mortem examination was performed four hours after death. It revealed no gross pathological lesions in any of the organs.

Microscopically, the trichinæ were found in all of the voluntary muscles, including the intercostals, psoas, sternocleidomastoid, and diaphragm. They were, however, most numerous in the musculature of the tip and base of the tongue. As mentioned before, the intestinal and heart muscles were negative, as were also the liver, kidneys, suprarenals, spleen, lungs, and pancreas.

In conclusion I would again emphasize the following facts:

1. Examine the urine for the presence of a diazo reaction.

2. Do not expect to find ova in the stools of an established trichinosis case.

3. The parasites are in the circulation for but three weeks at most.

4. The ova are deposited in the voluntary muscles only.

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## REPORT OF A CASE OF COMPLETE TRANSPOSITION OF THE VISCERA.*

By S. HORWITT, M.D.,

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"According to Vierordt, a case of undoubted dextrocardia has not yet been observed—or at any rate has not yet been confirmed by an autopsy" (Birnbaum). The cases where the heart was found intravitam by physical examination to lie on the right side were mostly acquired conditions due to pathological processes in the neighboring viscera. Left pyo- or pneumothorax will push the heart over to the right side of the sternum and pathological contractions in the right chest will pull the heart to this side. By dextrocardia proper is understood a congenital malformation. It is usually a part of the condition known as situs inversus, where all the viscera, thoracic, and abdominal are placed on the wrong side of the body.

Cases of situs inversus arouse our interest on account of their rarity alone. Then there are possibilities of the condition acquiring more importance than that of merely being a freak of nature. For instance, an attack of cholecystitis or of appendicitis in such a subject would probably for a time puzzle the surgeon who relegates the use of the stethoscope to his medical confrère.

In the cases of complete situs inversus, to which our case belongs, the disposition of the viscera, both thoracic and abdominal, is "a looking-glass image" of the normal or usual condition. It is obvious, therefore, that this abnormal condition presents no handicap to the proper physiological functioning of any of the organs. In fact, this unusual state of affairs is ordinarily found accidentally in patients who present themselves to us for ailments common to normal individuals.

The case we are to report, for instance, came to the hospital for pneumonia. Following is the history:

W. D., colored, twenty-six years of age, entered the Lebanon Hospital on February 9, 1913, on the service of Dr. R. Stein. Family history, irrelevant. Previous history, never been ill before. Present history. About four days before admission patient was seized with a chill lasting about half an hour, followed by fever, cough, and pain in the back of his chest. Bloody expectoration appeared. Appetite poor, bowels constipated.

Physical examination on admission showed the general condition fair; patient well nourished and developed; dyspneic.

Chest.—Left side, posteriorly, dulness, bronchial breathing, bronchophony, many moist râles over this area; a few moist râles at the right base.

Heart.—Right border, 3½ inches to right of sternum; upper border, third space on right side; left border, at left border of sternum. Apex beat in fifth right intercostal space, 3½ inches to the right of the median line. First sound of poor quality, accompanied by a systolic murmur which is transmitted to the right. Reduplication of first sound and accentuation of the second pulmonic. Pulse regular; no sclerosis of vessels.

Liver, dulness begins at fifth space on left side, flatness ending at free costal border. Spleen, percussed on right side, not palpable.

While in the hospital the patient ran an average pneumonic course. On the sixth day the fever commenced to decline by lysis. On the seventh day he developed edema of the cervical tissues, and on the ninth day he died, with dyspnea as the dominant symptom.

*Autopsy* February 12, 1913.—Fairly well nourished man. Scalp, skull, meninges, and brain, negative. Neck looks brawny. Cut surface exudes a clear serous fluid with which the areolar tissues are infiltrated. The parts involved include the anterior and lateral aspects of the neck, and also the floor of the mouth. There was no edema of the glottis or of the epiglottis.

Chest.—Left lung (corresponding to normal right) showed a middle lobe which was but imperfectly marked off by a vestigial fissure from the upper lobe. Right lung (corresponding to normal left) presented two lobes. Left lung showed consolidation of the upper and greater part of the lower lobes.

Heart.—Pericardial sac appeared as a "looking-glass image" of the usual disposition and relationships. The vena cava superior was seen to lie to the right of the aortic arch. The aortic arch curved from left to right. The pulmonary artery lay at the right of the ascending portion of the arch, while its *left* branch coursed to the left and behind it. The innominate artery sprang from the arch, to the *left* of the trachea, while on the right side the subclavian and common carotid arteries arose from it. The remainder of the arteries and veins followed the same reversed arrangement.

Abdomen.—Here again the distribution of the viscera might be best depicted by picturing to oneself the looking-glass image of the usual distribution. The liver lay in the left hypochondriac and epigastric regions, the spleen in the right hypochondrium. The stomach was in the right hypochondriac and epigastric regions, the pylorus being to the left of the middle line. The duodenum lay with its convexity pointed to the left, and situated to the left of the vertebral column, while its concavity embraced the head of the pancreas, which organ passed over to the right. The ileum opened into the large intestines in the left iliac region, where also the appendix was situated. The course of the large intestine was reversed, the sigmoid flexure appearing on the right side, where it dipped over the pelvic rim to end in the rectum.

The explanation of this anomaly? Let us again quote from Birnbaum: "There are two possible explanations of these cases: (*a*) some condition inherent in the fertilized ovum and producing its results when the ovum is undergoing division into its two primitive blastomeres; or (*b*) some cause acting upon the ovum from without—in the great majority of cases still at the very early stage of its development. The exact nature of the cause is unknown."

Lebanon Hospital.

*From the Pathological Laboratory of Lebanon Hospital

**The Pigmentary Cirrhoses.**—G. Roque, J. Chalier, and L. Nové-Josserand conclude from their investigations that the pigmentary cirrhoses should not be considered apart from other pathological conditions associated with a ferruginous pigmentation of the organs of the body. In spite of the opinions of former authorities, the pigmentary cirrhoses have no special individuality, the iron pigment deposited in the liver being the result of an hemolysis.—*Revue de Médecine.*

# MEDICAL RECORD.

*A Weekly Journal of Medicine and Surgery.*

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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**New York, June 28, 1913.**


## NEGATIVE EUGENICS.

THE science of eugenics has barely been launched and yet even its most enthusiastic exponents are beginning to realize that practical results can come, if at all, only through the practice of its negative phase. It is obvious that, as much as it might be desired on scientific grounds, the methods of the stock-farm are inapplicable to human beings. But the study of heredity has established almost beyond any doubt that in man certain diseases, but more particularly defects, are transmitted from ancestor to progeny. This makes it of far more importance to prevent that transmission than to attempt to build up synthetically a finer but idealistic product.

Recent investigations in certain parts of New Jersey have disclosed the existence of veritable colonies of defectives, so that the famous Jukes family promises now to be duplicated many times over. Many States, having been persuaded of the hereditary character of defective constitutions and defects, have passed statutes permitting and providing for the sterilization, under certain conditions and safeguards, of the defective and the criminal inhabitants of public institutions—the latter on the principle that most criminals are defectives—in the hope that thus will the propagation of these "species" be prevented. The legality of this procedure has been attacked. In the defectives it is defended under the "police power" of the State as a measure enacted "to protect the health, welfare, safety, and even convenience of the public." In criminals it is opposed on the ground that it is "cruel and unusual punishment," and therefore against the constitutional restriction of the eighth amendment to the United States Constitution. The legal phase of this question is, however, still open, and must be finally passed upon before this practice can have universal application.

On the other hand, some very prominent scientists have expressed themselves as opposed to this practice on the ground that an individual himself defective, and perhaps born of the union of a normal and a defective parent, either immediate or ancestral in degree, may yet produce normal offspring, because, on the Mendelian doctrine, though the individual is himself defective or "recessive," he may have within him the dominant determiners of his normal ancestry, which alone may be transmitted under certain conditions yet little understood. In this manner, the defective or "recessive" characteristic in, and causing, hemophilia is transmitted only through the female offspring; and if there is no female offspring the condition necessary for the transmission of this constitution is not present, and is thus wiped out. Conversely, two normal individuals may have dormant within one of them at least, an ancestral "recessive" characteristic, which their union may transmit to one of their offspring in a patent form. This explains the reason for the birth of one defective in an otherwise normal and even highly developed family. And the opponents of sterilization contend that until something more is learned of the *method* of the hereditary transmission of defectives, sterilization as a public welfare procedure is not justified and is unscientific. Sterilization should therefore be carried out only with the view in mind of the possibility of sacrificing thereby the lives-to-be of normal individuals in the endeavor to prevent the inception of the lives-to-be of defective ones—if, indeed, future lives have a value. This form of negative eugenics is, however, limited in scope, and applicable only to the inmates of public institutions.

The form that is intended to affect the public more generally is the proposed requirement of those contemplating marriage to submit certificates of good health as conditions precedent to the issuance of license to marry. If this is universally carried out, it will throw another burden on the shoulders of the physician, whether he will be acting in his private capacity or as a public official delegated to make examinations. He will be called upon to pass upon a very vital matter in the organization of society. And further, his certificates will be deemed policies of insurance, so to speak, not only insuring against the existence of present patent or latent diseases or defects in the contracting parties, but also subsequent ones arising even from other causes. In so far as venereal diseases are concerned—against which the largest part of this propaganda is aimed—it may be comparatively simple, especially when the diseases are in the acute or subacute stages. But how many latent cases of gonorrhea escape detection, even after the most painstaking and scientific methods of examination, and in individuals who will not marry unless they are free from disease? Even recently active syphilis can be made to escape detection by the Wassermann reaction after a little antisyphilitic treatment, not to mention the many instances in which the reaction is negative in clinically positive cases not under treatment. Nor can incipient cases of tuberculosis always be recognized. Positive cases of insanity will escape the examiner if brought to him during a period of remission, or, in the paranoid types of insanity, when the delusion is not apparent or is purposely concealed. Again, in the case of epileptics, a sufficiently positive diagnosis can never be made if they are seen between the attacks, except when there is marked physical or mental deterioration from the frequency of seizures. But how can this requirement ever affect, even on the most liberal and the broadest construction, the individuals

who are themselves admittedly fit, but are "tainted" in their immediate or remote ancestry? To forbid them marriage would not be reasonable. In every case, however, where defect or disease would manifest itself after marriage, either in the individuals themselves or in their offspring, the physician would be under the gravest suspicion, and the integrity and competence of the whole profession would be attacked—at least by that portion of the public that seems ever-ready to hear the worst of medical science.

These factors must, therefore, be taken into consideration by physicians before they endorse unreservedly the dictum compelling all persons to subject themselves to a medical examination as the *sine qua non* of marriage.

## THE TREATMENT OF INTESTINAL STASIS WITH LIQUID PETROLEUM.

An extremely interesting discussion which had been in progress for several weeks before the Royal Society of Medicine ended on May 7, 1913. The discussion came about through the desire of the physicians and surgeons of London to thresh out Mr. Arbuthnot Lane's views as to the causation of that aggravated form of disordered digestion known as intestinal stasis. Lane's views are fairly well known in this country. Herz, Keith, and others contended at the discussion that these effects are not due to kinking but to a derangement of the ileocecal sphincteric mechanism. The arguments on both sides were plausible, but the matter was left in *statu quo*. A feature of the discussion was that several eminent authorities, including Lane, recommended the use of liquid petroleum in the treatment of this condition. In fact, Lane was the first, or one of the first, to draw attention to the value of this mode of treatment. Mr. George Rowell said that with regard to pyorrhea alveolaris, he would like to remark that he had seen complete cures by vaccines as well as by scrupulous local treatment, and that he knew of many cases in which the cure had been much aided by paraffin internally. Two of his dental friends of large experience made an almost routine practice of prescribing paraffin for these cases. Rowell went on to say that a large number of facts were being brought to light in various branches of medical knowledge which, when examined, were found to fit in with and to lend support to Mr. Lane's theories. The question of infant feeding might be alluded to as an example. In 1901 Dr. Eric Pritchard came to the conclusion that disease in infants, and much disease in after life, was largely due to overfeeding during the first year. This he held caused overdevelopment in the length of the bowel, such overgrowth often extending to many feet; there was no adequate room for the bowel, peristalsis was impeded, and delay in the passage of the contents of the intestine resulted. For the prevention and treatment of the condition he had given paraffin very largely, and, agreeing with Mr. Lane, was convinced that the constant exhibition of paraffin had a marked effect in both the prevention and the cure of tuberculosis. The testimony of Alfred C. Jordan, the medical radiographer at Guy's Hospital, was even more favorable as to the efficacy of liquid paraffin in the treatment of intestinal stasis, while Murray Leslie and Ernest Clarke were enthusiastic as to the benefits obtained by giving persons suffering from intestinal stasis considerable amounts of liquid paraffin. Eric Pritchard and G. A. Sutherland strongly recommended its use in the obstinate constipation of infants and children. In his book entitled "The Physiological Feeding of Infants," Pritchard says: "There is no vegetable or animal oil that can reach the lower bowel and soften constipated stools unless it is given in such excess that it is neither digested nor absorbed; hence there is danger of fat dyspepsia; but a mineral oil such as petroleum, in whatever doses it is administered, will always reappear in the motions and soften them to an extent which is directly proportional to the amount given. Petroleum cannot decompose in the bowel and cause offensive motions like excess of fat. It cannot become absorbed and tax the resources of the liver; in fact, it behaves as the most perfect mechanical lubricant of the bowel and as far as I know has absolutely no injurious therapeutic action." If further experience confirms the findings of Lane, Pritchard, Leslie, and others there should be a large field for the employment of liquid paraffin in therapeutics.

## MILITARY SURGERY IN THE TIME OF THE GREAT NAPOLEON.

Perhaps one of the most unique and interesting books of its kind ever written is the "Memoirs of Military Surgery," by Baron Larrey, the distinguished army surgeon, who served under Napoleon Bonaparte. The latter had the faculty of attracting to his service remarkable men, or possibly he had the genius for detecting and bringing out talent. Not only was Larrey a brilliant surgeon but he was also greatly in advance of his time. As is pointed out by J. C. Da Costa in a paper contributed to the *U. S. Naval Medical Bulletin* for April, 1913, he advocated certain operative procedures which have since been universally adopted. Primary amputation was opposed by military surgeons in those days, but Larrey preferred it to secondary amputation, and undoubtedly saved a large number of lives which would have been lost by delay. He devised a method of disarticulation of the shoulder joint. This method still bears his name and has not been improved on. He disarticulated at the hip joint, tying the artery first. His first operation of this nature was in 1798, and was the first case on record in the annals of military surgery. Larrey in his memoirs states that his views as to the value of early amputation found practical confirmation in the experiences of surgeons during the American Revolution. In that war the French surgeons would not amputate early and the mortality among the French soldiers was very large; but the American surgeons performed primary amputations, and the mortality among the Americans was very small, which seems to show that at that early date American surgeons were independent and progressive.

Larrey advised and practised excision in suitable cases, although the operation was not performed extensively until Syme of Edinburgh and Ferguson of London rendered it popular, thus vindicating the views of Larrey.

The French surgeon was strongly opposed to meddlesome surgery and was accustomed to change dressings only when such change was absolutely necessary. In gunshot wounds of the chest he excised a portion of a rib and incised the pleural sac. He found that the making of such an opening was followed by the cessation of bleeding and if pus subsequently formed a drainage opening was ready to allow of its exit. Larrey did not know how the opening stopped the hemorrhage, he only knew that it did so. Da Costa points out that the hemothorax which occurs presses on the lung and arrests the hemorrhage and states that he has practised this method several times with success.

In fact, there is little doubt that Larrey contributed a good deal to modern military surgery and few will take exception to the statement that he was one of the greatest military surgeons that ever lived.

### The Use of Snuff and Tobacco by School Children.

While pursuing certain studies on hookworm disease in one of our South Atlantic States, the fact was elicited by officers of the Public Health Service that there was a considerable amount of snuff dipping and tobacco smoking and chewing by boys and girls in schools of a section of the State. Drs. Charles Wardell Stiles and S. W. Altman have made this the subject of a public health report. The children varied in age from eight to eighteen years and the data obtained were interesting from both the medical and social points of view. The answers obtained were tabulated in reference to the presence or absence of a privy at the house or farm at which they lived on the assumption that better sanitation and increased refinement would probably go hand in hand. Of 69 boys for whom data were available, 18, or 26 per cent., admitted the use of tobacco, and half of these children lived in houses provided with privies, while the other half lived in homes not so provided. Of 7 who dipped, 2 lived at homes with privies and 5 without. Of the 59 girls for whom data were available, 13, or 22 per cent., admitted the use of tobacco, and of these only 2 lived in homes provided with privies. Of the 10 girls who dipped snuff, 1 lived in a home with, and the others without a privy. All 8 girls who chewed lived in homes without privies. That such a deplorable condition should exist among the young of any portion of the country is hard to believe, but according to Stiles and Altman, these dirty habits are due to the manner in which children are brought up. They are merely the creatures of their environment and until education exerts its influence this state of affairs will continue. Moreover, the authors state that in some instances children are advised to use tobacco and snuff by physicians as a preventative of anemia, generally owing to hookworm disease. It has been thus a case of the blind leading the blind, but, of course, the ignorant physician is rapidly passing away and when he has wholly gone and education holds sway, a new era of enlightenment and sanitation will dawn.

### Voice Restored by Paraffin Injection.

In theory there is hardly any limitation of the use of paraffin prothesis to make good losses of tissue. Time, however, is required to determine whether this resource is practicable—whether indeed it is not harmful. At a recent meeting of the Munich Aerztlicher Verein (*Münchener medizinische Wochenschrift,* June 3) Kretschmann exhibited a patient who about one year before had received an injection of paraffin in a paralyzed vocal cord band. The voice was at first rough and without much resonance, but now it has become natural. The position of the cord is also natural to a certain extent; but when the cords touch in phonation the arytenoid cartilage of the paralyzed side is seen to undergo peculiar movements. These must be due to the action of the cricothyroid muscle, which is innervated by the superior laryngeal nerve, while the paralyzed cord is innervated by the recurrens.

### "Dichotomy" in Germany.

Dichotomy in the sense of fee splitting is a subject which has of late been much discussed in Germany. In the news column of the *Münchener medizinische Wochenschrift,* June 3, it is recorded that while the two leading medical societies of Munich condemn the practice, there are differences of opinion as to what dichotomy really means. One society holds that reciprocity in referring cases may readily lead to fee splitting. The same body says "let the man who refers a case to another, send an account for his services." The other society would limit the fee of the referring practitioner to no more than he would be naturally entitled to by his fee table. As the difference of opinion is immaterial both societies will adopt a uniform code.

## News of the Week.

**City Death Rate.**—During the week ending June 14, there occurred in New York City a total of 1,303 deaths, giving a death rate of 12.65 per thousand of population, as compared to 1,204 deaths and a rate of 12.14 for the same week of last year. The increase extended throughout all of the age periods, though it was less in the earlier ones, and was noted in practically all of the chief causes of death, including measles, diphtheria, croup, whooping cough, and bronchial pneumonia especially. As compared to the preceding week of this year, however, there occurred a reduction of thirty-five in the number of deaths of infants under one year of age.

**State Statistics.**—During the month of April, 1913, there were registered in New York State 12,414 deaths and 18,013 births. Of the deaths 1,561 were due to pulmonary tuberculosis and 6,561 to cancer.

**Moving Pictures.**—The New York Department of Health, assisted by the Committee on the Prevention of Tuberculosis on June 16 gave in Mount Morris Park, New York, the first of a series of moving picture shows illustrating the best methods for the prevention and cure of tuberculosis. The shows will be given throughout the summer in the parks and on the recreation piers. It is estimated that last season the pictures were viewed by more than 100,000 persons.

**American Medical Editors Association.**—At the annual meeting of this Association, held in

Minneapolis, June 16, 1913, the following officers were elected: *President,* Dr. E. A. Van der Veer, Albany, N. Y.; *First Vice-President,* Dr. H. Edwin Lewis, New York; *Second Vice-President,* Dr. Seale Harris, Mobile, Ala.; *Secretary and Treasurer,* Dr. Joseph MacDonald, Jr., New York; *Executive Committee,* Drs. C. F. Taylor, Philadelphia, Pa.; D. O. English, New Brunswick, N. J.; W. C. Abbott, Chicago, Ill. *Publication Committee,* Drs. H. Edwin Lewis, New York, Chairman; Charles Wood Fassett, St. Joe, Mo.; A. S. Burdick, Chicago, Ill.; James P. Warbasse, Brooklyn, N. Y., and J. MacDonald, Jr., New York, Secretary.

**The Montana State Board of Medical Examiners** will hold a special meeting on Tuesday, July 8, at Helena, to examine candidates for a license to practice in that State.

**Honorary Degrees.**—Dr. Edward Tyson Reichert, professor of physiology in the medical department of the University of Pennsylvania, received the honorary degree of Doctor of Science from the University at the 157th annual commencement on June 18.

Dr. Harvey Cushing, professor of surgery in the Harvard Medical School, received the honorary degree of Master of Arts from Yale University on June 18.

Dr. Wickliffe Rose of Atlanta, Ga., at the annual commencement exercises of Harvard University on June 19 received the degree of Master of Arts, as did also Dr. Walter Elmer Fernald of Boston.

**Dr. Friedmann Sails.**—Asserting his continued belief in the efficacy of his serum and in the eventual acknowledgment of his claims, Dr. Friedrich F. Friedmann sailed from New York for Germany on June 17. To newspaper reporters he stated that he regretted that he had fallen into "bad hands" upon his arrival in this country, and in echoing this regret the medical profession and the laity for the first time find themselves in accord with him.

**Plague in Hayti.**—An epidemic of bubonic plague has been reported from Jacmel, a seaport thirty miles from Port-au-Prince, Hayti. A number of deaths have occurred. The Cuban Government has ordered several gunboats to patrol constantly along the coast of Oriente Province in order to prevent the landing of immigrants from Hayti and their entrance into Cuba without first passing the health authorities.

**Cancer Bequest Contested.**—Notice of the contest of the will of the late Henry E. Rutherford, who left a legacy of $200,000 to the Rockefeller Institute for research in cancer, has been filed.

**Personals.**—Dr. Simon Baruch was one of the speakers at a dinner given by the Saratoga Springs Medical Society on June 17 to the members of the New York State Mineral Springs Reservation Commission.

Dr. William J. Mayo of Rochester, Minn., has been elected a foreign corespondent of the Paris Academy of Medicine.

**Meat Under Pure Food Law.**—What is described as probably the most far-reaching and radical extension of the Food and Drugs Act went into effect on June 16 by unanimous vote of the Secretaries of Agriculture, the Treasury and Commerce. This consisted in the placing of domestic meat and meat food products for the first time fully under the provisions of the Food and Drugs Act, so that manufacturers of meat foods will henceforth be required to comply with this act as well as with the Meat Inspection Law.

**International Medical Congress.**—On June 21 the number of Americans registered as delegates to the International Medical Congress in London, from August 6 to 13, had reached 840, and it was expected that the attendance of physicians from this country would be at least 900.

**Sir Jonathan Hutchinson** of London died on Monday of this week in the 85th year of his age. He was a surgeon of great repute and equally eminent in ophthalmology and dermatology, and was also an acute observer and a great teacher. His name appears frequently in eponymic terminology, the best known term being "Hutchinson's teeth," indication of hereditary syphilis. Some years ago he advanced the hypothesis that leprosy was caused by the eating of stale fish, and for a time the theory gained some acceptance by the mere weight of his authority. His contributions to medical literature were numerous, most of them, other than the articles in support of his lepra theory, being on syphilitic affection of the eyes and skin.

**Obituary Notes.**—Dr. F. R. Smalling of Wrightsville, Ark., a graduate of the Jefferson Medical College, Philadelphia, in 1870, died at his home on June 6, aged 63 years.

Dr. Ernest M. Ellaby of South Park, Ky., a graduate of the Hospital College of Medicine, Louisville, in 1904, and a member of the American Medical Association and of the Kentucky State and Jefferson County Medical Societies, died at his home after a long illness on June 3, aged 38 years.

Dr. George Warren Jones of Boston, Mass., a graduate of the Harvard Medical School, in 1872, and a member of the American Medical Association and the Massachusetts State and Suffolk County Medical Societies, died in the Massachusetts General Hospital, from cerebral hemorrhage, on June 5, aged 64 years.

Dr. Charles H. Holt of Grand Rapids, Mich., a graduate of the University of Pennsylvania, Department of Medicine, in 1882, died suddenly at his home on June 2, aged 59 years.

Dr. Thomas H. Barnes of Suffolk, Va., a graduate of the Medical College of Virginia, Richmond, died at his home on June 4, aged 82 years.

Dr. James Samuel W. Williams of Oakville, Ont., a graduate of Victoria University, Medical Department, Toronto, in 1867, died at his home on June 4, aged 72 years.

Dr. Charles Drennen, formerly of Birmingham, Ala., a graduate of the University of Alabama, Medical Department, Mobile, in 1872, died at his home in Orlando, Fla., on June 3, aged 72 years.

Dr. Daniel J. Scully of Colorado Springs, Col., formerly of Brooklyn, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1899, and a member of the American Medical Association and of the Colorado State and El Paso County Medical Societies, died at his home from pneumonia, after a short illness, on June 16, aged 38 years.

Dr. John Howard Morgan of Westerly, R. I., a graduate of the New York University Medical College in 1868, a member of the American Medical Association, and the Rhode Island State and Washington County Medical Societies, and president of the Westerly Medical Association, died at the home of his daughter in West Orange, N. J., from cerebral hemorrhage, on June 21, aged 68 years.

# Obituary.

## FRANK HARTLEY, M.D., LL.D.

NEW YORK.

Dr. Frank Hartley of New York, professor of clinical surgery in the College of Physicians, Columbia University, died at his home from disease of the kidneys, after several weeks' illness, on June 19, aged 57 years.

Dr. Hartley was graduated from Princeton University in 1877, and from the College of Physicians and Surgeons, New York, in 1880, and following this spent two years in study in Vienna and Leipsic. At the time of his death he was attending surgeon of the New York Hospital and consulting surgeon to the French, General Memorial, Italian, and Mack Hospitals, New York; St. Joseph's Hospital, Paterson, and the White Plains Hospital. He was also a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the Society of the Alumni of Bellevue Hospital, the American Urological Association, and the American Surgical Association. His surgical achievements were great, and he was the originator of a complete series of operations upon the skull and brain of which perhaps the most noted was his famous bisection of the ganglion of the fifth cranial nerve, which marked the first successful cure for facial neuralgia. In 1910 Dr. Hartley received from Princeton University the honorary degree of Doctor of Laws.

# Correspondence.

## ACIDS IN THE TREATMENT OF CANCER.

To the Editor of The Medical Record:

Sir:—Dr. Bristol's article of May 3 regarding the use of acids in the treatment of cancer suggests that one case may be of some interest. The patient who was suffering from cancer involving the mouth and neck of womb, came to me December 1, 1909. I applied the liquefied crystals of carbolic acid to the ulcerated surface every third or fourth day, healing it in three months. From the first I gave aromatic sulphuric acid internally, 8 drops in water every three hours. From time to time I was obliged to use opiates for the severe pain at night. On May 25, 1910, the internal use of sulphuric acid was discontinued, all pain and soreness having disappeared some time before. There has been no recurrence of symptoms of any kind and the patient is now in perfect health. Robert Mason, M. D.

Exeter, N. H.

## THE SKIN REACTION IN TYPHOID FEVER.

To the Editor of The Medical Record:

Sir:—Further experience during the past year with the skin reaction in typhoid fever reported by the writer in the Medical Record, December 30, 1911, has brought out the following points: It seems to be essential that "prophylactic" vaccine be used rather than that used in the treatment of typhoid fever, *per se*. The original strength of less than 5,000,000 bacilli per c.c. (1 in 20 dilution) has proved to be too strong. Of late this strength has given an excessive reaction in the control cases and a mild reaction in the typhoid fever cases. The present strength of solution used is less than 1,500,000 bacilli per c.c. (1 in 45 dilution).

Francis A. Prendergast, M. D.

Brooklyn, N. Y.

## OUR LONDON LETTER.

(From Our Regular Correspondent.)

KING'S BIRTHDAY HONORS—INDIAN MEDICAL SERVICE—CANCER RESEARCH AND RADIUM—GUY'S MEDICAL SCHOOL; ADDRESS BY MR. BALFOUR ON ENDOWMENT OF RESEARCH—MINER'S NYSTAGMUS—TUBERCULOSIS SCHEME AT THE COUNTY COUNCIL—BEAUTIFYING PATENT MEDICINES—OBITUARY.

London, June 6, 1913.

There was a distribution of honors on the King's birthday, in accordance with custom. The medical profession was not omitted. A baronetcy was given to Arbuthnot Lane, whose surgical position is well known to you, and who was the operator on the Duchess of Connaught, now happily convalescent. Major E. A. Worthington, the Duke's medical attendant in Canada, and who watched the Duchess throughout her illness, receives a knighthood. A number of other knighthoods, and appointments and promotions in the various orders are also conferred on members of the profession in civil practice and in the services.

A Royal Warrant, dated from the India office cancels that of King Edward of 1908, and the present King's of 1911, with reference to promotion and precedence in the Indian Medical Service, and provides new rules by which the Viceroy and Governor-General in council shall be governed in this matter. Time will show whether the changes will prove acceptable.

Cancer research is in favor just now. Only a fortnight ago I reported Mr. Tate's donation of £10,000 for this object. Now I have to add that Mr. Arthur James, as a memorial to his late brother William, is placing at the disposal of the Middlesex Hospital the income of £20,000 for the scientific investigation of the disease which is being carried on at that institution. So last week I reported the statement at the Middlesex about the cost of radium. Thereupon the *Daily Express* opened a subscription for providing a supply of the costly remedy to the hospitals of London. In response £10,500 has already been received and distributed among the London hospitals. The high commissioner for Scotland has given £1,000 to the Edinburgh Infirmary for the same purpose.

The new buildings of the Guy's School were opened on Tuesday by Mr. Balfour. Like each of the other ten schools, it is in want of funds. The cost of medical education has increased so rapidly with the recent advances that the new entries into the profession are falling off and in the public interests it is being widely urged that endowments in some form are becoming essential. As to these Guy's buildings for the school they are independent of the hospital, and receive none of its funds. They have been more or less in the construction stage for some sixteen years. The department of physiology having been opened in 1897, that of anatomy was extended and very largely reconstructed in 1904, and that in turn was followed the next year by the biological department and the Gordon Museum.

At the ceremony Viscount Goschen took the chair and welcomed Mr. Balfour as a governor of the hospital, a disciple of science, and a supporter of the new building scheme. Further as one who in 1898 addressed the students and their friends, declaring himself an ardent believer in the endowment of research. There had been two other historic incidents in this enterprise,

one when Mr. Gladstone, the hospital's senior governor, opened the students' college; the other when King Edward opened the department of physiology. Mr. Balfour said it was a pleasure to him fifteen years ago, as the chairman had reminded them, to urge in that hall the claims of research on all who desired our country to maintain its place in what was the greatest of all the professions. Since then a hundred thousand pounds had been spent on these buildings in constructions and reconstructions, but twice that amount would be wanted before they could do all that they should do in the interests of medicine now and in the future. The necessity of increased expenditure arose chiefly from the inherent progress of science, some branches of which fifty years ago had less practical connection with medicine than now. As the connection of collateral sciences with medicine became closer, so the apparatus required increased in cost. To the public a hospital seemed a place for relieving the sick and injured. That was too narrow a view; it should also be a training ground for the physicians and surgeons of the future. How was that to be accomplished? To carry out that work required three gifts which were not necessarily present in a single individual. First, a successful professor of the healing art must be endowed with not only all that medicine could teach but with ready intuition in connection with diagnosis. Secondly, there must be men who could explain, for doing and explaining were very different things. Then they wanted men who could investigate—men who could map out, not provinces of which we know nothing—any fool could do that—but the direction in which the next advance should be made, where nature might most easily be compelled to yield her secret. Genius was rare in all professions and the medical could not hope for a larger share than others. All that could be done was to give happily endowed individuals the opportunity of exercising for the common advantage the gifts that God had bestowed on them.

But, Mr. Balfour went on to confess, he doubted if our organization did not need improvement in that we could not ask such men to sacrifice all claims upon them for the sake of research. It was certain the hospitals had not fallen short in healing or investigating, but progress had been so great that it had become necessary to assist them by some form of endowment so as to enable them to get and keep men with a genius for research. Actual, if passing, suffering touched all hearts and appeals to relieve it found ready response. But the appeal he now urged had no such advantage. He was speaking for the future, and in favor of prolonged research about which the public knew nothing; but if people exercised their imagination they would see that scientific medical research touched them as much as the necessity of helping the man who had broken his leg. Let people with means exercise their imaginations, the speaker said, and they would then readily find the £200,000 for which he asked to turn to the best account the building they had provided for half that amount.

The increase of miner's nystagmus is a source of anxiety in many directions, and a lecture on the subject was given on Saturday at the exhibition of mining machinery now being held in the Agricultural Hall. The lecturer was Dr. T. Lister Llewellyn, who has studied the disease in various mines. His researches led him to discredit the notion so widely entertained that the cramped position of the miner in his work is the chief cause. It is true that the disease only showed itself after the introduction of the safety lamps, and Dr. Llewellyn believes it is because the lamp does not give sufficient light. In mines where this lamp is used the percentage of nystagmus cases is 7.5, whereas in those mines where the candle is the illuminant the percentage is only one. The conclusion seems obvious that every effort must be made to improve the illumination. The lecturer seemed to think improvements might be made in the lamp, for the day of oil lamps is past, but there is scope for electric lighting.

Sir Ralph Ashton, late president of Mining and Geological Institute of India, who occupied the chair, emphasized the value of Dr. Llewellyn's researches, and hoped they would lead to important improvements.

Much difference of opinion is being expressed as to the proposal of the health committee of the County Council in favor of a comprehensive scheme for the treatment of tuberculosis in London. The Council has not hitherto been an authority providing for this. But the asylums board has and possesses the administrative machinery necessary. Most people think that one board should suffice. The principal objection I have heard against the asylums board undertaking further work is that insured persons would resent being sent there and classed with pauper patients. This is only a sentimental objection, and would, if encouraged, defeat any comprehensive scheme for the treatment of all tuberculous persons.

A House of Commons Committee is inquiring into the sale of patent medicines. Last week it had before it the secretary and manager of a limited company dealing in proprietary articles, and asked him about advertisements of "Novel Beauty Receipts." The witness said there was only one director to the company, and he was at present in America, so he could not answer some of the questions put. The chairman read a list of names of ladies appearing in the advertisements and asked if witness had any knowledge as to whether such persons existed or not. He pleaded it was not for him as a servant to form an opinion. After some pressure, and a warning, he admitted "at the time when the letters were received I had an idea that one of the ladies named was an actual person." To a question when his directors met he answered, "There is only one director, and he meets himself." A solicitor appeared and asked to be allowed to state this was a small private company formed last year by Mr. Daniels, and in his absence the secretary was in an awkward position. He testified that he prepared the memorandum and articles of association of the company, and on formation 502 shares of £1 were issued, 501 to Mr. Daniels and one to his first secretary.

Mr. J. H. Targett, obstetric surgeon and lecturer at Guy's Hospital, has died after a long illness at the early age of 51. He was a Guy's student, and after qualification held the house appointments and the surgical registrarship. He was formerly pathological curator of the Royal College of Surgeons Museum, and at the time of his death examiner in obstetrics for the conjoint board. He was M.B. and M.S. of the London University, and Fellow of the Royal College of Surgeons. He made contributions to the literature, especially to *Guy's Hospital Reports.*

## TUBERCULOSIS IN FRANCE.

(From Our Insurance Correspondent.)

PARIS, May 31, 1913.

IN a recent article (January 11, 1913) we reported upon the favorable results obtained in Lyons, France, on the mortality from tuberculosis by the Antituberculosis Dispensary. We now shall show the other side of the question—that is, the increase in tuberculosis mortality in Paris due to unhygienic principles which should be stamped out.

In the *Journal des Médecins Accoucheurs* an article appears criticising the overcrowding in Paris, the unsanitary conditions existing in certain parts of the town and finishes by quoting glaring examples of the spread of tuberculosis in some blocks of houses in the old streets in the city.

Brouardel estimated that 150,000 persons died annually in France from tuberculosis, but this figure was criticised by Robin and Mirman, who gave an estimate of 85,000. There is no doubt that the figures given by Brouardel are more exact, still it is difficult in France to obtain exact figures owing in many cases to the reluctance of the medical attendant to certify tuberculosis as the cause of death.

From the statistics of 1910 we obtain the following figures of deaths from tuberculosis per 100,000: France, 217; Germany, 168; Italy, 166; Spain, 162; England, 146; Belgium, 139. In France 42 per cent. of the deaths occurring between the ages of twenty to thirty-nine are caused by tuberculosis.

In Paris City (within the walls) about 3,500,000 persons sleep every night, and of this number 500,000 come from their work in the suburbs into the town of Paris to spend the night.

In most cities the efflux at night to the suburbs is greater than the influx, but in Paris the reverse holds good. In 1896, there were 318 inhabitants per hectare (10,000 square meters) in Paris, whereas last year there were 370 for the same area.

The open spaces, such as parks, in a city are usually looked upon as the "lungs" of that city. In London, Hyde Park alone measures 240 hectares, whereas in Paris the Luxembourg, Tuileries, and Park Monceau amount to only 55 hectares in all, or in other words, only about one-quarter the "lung space" in comparison.

In the Lombard Quarter of Paris, 250 houses out of 276 are contaminated with tuberculosis; in the Brisemiche 22 people per 1,000 die annually of phthisis in the dwelling houses and the death rate in the lodging houses from the same disease is as high as 42 per 1,000. Several such examples might be quoted to show the conditions prevailing in some quarters of the city. In Paris 81 streets and 5,000 houses are infected with tuberculosis; 12,000 families of six persons live in single room apartments.

From the above it can be seen that there is considerable scope for measures similar to those carried out in Lyons and again we have an example of the "dollar and mortality rate problem."

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**Smallpox on Steamship.**—The steamship Ryndam, which arrived in New York on June 18 from Rotterdam and Boulogne, was detained at Quarantine because of the discovery of a case of smallpox among her steerage passengers. The patient was transferred to Swinburne Island and 191 passengers who occupied the same compartment were sent to Hoffman Island for observation.

## Progress of Medical Science.

### Boston Medical and Surgical Journal.

*June* 12, 1913.

1. Psychology and the Physiological Sciences. R. MacDougall.
2. The Digestivity of the Human Gastric Juice Compared to the Digestivity of Various Remedies Recommended in Disorders of the Stomach. G. H. Nofer.
3. On So-Called Binasal Hemianopsia in Brain Tumor. W. B. Lancaster.
4. The Diagnostic Evidence Obtained by X-Rays from the Lateral Aspects of the Skull, with Especial Reference to the Base and Its Adnexa. P. Brown.
5. Social Pediatrics. I. S. Wile.

**2. The Human Gastric Juice and Various Digestive Remedies.**—G. H. Nofer concludes from his experiments that the normal gastric juice, when compared with various preparations of pepsin, pancreatin, and rennin, shows the greatest proteolytic power. Therefore, when there is a deficiency of the gastric juice, one should endeavor to reestablish the production of normal gastric juice, before replacing it by these various remedies. A practical inference suggests that when one prescribes pepsin one will probably get better results by ordering scale pepsin dispensed as a tablet, capsule, or in sealed packages, to be freshly dissolved in water and taken about a half hour after meals. If hydrochloric acid is indicated it may be dispensed separately and ordered to be taken well diluted. (All the scale pepsin solutions were freshly made at the time of the tests.) Undoubtedly pepsin, like other remedies, has suffered from being improperly dispensed and injudiciously used. Pepsin will not lift a fallen stomach; it will not cure the reflex gastric symptoms due to gall-bladder disease, chronic appendicitis. The crux of the whole subject depends upon that fascinating subject of diagnosis. The author's personal impressions are that pepsin's rôle in therapeutics will be established and enhanced by its exhibition on exact indications dependent on accurate diagnosis.

**3. Binasal Hemianopsia in Brain Tumor.**—W. B. Lancaster states that it is better to adhere to the classical conception of hemianopsia and require for admission to that category that the cases must show symmetrical losses limited (unless a complication is present) to a half field of each eye and due to a single lesion affecting the visual centers or pathways at or posterior to the semi-decussation of the optic nerves. Fields which simulate these, but are of totally different origin (glaucoma, atrophy, retinitis) may be called pseudo-hemianopic. The cases reported by Cushing and Walker as examples of binasal hemianopsia, when all the charts are combined into one composite chart to determine the type, show that the true type of loss of the visual fields is a concentric contraction affecting both half fields equally and therefore not to be called hemianoptic according to the accepted use of the term by ophthalmologists. The characteristic form of the visual fields in secondary atrophy is probably due to the distribution of the fibers in the nerve head. This distribution is such that the superficially located fibers are most exposed to the pathological processes and are the first to succumb while the deepest and most peripheral fibers of the papilla are the last to suffer. These come from the area of the retina adjacent to the optic disk, thus accounting for the tendency noted by Cushing and Walker "for the elds to become limited to a small bitemporal field surrounding each blind spot." Were this process complicated in some cases, as suggested by Cushing and Walker, by a pair of symmetrical lesions affecting the outer aspects of the optic nerves near the chiasm where the uncrossed fibers which come from the temporal retina are superficially situated, the damage to these fibers should show itself in a modification of the form of the visual fields. The loss from the nasal fields should exceed what we should expect to find, judging by the progress of the loss in the temporal elds. This does not seem to

occur. The last case in their series is probably an example of retrobulbar neuritis.

4. **Lateral Radiography of the Skull.**—P. Brown notes that the value of the proper Röntgen interpretation of the lateral skull, with reference to the accessory nasal sinuses, need not necessarily be dimmed by the more brilliant diagnostic offerings of the occipitofrontal position. The greatest importance should be laid upon the already established fact that this cranial plane is absolutely essential to the only important Röntgen diagnostic step in the pituitary region. Neither of these applications, however, can be made properly without an exhibition of the highest type of technical skill and diagnostic judgment.

## New York Medical Journal.

*June* 14, 1913.

1. Gonorrhea from a Pathological Standpoint. G. A. Wyeth.
2. The Relation of Trauma to Bone Tuberculosis. H. A. Wilson and R. C. Rosenberger.
3. A Diagnostic Study of the Face. H. A. Knox.
4. The Principles of Freud's Psychology. M. J. Karpas.
5. On the Instantaneous Transformation of Mercuric Compounds to Calomel, and the Application of this Process in Cases of Mercuric Poisoning. G. A. Linhart.
6. Hallucinations of Hearing and Diseases of the Ear. J. H. W. Rhein.
7. Erythromelalgia. A. E. Fossier.
8. The Prognostic Value of the Arneth Blood Count in Pulmonary Tuberculosis. J. Kramer.
9. Report of Three Cases of Cæsarean Section. A. M. Hilkowich.
10. Chronic Mediastinitis Following Osteomyelitis of the Sternum; Report of a Case and Operation. H. M. Armitage.

1. **Gonorrhea from a Pathological Standpoint.**—G. A. Wyeth concludes that gonorrhea, on account of its complications and sequelæ, must be recognized as a most serious infectious disease. It can be cured if the seat of infection is definitely located and scientifically treated. It can be aborted in a large proportion of cases if patients are seen early. In the acute state phagocytosis is the chief means of combating the infection. It should, therefore, be one's endeavor to promote a local leucocytosis by increasing the discharge. Time-honored astringent injections which aim to check the discharge are to be condemned as long as gonococci are present. Only by the systematic use of the microscope can one intelligently direct one's course of treatment.

2. **Trauma and Bone Tuberculosis.**—H. H. Wilson and R. C. Rosenberger believe that the relation of trauma to bone tuberculosis must, sooner or later, be established as having no existence in the etiology—or in the beginning of the process. The primary cause of bone tuberculosis is essentially infection by the bacillus of tuberculosis. Any condition which lowers the vitality, and therefore the resistance of the patient must be considered contributory.

4. **Freud's Psychology.**—M. J. Karpas believes that Freud's contributions to psychology are of eminent value. By his methods one is enabled to penetrate deeply into mental life, which one can study in all its phases and ramifications, be they normal or abnormal. His theories of sexuality are of great importance to the physician, psychologist, and educator. Formerly, the psychological manifestations of sexuality were neglected. In the field of nervous diseases, such as hysteria, compulsive neuroses, and allied conditions, the psychoanalytical method, as developed by Freud, can be successfully carried out under certain conditions and in cases suitable for such treatment. By the older methods, such as hypnosis, suggestion, or rest cure, it was possible to remove the symptoms, but not their underlying causes. Indeed, the fundamental principle in therapeutics is to remove the cause of the abnormal phenomena. In mental diseases Freud's method has aided one in understanding the psychology of psychotic symptoms, and hence has enabled one to understand the mechanism of functional psychosis. Thus rational prophylaxis can be intelligently instituted. It should be emphasized that no claims are made of curing dementia præcox, paranoid conditions, or other severe mental disease by psychoanalysis. Psychoanalysis bears the same relation to psychiatry that bacteriology does to infectious diseases

6. **Hallucinations of Hearing.**—J. H. W. Rhein reports three cases of hallucinations of hearing associated with disturbances in the peripheral auditory apparatus, in which the hallucinations were the only manifestation of mental disease. In all three cases described the possibility of arterial change in the brain must be recognized and especially in two of the patients, whose ages were, respectively, sixty-five and sixty-nine. It is difficult to avoid the conclusion that the nutrition of the auditory centers has been implicated in these cases and that, therefore, they react abnormally to peripheral irritation. While the occurrence of hallucinations of hearing associated with disturbances of the peripheral auditory apparatus does not necessarily indicate the onset of insanity, there can be little doubt that this phenomenon is an expression of an unstable psychic equilibrium and is therefore actually within the domain of psychiatry. A history of nervous disease in the ancestry is usual, and a study of the cases shows a tendency at some time to exhibit neuropathic manifestations.

## Journal of the American Medical Association

*June* 14, 1913.

1. The Problem of Typhus in the United States. J. F. Anderson.
2. Improved Device for Illuminating the Operating Room. W. Bartlett.
3. Operating Departments for Modern Hospitals which Provide for Spectators without Disturbing the Hospital Service or Its Personnel. J. R. McDill.
4. Fracture and Orthopedic Table. G. W. Hawley.
5. Prognosis and Therapy of Cerebral Syphilis. G. S. Schwinn.
6. The Cutaneous Reaction in Syphilis. Second Report. J. M. Wolfsohn.
7. Intravenous Injections of Various Substances in Animal Cancer. L. Loeb and M. S. Fleisher.
8. An Artificial Airway for Surgical Anesthesia. R. H. Ferguson.
9. Gastric Dilatation. Its Treatment by Removal of Gastric Contents, Starvation and Rest in Bed. A. Frick.
10. Significant Signs in Early Diagnosis. H. W. Emsheimer.
11. The Significance of Ocular Findings in Estimating Longevity. W. C. Posey.
12. Sexual Neurasthenia in Men. A. J. Underhill.
13. The Teaching of Psychiatry. A Reply to Drs. Burr and Dercum. H. D. Singer.
14. The Staphylococcus-Spray Treatment of Diphtheria Carriers. A. M. Alden.
15. A Report of a Case of Thrombosis of the Inferior Vena Cava. T. Willett and E. W. Maechtle.
16. Persistent Hiccups. S. J. Caffrey.
17. One Gauze Sponge Removed from Bladder, Another from the Vagina, Months After a Dührssen Operation for Prolapse. H. D. Furniss.

1. **Typhus Fever in the United States.**—J. F. Anderson points out that typhus fever is more widespread in the United States than the figures would seem to indicate. While the disease as generally observed has had a low case mortality and no great tendency to spread, there is a possibility of its becoming virulent and epidemic. Guinea-pigs are quite susceptible to typhus when inoculated intraperitoneally with the blood of patients in the active febrile stage and the author suggests as a means of collecting more accurate data the use of such inoculations from the blood of patients with a continued fever giving a negative Widal and blood-culture; especially in cases of sudden onset, atypical eruption, intense headache, apathy, and prostration. He believes that such methods, if carried out, would prove that typhus is more prevalent in our large cities than is generally believed.

6. **The Luetin Reaction.**—J. M. Wolfsohn concludes on the basis of his observations, and of those of all previous workers, that the luetin test, when properly performed is specific for syphilis. Intensive antisyphilitic treatment in the latter stages of syphilis may produce a negative luetin reaction which, after an interval during which treatment is withdrawn, may become positive. Treated congenital and secondary syphilis is apt to give positive luetin reactions. The luetin reaction is especially valuable in parasyphilis, and tertiary and latent syphilis. In any case of suspected syphilis, where previously treated

or not, a negative luetin reaction must be watched for at least four weeks so that one may not overlook a delayed reaction.

9. **Gastric Dilatation.**—A. Frick notes that dilated stomach retains its contractility very well no matter for how long a time or to what degree it has been dilated. The chief purpose of the treatment of a gastric dilatation should be to give the dilated stomach every possible opportunity to contract. This purpose is best accomplished by the removal of the gastric contents, starvation, and rest in bed. These three therapeutic measures should be considered a distinct method of treating gastric dilatation, and are indicated as soon as a diagnosis of dilatation has been made, just as the starvation cure is considered a method of treating gastric ulcer. This method is indicated as a preparatory treatment in those cases of gastric dilatation in which a gastroenterostomy is to be made on account of the cause which has led to dilatation, as under such treatment the stomach will contract as far as possible and an eventual continuous gastric secretion will cease. Intragastric or extragastric electricity, massage, cold compresses, or other hydrotherapeutic measures, abdominal supporters, rectal feeding, strychnine, antiseptic drugs, and alkalies are valuable auxiliary remedies but are not strictly necessary for the treatment of gastric dilatation.

11. **Ocular Findings and Longevity.**—W. C. Posey states that marked ocular disturbance from diseases elsewhere in the body indicates a development seriously threatening health and life. The discovery of hemorrhages in the retina, for example, when not of traumatic origin, in any adult should always be considered as indicating a serious condition. Death may be expected from one to three years in albuminuric retinitis. Future statistics may show some improvement. A carefully regulated manner of living with the best of medical care may prolong life for many years. Of almost equal value to the examiner is the recognition of the ocular symptoms of diabetes which are many and varied. The most important are the changes in the ciliary muscle, the lens and the retina, which changes not infrequently are the first recognized symptoms of diabetes mellitus. With proper care diabetics may live many years after the development of ocular lesions and these may sometimes improve. Diabetic cataract is the one form of cataract that yields in any degree to inoperative measures. The ophthalmoscope may also give valuable indications in the retinal circulation, both as regards the conditions of the heart and also as regards the prospects of life. Lead, tobacco and alcohol often reveal their defects in the fundus oculi, and syphilis can affect almost all the eye structures. Tuberculosis has also its eye symptoms. The earliest symptoms of paresis are often ocular and may be of the greatest value in diagnosis. Aside from the question of life expectation, the author thinks insurance examiners should give more attention to the degree of visual acuity as affecting a person's capacity for work.

## The Lancet.

*June 7, 1913*

1. Some Industrial Accidents and Diseases. Sir Thomas Oliver.
2. A Small Muscle-Splitting Incision for the Exposure of the Pelvic Portion of the Ureter. F. Kidd.
3. Observations on "Diagnostic" Tuberculin. N. D. Bardswell.
4. The Significance of Renal Tube Casts in the Urinary Sediment. G. Lestock Thornton.
5. The Colloids of Iron. L. Dimond.
6. Notes on Two Unusual Cases of Infantile Scurvy. E. Pritchard.
7. Note on a Case of Urethral Calculus of Unusually Large Size. E. A. Walker.
8. The General Medical Council and the Proposed Alteration in the Standard of Preliminary Examinations. Sir Henry Morris.

1. **Industrial Accidents and Diseases.**—By Sir Thomas Oliver. (See MEDICAL RECORD, Vol. 82, page 821.)

3. **Diagnostic Value of Tuberculin.**—N. D. Bardswell states that in healthy persons the tuberculin reaction is of no clinical significance, and that in a case of ill-health a reaction to tuberculin is, in itself, no evidence that tuberculosis is the cause of the symptoms. In brief, it is generally recognized that so far as pulmonary tuberculosis is concerned tuberculin for diagnostic purposes has great limitations, since a reaction occurs as readily in cases of mere infection with tuberculosis (non-clinical tuberculosis) as in clinical tuberculosis, and in respect to clinical tuberculosis we are unable to differentiate with any certainty by the use of tuberculin between cases of active, quiescent, and arrested disease. There are, however, good grounds for holding that in the case of a patient presenting indefinite signs and symptoms the failure to react to a subcutaneous dose of 10 milligrams is strong evidence against the existence of clinical tuberculosis, and that conversely the occurrence of a focal reaction in a suspected area in the lungs is suggestive of the existence of potentially active tuberculous disease.

## British Medical Journal.

*June 7, 1913.*

1. A Clinical Study of Pneumonia; with Notes of 100 Consecutive Cases Occurring in Hospital Practice. J. A. Lindsay.
2. A Lecture on Radium in the Treatment of Malignant Disease R. Knox.
3. Diachylon or Duty; a Call to Action. Sir Thomas Oliver.
4. The Use of Celluloid in the Treatment of Tuberculous Disease of the Spine. H. J. Gauvain.
5. A Case of Complete Auriculo-Ventricular Heart-Block; With a Report of the Pathological Condition of the Heart. T. W. Griffith and M. Kennedy.
6. The Position and Form of the Normal Human Stomach. A. M. Paterson.
7. A Note on the Shape of the Normal Empty Stomach. J. S. B. Stopford.

1. **A Clinical Study of Pneumonia.**—J. A. Lindsay presents an analysis of one hundred consecutive cases of pneumonia that he treated at the Royal Victoria Hospital, Belfast. The general mortality was 20 per cent., which is roughly the average mortality of the disease in general practice. As to the prognosis in this disease, the author states that this is determined mainly by the following factors: (a) The patient's age; this dominates the outlook. (b) The amount of lung involved. Double pneumonia is very deadly. (c) The general character of the symptoms. Marked cerebral involvement is very serious. Very high temperatures are grave, while abnormally low temperatures may indicate either a mild attack or deficient reaction. The latter is common in the aged and alcoholic. Slight febrile albuminuria has little weight, but signs of marked renal congestion are serious. (d) The nature of the complications. Gangrene and abscess of the lung are very serious. Pericarditis is a grave complication, and malignant endocarditis carries with it an almost certainly fatal issue. Meningitis is another rare complication which usually involves death. One should treat pneumonia on the lines of the acute general infections, remembering the intensity of the toxemia, its self-limitation and relatively brief duration, its tendency to depress the heart and cause circulatory failure, the increase of the fibrin elements in the blood, the importance of a fortifying line of treatment and of avoiding all depressing measures. The problem of specific treatment still awaits solution.

2. **Radium in the Treatment of Malignant Disease.**—R. Knox concludes that in all cases of early cancer the operative method is undoubtedly the best; it is quicker and safer, and offers the best prospect of cure. 2. Radium is a useful adjunct to the treatment of all cases, first as a prophylactic after operation, and, failing operation, the next best method one possesses. It must, however, be stated that *x*-rays are in selected cases quite as useful as radium. In patients who refuse operation, or are for other reasons not suitable for operation, radium is a useful remedy. In inoperable cases radium may help to render the case operable; and, failing that, is undoubtedly useful as a palliative measure.

3. **Diachylon as an Abortifacient.**—Sir Thomas Ol-

iver states that the self-administration of diachylon pills by pregnant women for the purpose of procuring abortion is a practice more widely indulged in and with more serious consequences than at first sight appears. The dangers following the self-administration of diachylon are not only that the woman may have a long and painful illness, accompanied or not by paralysis of hands and limbs, but that she may die in the attack of acute plumbism, either from intractable vomiting, acute inflammatory affections of the pelvis consequent upon incomplete abortion, or from convulsions. Young females, married and unmarried, have been admitted into hospitals or been treated by medical men outside, and have died in convulsions or from recurrent vomiting, and at the post mortem examination nothing has been found to explain either the symptoms or the death. In a few of these it was afterwards ascertained that diachylon had been taken.

4. **The Celluloid Jacket.**—H. J. Gauvain notes that jackets made of this material are light, elegant, rigid but slightly elastic, strong, are not acted upon by the heat and moisture of the body, maintain their shape indefinitely, and are comparatively easy to make. Their greatest value lies in the fact that they may be made to accurately fit a cast of the patient and maintain the shape of this cast indefintely. The great objection to the use of celluloid is its inflammability. It has been discovered, however, that if a supersaturated solution of calcium chloride in very hot water is added to the celluloid dissolved in acetone, the resulting mixture when dry is absolutely non-inflammable. It retains its non-inflammability when made into a splint, and such a splint cannot be made to burn even when held in a fire. This discovery, therefore, disposes of the greatest, and indeed the only, objection which can be raised to the employment of celluloid in the manufacture of orthopedic appliances.

6. **Form and Position of the Normal Stomach.**—A. M. Paterson from personal observations is of the opinion that the normal stomach is, in the majority of cases, a four-chambered organ, composed of the following parts: Cardia and fundus, pyloric vestibule, pyloric antrum and pyloric canal. The constriction forming the pyloric vestibule between the cardia and pyloric antrum may form a definite tubular canal, or it may be a deep V-shaped notch in the greater curvature, producing often atypical hour-glass contraction. There is usually a considerable thickening of the muscular wall of the organ in relation to the pyloric vestibule and the pyloric canal.

## Münchener medizinische Wochenschrift.

*May 27 and June 3, 1913.*

**Fatal Cerebral Hemorrhage in Hemophilia.**—Hauck mentions the two types of apoplexy seen in hemophilics. One is conditioned by some sort of trauma, including injuries not readily demonstrable. Conceded the friability of the cerebral vessels the nature of the injury is of secondary significance. A mild, blunt injury may be sufficient to cause a trauma. This is also well seen in connection with joint injuries. In the other type the hemorrhage is termed spontaneous, for want of evidence of trauma of any kind. In a case history given the age of the patient—but 20 years—is sufficient to exclude apoplexy from the usual causes. He came of a family of bleeders, and was in good health prior to the prodromes of the apoplectic attack. These consisted of repeated attacks of headache and vomiting. The medical attendant, knowing the family infirmity, sought in vain for evidence of violence. There was a history of hemarthrosis and other losses of blood. The patient received a thorough examination which revealed evidences of intracranial pressure. There was no paresis but it was surmised that blood could have escaped into the ventricular cavity, for the lumbal punctate contained pure blood. An epileptiform convulsion developed suddenly and patient succumbed without the development of hemiplegia. The author is unable to find a parallel case in literature, *i.e.* of spontaneous hemorrhage. Autopsy showed escape of blood in numerous localities in the brain—meningeal, parenchymatous, etc.—which explained the absence of paresis of focal origin.

**Erythema Nodosum and Tuberculosis.**—Moro refers to a recently made claim by Pollak that he obtained evidences of tuberculosis in 100 per cent. of his cases of erythema nodosum, relying chiefly on positive reactions to tuberculin. The author, in attempting to verify this find, obtained four negative results in thirty patients tested. He has long held that a close connection exists between the two conditions, but to look upon erythema nodosum as purely a tuberculide is to go much too far. Tuberculous toxins are one but not the sole cause. The line of proof offered is simply that the ointment reaction of tuberculin named after the author is able to produce erythema nodosum; but it has also been seen to provoke zoster and purpura. No one has yet caused a focal reaction in lesions already present, nor has the bacillus yet been found in the lesions.

**Syphilitic Pernicious Anemia.**—Weicksel relates a case of this type in a patient aged 52. There was evidence of past syphilis in the family, but patient himself had only a local sore during his military service. He had kept well always until quite recently when he became suddenly weak and pale. The symptoms were those of anemia of severe character and the blood count showed this to be pernicious with a positive Wassermann. Patient was given an injection of salvarsan, repeated after some days, but no real improvement set in and a bronchitis very nearly terminated his existence. After hovering near death for three weeks he began to improve slowly and eventually recovered save for the sense of prostration. Aside from salvarsan the patient had taken iodides and Fowler's solution. The nature of the cure was paradoxic, and the author is evidently not entirely certain as to the syphilitic etiology of the case.

**Hypotonia of the Eyeball in Diabetic Coma.**—Hertel states that the cause of this phenomenon has never been explained satisfactorily. The author writes briefly in the interest of his priority claim for the elucidation of the nature of the occurrence. This is not bound up with the existence of a diseased state of the eye, nor does it in any way depend upon the blood pressure. The author discovered that the electrical conductivity of the softened eye indicated some alteration in the osmotic relations, and proceeded to vary by means of intravenous injection of various substances the molecular concentration of the blood. Ehrmann had already called attention to the imperial observation that the butyrates (supposedly involved in acidosis) could increase the intraocular tension. The author verified this claim for the butyrate (and isovalerianate) of soda. Animal experiment has, to sum up, shown conclusively that certain changes artificially produced in the blood lower the intraocular pressure. These data should be sufficient for a successful research of the subject. The substances which alter the concentration of the blood are in nowise specific. The main thing is to employ some one of several substances (sodium chloride) in such amounts as to secure a certain concentration.

**Abderhalden's Serodiagnosis in Psychiatry.**—Wegener, who is Binswanger's assistant, speaks very encouragingly of the future of this new resource, which has been tested in 200 cases. In insanity of youth the blood serum disintegrated in females both ovaries and tubes, but not the testicles; in males it disintegrated testicular substance only. In manic-depressive insanity no tissues were attacked. In epilepsy with beginning dementia brain substance is decomposed. In all the luetic and metaluetic affections, the same result was obtained. Abderhalden's test is also shown

to be at times more delicate than the Wassermann. In a few cases of neuritis the blood serum disintegrates muscular substance. Binswanger has at his disposal tissue substances of every conceivable character, for serum tests. Abderhalden in this line of work began with placental substance for testing the blood serum of gravidity.

**Commercial Placental Powder for Abderhalden's Pregnancy Test.**—V. L. King, head of an American laboratory, inspired by the attempts of Lindig of Jena, which, however, gave at first an impracticable product, has devised a process for the manufacture of a dry-permanent powder. This, which is adapted for dialysis process, is conceived along Abderhalden's original lines in preparing his reagents. The powder is obtained by evaporation and rendered stable by toluol. The essential step in preparing the powder is the use of acetone, which simultaneously rids the placental tissue of fat and water. Tests made with this powder are said to be more delicate than when unchanged placenta is used.

**Hematological Diagnosis of Rötheln.**—Schwaer has introduced a clinical blood test which should prove of great value in both diagnosis and differential diagnosis. There were three cases under treatment which imposed themselves clinically as measles, but the first soon proved itself rötheln. Two weeks later two similar cases were admitted. At this juncture it occurred to the author to compare the blood counts of the cases with examples of true measles. It was found that in rötheln at the high point of the disease there is none of the disappearance of eosinophiles, which characterizes measles; nor is there the leucopenia regarded as normal for the latter.

## Deutsche medizinische Wochenschrift.

*May 29, 1913.*

**Two Cases of Eclampsia Cured with Hypophysis Extract.**—Schlossberger gives only the bare details of the cases which he terms an addition to those cured by conservative methods. Case I, aged 42; V-para; seizures began 1 a. m. on Nov. 19. When seen patient comatose, cyanotic. Gestation had reached term, but there were no pains. Os closed. Albumin, 5%. Sodium chloride retention. Patient received 1.19 hypophysis extract and 0.02 pantopon. The convulsions, which had been continuous from the first, ceased within a half hour. At 4 a. m. she became conscious, and the os was found to admit a finger. A second injection of hypophysis extract now given. At 6 a. m. a healthy child was expelled, and placenta followed in 5 minutes. Mother completely recovered but showed trace of albumin for months. The second patient was 23, II-para. Gravid in sixth month. Convulsions set in 11 p. m., Mar. 22. Unconscious, attacks of convulsions incessant. Face swollen, legs edematous. Pulse 140, small. Anuria. Os closed. Digitalis and diuretin given per os were vomited. Hypophysis extract and pantopon injected in same quantities as in first case and convulsions ceased within three-fourths of an hour. At 2 a. m. os admitted finger. Diuresis reappeared, urine containing an abundance of albumin. Second injection of hypophysis extract. At 4 a. m. six months' fetus expelled alive with placenta immediately following. Fetus survived 15 minutes. Patient fully recovered in 8 days, and the last traces of albumin disappeared in four weeks.

**Modern Styptics.**—Gisel enumerates in succession ergot preparations, hydrastis, styptol and stypticin, gelatin, horse blood serum, mammin and hypophysis extract. He next refers to attempts to combine some of these to form others of special merit. Styptol and stypticin are of course familiar names for certain salts of cotarnin. The ergots, cotarnins and hydrastin all act upon uterine hemorrhage. Stypticin is prepared by oxidizing narcotin, and in animal experiment seems akin to strychnine. Stypticin and styptol are both related to hydrastinin, which is derived from hydrastin, the active principle of hydrastis canadensis. Cotarnin is literally oxymethylhydrastinin. Stypticin as a derivative of narcotin possesses mild sedative powers. The cotarnins and hydrastins being thus affiliated may well be combined with some ergot preparation. The latter are multiple, having in part distinct properties. Some, of active principles, act as synergists with styptol. A decidedly improved styptic has been recently formed with a trade name from the ergot derivative secacornin and synthetic hydrastinum. It promises well, but thus far has been tested only by the author. It is recommended for any purpose in which an internal hemostatic is indicated.

**Extirpation of Spleen and Left Kidney; Complete Recovery.**—Mühsam relates a remarkable case in a boy aged 9 who had been run over. Patient found in deep shock, urine bloody. The evidences of peritoneal initation were present in a high degree and it was found that the kidney had prolapsed into the abdominal cavity, and all showed a complex injury. The belly was opened and active bleeding was seen to be present from the spleen. The latter organ was first extirpated after ligation of the vessels. The displaced kidney had not been ruptured but was contused; and, since the loss of a few more ounces of blood might have proved fatal, this organ was also tied off. The patient's organs were seriously impaired at first (blood count, remaining kidney-blood left behind in peritoneal cavity) so that the complete recovery eventually made was the more surprising.

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**Acholuric Jaundice after Splenectomy.**—W. Essex Wynter reports the case of a woman, aged 22, who had been jaundiced in varying degrees since birth, and who exhibited a large hard spleen which caused dragging pain in the left side. Splenectomy was performed. The incision was nearly vertical, about two inches to the left of the middle line. The spleen was much enlarged, weighing three pounds, and showed a deep sulcus due to the gastrosplenic omentum, simulating the hilum. All the mesenteric attachments were clamped and divided, the vessels being at once ligatured. The spleen was then removed. Not more than two ounces of blood were lost, chiefly from the spleen itself. The under surface of the diaphragm was found healthy and free from adhesions. The incision was approximated with "through-and-through" stitches; three buried sutures being left. Recovery was rapid, the temperature varying from 99° to 100° F. for a week and then remaining normal. Jaundice, which had diminished during a previous three weeks' stay at Clacton, had been entirely absent since the operation, and the pains in the left side had disappeared.—*Proceedings of the Royal Society of Medicine.*

**Arteriosclerosis with Absence of Both Radial Pulses in a Girl Aged 15 Years.**—C. W. Chapman reports the following case: F. G. complained of cough and orthopnea on exertion or exposure to cold. There was rheumatism on the mother's side. History: No special illness until four years ago, when she suffered from loss of power in the legs with loss of speech, the attack lasting fifteen minutes. There were several similar attacks during the following six months. Bronchitis two years ago. She is said to have had chalky lumps on her abdomen last summer. When first seen the area of cardiac dullness was increased in both directions, that on the left side being 9 cm. beyond the midsternal line; the apex beat was in the sixth space at the extreme margin of the dullness. The finger-tips were slightly congested. Catamenia not commenced. Teeth very bad. On admission the cardiac dullness was as stated; the subclavians were visibly pulsating, and aortic pulsation could be felt by the finger in the aortic notch, the brachial and radial arteries were hard and devoid of pulsation, the iliac arteries were visibly pulsating, but only feeble pulsation could be felt at the left posttibial and not at all on the right; the apex beat was in the sixth space and the action cantering. Urine: Specific gravity 1022, albumin a trace, sugar absent, no casts or red blood cells. Wassermann reaction negative. Since admission to the hospital the child has gained weight and has generally improved; the cardiac dullness is diminished and she can lie down in comfort. There is still a cloud of albumin. The skin on the abdomen is dusky, but no cyanosis or blanching is present.—*Proceedings of the Royal Society of Medicine.*

# Insurance Medicine.

## INSURANCE AND EUGENICS.

To the Editor of the Medical Record:

Sir:—I would like to propose for your consideration the advisability of a new line of insurance. There is a demand that those about to marry should furnish a certificate of health as a necessary preliminary. The present agitation seems to be confined to certain religious and social organizations, although one or two of the State legislatures have passed laws requiring such certificates. The important problem is who shall furnish such certificates? There will be many solutions. The certificate of the general practitioner is of doubtful value. A public bureau of experts responsible to the State will probably be necessary to furnish certificates which will be within the reach of a large proportion of our citizenship. The ideal source from which such certificates should issue would be a surety company, the reliability of whose certificates would be ensured by the responsibility of the company, which would not only furnish the certificates but would insure against any error on the part of its examiners.

It does not require much argument to prove that in no other way can we have certificates that are of any value, either for the primary object of protecting the individual or for the secondary object of improving the race.

Such certificates might be of two kinds: first, the ordinary kind to protect the individual should guarantee against the presence of contagious venereal disease and tuberculosis; second, there could also be issued eugenic certificates, based upon the study of the heredity of the applicant, showing the tendencies to certain degenerations and indicating the proper inheritance to be looked for in the wife or husband, as the case may be, so as to insure with the greatest probability the production of healthy offspring, with a tendency to ascend rather than to descend. Of course this is but a step to breeding for certain qualifications, for which proper insurance might be issued. But this is rather fanciful and chimerical.

Thomas W. Harvey.

Orange, N. J.

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**Prognostic Value of Slight and Transient Albuminuria.**—The presence of even a trace of albumin in the urine of applicants for insurance, seems to be the rock upon which the opinions of many of the insurance companies split, some viewing the condition with leniency, while others regard it with inflexible rigidity, much to the chagrin of the discomfited applicants. Henry W. Cook, Medical Director, Northwestern National Life Insurance Company, Minneapolis, Minn., states that in applicants over forty or fifty years of age it is of great importance to determine the presence or absence of even a slight albuminuria, as at this period of life it is indicative of more serious physical impairment elsewhere in the body; that the slighter degrees of albuminuria are almost constantly overlooked by the average examiner; that apparently the only way to obtain this very vital information is to have the uranalysis made at the home office, although an improvement can be expected from the recommendation to the examiners of the use of a more delicate and simpler test. The inability of the average practitioner to find albumin by the tests now ordinarily used—Heller's and the heat and acid test—is, however, subject to daily and hourly demonstration. Heller's test, while well suited for the laboratory expert, is most misleading with the careless, hurried work of the general practitioner. The care, the time, the light, are wanting, and the fine white line which could have been distinguished after half an hour's wait in a conical glass, in a bright light by trained eyes, is overlooked in the back office, after a hurried glance through a soiled test tube by unaccustomed eyes, confused by the dark pigment line or the cloud of urates. For a more accurate test the author recommends Ulrich's modification of the saline acid test, as being simple and delicate, and giving the positive reaction immediately. An acidulated saturated solution of chemically pure common salt is the only reagent required. The method is simplicity itself. Boil in a clean test tube several cubic centimeters of a saturated and filtered saline solution, acidulated to 1 per cent. with acetic acid. Overlay this with the urine, and if albumin is present even in small traces, a white line is readily seen at the point of contact. The relative delicacy of this test is indicated by the report often received; positive by saline test, absent by Heller's. A home office examination of the same specimen shows albumin distinct by all tests. Thus a general use of a more delicate test would give a clearer knowledge in a larger proportion of cases than is obtained at present. The author further states that it is to be expected that insurance companies should be in a somewhat chaotic state with regard to those medical points that are changing from time to time, and judgment has to be varied to meet existing conditions. Albuminuria cases, in which albumin is present in large quantity, cannot be accepted at standard rates, but to refuse a young farmer who had been plowing all day and had a trace of albumin in his urine afterward, or a young man who takes a cold bath every morning and shows a trace of albumin in his urine afterward, would be extreme and absurd. These are by far better risks than the man who sits at his desk all day and does not show albumin. As methods improve, so must judgment of these cases, and the better the uranalysis to discover the final process the better the judgment in reaching a favorable decision.—Medical Section, American Life Convention, February, 1913.

**American Association of Medical Examiners.**—The following officers were elected at the annual meeting of the American Association of Medical Examiners, which was held at the Hotel Radisson, Minneapolis, Minnesota, June 16: *President*, Dr. Henry Wireman Cook, medical director, Northwestern National Life Insurance Company, Minneapolis, Minn.; *Vice-President*, Dr. A. T. Gaillard, medical referee, Travelers' Insurance Company, Philadelphia, Pa.; *Second Vice-President*, Dr. W. W. Tompkins, Charleston, W. Va.; *Third Vice-President*, Dr. J. W. Guest medical inspector, Equitable Assurance Society, Louisville, Ky.; *Fourth Vice-President*, Dr. James H. Stowell, medical director, North American Life Insurance Co., Chicago, Ill.; *Secretary and Treasurer*, Dr. G. Strohbach, Cincinnati, Ohio.

This Association was organized in 1900, its objects being: (1) To bring about a more cordial cooperation between medical directors and medical examiners. (2) To encourage scientific work and study by medical examiners in their particular field. (3) To record and report the result of such work and study. (4) To enhance the efficiency of medical examiners.

# Book Reviews.

Tuberculin in Diagnosis and Treatment. By Louis Hamman, Associate in Medicine, and Samuel Wolman, Instructor in Medicine, both of the Johns Hopkins University. 381 pages. New York and London: D. Appleton & Co., 1912.

This book is dedicated to Henry Phipps, the founder of the Phipps Tuberculosis Institute of Philadelphia and of the Phipps Tuberculosis Dispensary connected with Johns Hopkins Hospital in Baltimore. It is a volume of nearly 400 pages and the first complete book of its kind written by American authors. Although they have drawn matters of value from the works of others, much of the contents of the book is based on the results of the authors' own work and experience. The scientific principles underlying the diagnostic and therapeutic use of tuberculin are carefully and impartially discussed in Chapter I. The choice of tuberculin, the preparation of tuberculin dilutions and the technique of the various tests are thoroughly considered in the subsequent chapters. Somewhat surprising to the reviewer is the tenacity with which the authors still cling to the conjunctival or ophthalmic tuberculin test. As is well known, most workers in tuberculosis have abandoned this method of using tuberculin for diagnostic purposes. When one bears in mind that slight ophthalmic troubles are not always recognized by the busy practitioner and that the instillation of even only a one per cent. solution is sure to aggravate an inflammatory process of the eye, it would seem unwise to continue with such tests, particularly when the safer cutaneous tests can be applied and equally good results obtained. The authors quote Baldwin as having made over a thousand instillations without any untoward results, but it must be remembered that he uses only a half per cent. solution of the precipitated tuberculin prepared by himself. In connection with the dangers from the ophthalmic test in general one must also bear in mind the tendency of older people to conjunctival inflammation and corneal ulceration. The authors themselves emphasize this latter fact in a chapter devoted to the dangers of tuberculin and here also add the well-known fact that a conjunctival instillation of tuberculin, whether there be a reaction or not, often renders subsequent administrations of tuberculin subcutaneously for diagnosis or treatment, if not dangerous at least unpleasant.

The portion of the book devoted to tuberculin as a therapeutic agent is excellent and, besides the well-known subcutaneous method, describes the newer oral, intrabronchial, rectal, cutaneous, percutaneous, intravenous, and intrafocal routes. All in all, it may be said the authors have succeeded in what they have aimed at—in producing a book that may serve as guide to those interested but inexperienced in the use of tuberculin and as a source where reliable if not exhaustive information on the subject may be sought.

Organic and Functional Nervous Diseases. A Text-Book of Neurology. By M. Allen Starr, M.D., Ph.D., LL.D., Sc.D. Professor of Neurology, College of Physicians and Surgeons, the Medical Department of Columbia University in the City of New York; Consulting Neurologist to the Presbyterian Hospital and to St. Mary's Free Hospital for Children; ex-President of the American Neurological Association and of the New York Neurological Society; Corresponding Member of the Société de Neurologie, and of the Société de Psychiatrie de Paris; of the Neurological Section of the Royal Society of Medicine, London, and of the Gesellschaft Deutscher Nervenärzte; Author of "Familiar Forms of Nervous Disease," "Brain Surgery," and "Atlas of Nerve Cells." Fourth Edition, Thoroughly Revised. Illustrated with 323 Engravings in the Text and 30 Plates in Colors and Monochrome. Price $6.00. New York and Philadelphia: Lea & Febiger, 1913.

The demand for another edition of this book gives Dr. Starr an opportunity for a careful revision of its contents, for many additions, and also for an arrangement which should make it of greater value to the student and practitioner. The general aspects of neurology, the method of examination of a patient, and the principles of diagnosis have been brought together in the first part. The various symptoms presented by nervous affections are there described and analyzed; the practical anatomy and physiology of the nervous system, necessary to their understanding, are concisely set forth, and the attempt is made to trace each symptom to its underlying disturbance of function in a definite nerve center or nerve tract. In part second the organic diseases are taken up and such additions as have been made to their knowledge in the past three years have been incorporated. The chapters upon poliomyelitis and syphilis of the nervous system have been rewritten. Much new material has been added to the chapter on tumors of the brain; and pellagra has been discussed. In part third functional diseases are fully presented, the space allotted to this department having been more than doubled. Fuller discussion is given to spasmodic neuroses, especially to the various forms of tic and myoclonus. Some functional paralyses, myatonia congenita, myasthenia gravis, and family periodic paralysis have been presented. Psychasthenia is considered apart from neurasthenia, and the subjects of the conscious and subconscious mental activities, of suggestion, and of psychoanalysis, and of hypnosis are fully discussed. In part fourth the diseases of the sympathetic nervous system are discussed; chapters have been added on symmetrical gangrene and angioneurotic edema. Trophic symptoms occurring in nervous disorders are also presented. Personal observation and experience in the presentation of each subject have been utilized.

Skin Grafting for Surgeons and General Practitioners. By Leonard Freeman, B.S., M.A., M.D., Professor of Surgery in the medical department of the University of Colorado; Surgeon to St. Joseph's Hospital, the national Jewish Hospital and the City Hospital, Denver, Col. With 24 illustrations. Price $1.50. St. Louis: C. V. Mosby Company, 1912.

This book contains in small space the essential features of this branch of surgery, together with excellent illustrations. The author opens with a cursory history of skin grafting, from the time of the Hindus, 2,000 years ago, to the work of modern times begun by Reverdin in 1869. Reverdin's method is clearly set forth, the size of grafts, the placing of them, dressings, etc. Thiersch's method is next described in detail and Freeman considers it the simplest and most reliable as well as the one usually employed in cases of contractures, scars, etc. A review is given of the Wolfe-Krause method as first used by Wolfe in cases of ectropion and as modified by Krause. Hirschberg's skin-periosteum-bone method is also described. Different anomalies in skin-grafting are discussed, but the Thiersch method is reverted to in almost all cases. Anesthesia and all details are gone into together with a complete review of the literature exclusive of the excellent work recently done at the Rockefeller Institute.

On Alcoholism. Its clinical aspects and treatment. By Francis Hare, M.D., medical superintendent of the Norwood Sanatorium, Beckenham. Philadelphia: P. Blakiston's Son & Co., 1913.

This book is based upon a large sanatorium and hospital experience and treats not only of the medical side but to some extent of the psychology underlying this state. Hare believes that alcoholism should not be called a disease, as it may be diminished by voluntary effort. He describes the causes of it as extrinsic (grief, etc.) and intrinsic (mental depression with raised blood pressure, asthma, dysmenorrhea, etc.). He divides the clinical manifestations into two classes—recurrent and continuous. The former group contains dipsomania and pseudodipsomania and the latter, chronic inebriety and chronic sober alcoholism. The symptoms are next set forth, among which albuminuria is given as an index to oncoming alcoholic accidents. The corollary of tolerance is epigrammatically described as the intolerance of sudden withdrawal. Intolerance may amount to pathological drunkenness or mania-à-potu. Hare agrees with the lay opinion that sudden withdrawal is dangerous and discusses delirium tremens and alcoholic epilepsy. He agrees with Jauregg's theory that delirium tremens is due to an anti-alcohol formed in the system. He then discusses treatment as to tapering, rest, drugs, etc. The book is a well-rounded out discussion, interestingly written.

Systematic Case-Taking. A Practical Guide to the Examination and Recording of Medical Cases. By Henry Lawrence McKisack, M.D., M.R.C.P. London. Physician to the Royal Victoria Hospital, Belfast; Author of "A Dictionary of Medical Diagnosis." Price $1.50 net. New York: Paul B. Hoeber, 1913.

In this work the ordinary syllabus of case-taking is amplified into a short manual, which not only indicates the steps to be taken by the clinical clerk in order to obtain the information he has to record, but which also discusses the diagnostic significance of the various symptoms discovered. This small handbook will certainly prove useful, containing as it does a description of the various means for the investigation of disease, and can be read with profit by every practitioner.

Solidified Carbon Dioxide in the Successful Treatment of Cutaneous Neoplasms and Other Skin Diseases, with Special Reference to Angioma, Epithelioma, and Lupus Erythematosus. By Ralph Bernstein, M.D. Clinical Instructor in Skin Diseases, Hahnemann Medical College, Philadelphia, Pa.; Consulting Dermatologist to the Woman's Southern Homeopathic Hospital, Philadelphia, Pa.; Consulting Dermatologist to the J. J. Lewis Crozier Hospital and Home for Incurables, Chester, Pa.; Consulting Dermatologist to House of Detention for Juveniles, Philadelphia, Pa.; Dermatologist to West Philadelphia General Homeopathic Hospital and Dispensary; Dermatologist to Hahnemann Hospital Dispensary, Philadelphia, Pa., etc. Fully illustrated. Hammond, Ind.: Frank S. Betz Co., 1912.

The author's intention is to present the subject as briefly and as concisely as is possible with clearness, and to give in a practical way the results of his clinical experience in the treatment of various cutaneous manifestations for which he has found solidified carbon dioxide an admirable agent. In this little work of less than one hundred pages he considers the origin of carbon dioxide as a therapeutic measure; general considerations; explanation of its action on the skin; superiority over other methods of procedure; method of solidifying; applications, and therapeutics.

Safeguarding the Special Senses. General Advice Regarding the Use and Preservation of the Eyes, Ears, Nose, and Throat. By Henry O. Reik, M.D., formerly Associate in Ophthalmology and Otology in the Johns Hopkins University, and Surgeon in the Baltimore Eye, Ear, and Throat Hospital, Baltimore, Md. Illustrated. Price 75 cents net. Philadelphia: F. A. Davis Company, 1912.

In view of the fact that specialists are constantly crying to the family physician and to the public that prevention is not only cheaper but easier and better than cure, this volume is written to point out to the person of average intelligence that proper care of the eyes in early life prevents the onset of cataracts and other intraocular diseases in old age, and that the removal of diseased tonsils and adenoid growths permits the child to develop normally; and furthermore that proper attention to colds in the head and early treatment of running ears would wipe out 80 per cent. of the cases of brain abscess and purulent meningitis.

Leitfaden der Praktischen Kriegschirurgie. Von Dr. W. von Oettingen, Chirurg in Berlin-Wilmersdorf. Price 9.50 marks. Dresden und Leipzig: Verlag von Theodore Steinkopff, 1913.

In case of declaration of war there is very little time for the members of the medical profession who enlist to familiarize themselves with military surgery, and for this reason this book is published, containing a concise, general, and special consideration of the injuries sustained in war and their treatment by one who obtained his experience in the Russian-Japanese war.

Die Luetischen Erkrankungen der Bauchorgane. Von Hofrat Dr. Th. Hausmann in Rostock (vormals in Orel und Tula). Price 1.80 marks. Halle a. S.: Carl Marhold, 1913.

The author believes that this little monograph, the first of its kind in the literature of the subject, fills a need in the consideration of abdominal syphilis, for since Neumann's publication on "syphilis," sixteen years ago, this branch of internal medicine has not been taken up again thoroughly. Lues of the elementary tract, pancreas, liver, and spleen are discussed, while that of the kidneys is omitted. Of special interest are the chapters on retroperitoneal and mesenteric tumors and lues of the peritoneum. Syphilis of the stomach receives the most attention because of the scant notice given to it in text books and manuals.

Elementary Biology, Plant, Animal, Human. By James Edward Peabody, A.M., Head of the Department of Biology, Morris High School, Bronx, New York City; Author of "Studies in Physiology" and "Laboratory Exercises in Anatomy and Physiology," and Arthur Ellsworth Hunt, Ph.B., Head of the Department of Biology, Training High School, Brooklyn, New York City. Price $1.25 net. New York: The Macmillan Company, 1913.

In the preparation of this textbook the authors have succeeded to an unusual degree in the selection of such material from the vast field of biology as tends to unify the study of plant, animal, and human biology. The experimental work is well chosen and the way in which the scientific side of the experiments sets forth the practical bearings of the subject is especially to be commended. The authors have been fortunate in securing the assistance of many well-known biologists. As an elementary work this textbook is far superior to others which have come under our notice.

Mendel's Principles of Heredity. By W. Bateson, M.A., F.R.S., V.M.H.; Honorary Fellow of St. John's College; Director of the John Innes Horticultural Institution. Price $3.50 net. Cambridge: At the University Press; New York: G. P. Putnam's Sons, 1913.

This is the third impression, within four years, of a valuable book. It does not differ much from previous editions except in the correction of errors and the addition of certain appendices in which the author has tried to keep the subject abreast of the times. As a matter of fact, a future revision is hinted at by the author, a knowledge of such subjects as "heredity of sex," "coupling and repulsion," etc., being at present really in a transition stage. The object of the book, the author states in his preface, is to give a succinct account of discoveries in regard to heredity made by the application of Mendel's method of research. By the adoption of the Mendelian principles the study of heredity has become an organized branch of physiological science. The Mendelian principles are thoroughly discussed by Professor Bateson, and a suggestive chapter is devoted to their practical application. There is apparently no limit to such practical applications. The author foresees for them, for example, "not merely advances in the art of breeding animals and plants, but a control over the destiny of our own species." Speaking of Mendel himself he says: "The types of the great discoverers are most various. The wild, uncertain, rapid flash of genius; the scattered half-focused daylight of generalization; the steady, slowly perfected ray of penetrative analysis—are all lights in which truth may be seen. Mendel's faculty was of the latter order." His work was long lost to the world, but its acceptance at the present day justifies his early confidence when he said: "Meine zeit wird schon kommon." The book is of fascinating interest and of practical value. There are forty-seven illustrations, six of which are colored plates.

Die Leberkrankheiten. By Dr. C. A. Ewald. Leipzig: Georg Thieme, 1913.

Professor Ewald's new book treats in a thorough manner of the diseases of the liver. In reference to functional disturbances of the liver, Ewald expresses himself as follows: "If finally we consider all methods offered by the functional diagnosis of the liver we must confess that the result, in spite of much hard work, is only small and that we possess a number of methods which keep us informed of the workings of the organ in general, but that none of them suffices to permit us to recognize with certainty any definite pathological condition." The author is of the opinion that cirrhosis of the liver is in the great majority of instances associated with an increase in the size of the organ (hypertrophic cirrhosis), and as far as the treatment of the ascites in cirrhosis is concerned the author considers abdominal puncture the sovereign means. He says: "Long ago (1885) I recommended the early and if necessary repeated punctures of the abdomen and showed that the loss of albumin is negligible, the effect on the blood-vessels, however, being most valuable for the local and general circulation. In one case I punctured 173 times, at first at 4 to 6 weekly intervals. The patient improved and finally left the hospital in fairly good condition. Since then I have practised early paracentesis wherever possible and have become one of its adherents in spite of warnings, to my mind unwarranted, against it." Almost at the same time Drummond and Morison, as well as Talma, proposed and executed the fixation of the omentum and possibly the spleen to the anterior abdominal wall for the purpose of establishing a collateral circulation. This procedure has, however, not proved as valuable as it would appear to be at first sight. The results have been varying, about 30 per cent. favorable. One of the most recent writers, Lieblein, had in fifteen cases only three marked successes and three fatal issues. The latter were particularly interesting from the fact that the operation showed that, although strong adhesions between omentum and abdominal wall already existed, a marked ascites had developed. The fact that the present volume has been written by one of the greatest clinicians, giving us the result of his vast personal experience, makes it of inestimable value. This is still further enhanced by the presence of numerous drawings, both in monotone and in colors, executed by Professor Ewald himself. The book can be recommended to every physician as one of the best and most valuable written on diseases of the liver.

The Care and Treatment of European Children in the Tropics. By G. Montagu Harston, M.D. (London), M.R.C.S. (London); Fellow of the Society of Tropical Medicine and Hygiene; Fellow of the Royal Society of Medicine; Member of the Ophthalmological Society of the United Kingdom; Ophthalmic Surgeon to the Tung Wa Hospital, Hong-Kong; and Examiner in Materia Medica and Therapeutics, Hong-Kong College of Medicine. With Introduction by Sir Patrick Manson, G.C.M.G., M.D., LL.D. Price $3.00 net. New York: William Wood & Company, 1913.

After discussing the climatic factors influencing European children in the tropics and the incidence of disease among these children, the writer points out the necessity of more painstaking care of the European child in the tropics and suggests certain modifications in hygiene. The body of the work is devoted to a description of the tropical diseases as they manifest themselves in children. While many physicians are familiar with tropical diseases in the adult, few have much knowledge of how they affect the child from the temperate zone, and hence the book opens up a new field for investigation. It contains many useful hints as regards the treatment of tropical diseases in children and is lucidly and simply written.

Die Exudativlymphatische Diathese. Eine Kurze Skizze für den Practischen Arzt. Von Privatdozent Dr. Paul Sittler. Colmar i. Els. früherem Dozenten für Kinderheilkunde an der Universität Marburg a. L. Price 3.50 marks. Würzburg: Curt Kabitzsch, 1913.

This interesting monograph details in a clear, sketchy manner the symptom complex of the exudative lymphatic diatheses, a picture which often remains unrecognized by the specialist and the general practitioner, and the individual symptoms of which are treated symptomatically without an understanding of their underlying association. To this group belong children suffering from chronic nasopharyngeal catarrh, Eustachian catarrh, and recurring otitis media, all of which are aberrations of a fundamental constitutional anomaly. The general picture of the exudative lumphatic diathesis, the special forms as they affect the various systems of organs, and the organs of special sense are discussed. The relation of this condition to the infectious diseases, the school, and social hygiene is dwelt upon.

The Internal Secretory Organs: Their Physiology and Pathology. By Prof. Dr. Artur Biedl, Vienna. With an introductory preface by Leonard Williams, M.D., M.R.C.P.; Physician to the French Hospital; Assistant Physician to the Metropolitan Hospital. Translated by Linda Forster. Price $6.00. New York: William Wood and Company, 1913.

The attention of many investigators in scientific medicine is turning at present from the study of parasitic diseases to those pathological conditions due to excessive or diminished secretion of certain of the so-called ductless glands, among them the thyroid, thymus, suprarenal, hypophysis, pineal, and generative glands. It has long been realized that some of the glands which pour out true secretions or excretions, such as the kidney, and pancreas, and the intestinal mucosa, may have as well internal secretions equally important to the animal economy. Our first knowledge of internal secretions is due to Thomas Addison, who described the clinical complex which bears his name and is connected with tuberculosis of the suprarenal gland. Addison's observations were completed upon a chemical and physiological basis by Oliver and Schaefer, who in 1894 announced that the intravenous injection of an extract of suprarenal was followed by specific and well-defined physiological results. Our knowledge of the thyroid secretion, though the problem has been attacked from many points by able investigators, is still incomplete, partly because of the complex chemical composition of the thyroid specific substance which has not yet been unraveled, and partly because of the many symptoms which accompany any functional alteration of this gland. An example may be found in the active discussion which is now going on as to whether exophthalmic goiter is due to an increased or a perverted secretion of the thyroid or to some entirely unknown lesion of the nervous system. The most complete statement of our present knowledge of such internal secretions is that which appeared some years ago from the pen of an accomplished German physician, and the medical profession owes a debt of gratitude to the publishers for having brought out this important volume in a very good and accurate English translation. After a general introduction, in which the history of the subject is developed and a classification of the various hormones is attempted, the special part, which occupies the larger portion of the book, begins with the thyroid, covering the anatomy, histology, and chemistry, the anatomy of the parathyroids and the physiology of these organs, the results of hypersecretion and atrophy, and thereapeutic results. Following this the thymus is considered, then the suprarenal system, then the hypophysis, to the knowledge of which our own Cushing has contributed so much. Then follows a short section on the pineal gland; and, finally, in the last one hundred pages, the internal secretions of the generative organs, the pancreas, the gastrointestinal mucosa, and the kidney are considered. A bibliography of 138 pages, down to 1911, is appended, though the author says that even this is not complete. Although the text of the German edition is now two years old there is very little of real importance in this phase of medicine which has been published since the book was issued, so that the volume as presented in this English form may be considered as the best study of the subject of internal secretions now in print.

Foods: Their Origin, Composition, and Manufacture. By William Tibbles, LL.D., M.D. (Hon. Causa), Chicago; L.R.C.P., Edinburgh; M.R.S.C., England; L.S.A., London; Medical Officer of Health; Fellow of the Royal Institute of Public Health, etc.; Author of "Food and Hygiene," "The Theory of Ions," etc. Price 18 shillings net. London: Baillière, Tindall & Cox; Chicago: The Chicago Medical Book Company, 1912.

The great revival of interest in the questions of human metabolism and the dietetic treatment of disease is revealed in the production of books of the nature of this on the composition, origin, and manufacture of foods. Part I treats of the chemical constituents of animal and vegetable foods from the point of view of the proximate principles. Part II treats of food products derived from animals—meats of all sorts, milk, cheese, butter, and oils. Part III of foods of vegetable origin; Part IV of condiments and spices; Part V of beverages. There is contained a large amount of valuable information not ordinarily accessible on the derivation and preparation of foods; for example, all of the various types of cheese are described, their methods of manufacture, as far as known, are outlined, and analyses showing their food value are given. It is interesting in an English book to note how frequently the reports of the Bureau of Animal Industry and other publications of the United States Government are referred to as authoritative. Minor defects can be pointed out, such as the omission of the Babcock method for testing fat in milk, the omission of analyses of special breads recommended in the treatment of diabetes for their diminished carbohydrate content, and the lack of recent references to subjects of considerable interest; for example, the toxic effect of methyl alcohol, the only reference to which is an article dated 1902. This subject has become of such great medicolegal importance that it is a pity the quite satisfactory abstract of the clinical symptoms is not complete. There is no mention of optic nerve atrophy which is a prominent symptom in wood alcohol poisoning, and the reader is not put in touch with recent publications on the subject. Except for such minor points as these, however, the volume is most excellent and contains much information of great use to physicians.

The Development of the Human Body. A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D., LL.D., Professor of Anatomy in the University of Toronto; formerly Professor of Anatomy in the University of Michigan. Fourth Edition, Revised and Enlarged. With 285 Illustrations, several of which are printed in colors. Price $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1913.

This convenient little handbook of embryology now appears in its fourth edition, an evidence of its value to the student-body. It is well illustrated, well printed, and well bound, and within its limitations of space remains one of the best of the smaller texts on embryology.

Formulaire des Consultations Médicales et Chirurgicales. By G. Lemoine, Professor of Clinical Medicine, and E. Gérard, Professor of Pharmacy and Pharmacology. Faculty of Medicine and Pharmacy of Lille. Sixth Edition. Price 8 francs. Paris: Vigot Frères, 1913.

This book is divided into two parts. The first is a complete materia medica with preparations, use, and dosage of various drugs of the pharmacopeia. The second part consists of medical consultations in which each disease is discussed with symptoms and complications, together with therapeutic measures for its relief or cure. The book seems likely to be useful.

# Society Reports.

## AMERICAN MEDICAL ASSOCIATION.

*Sixty-Fourth Annual Meeting, Held at Minneapolis, Minn., June 16, 17, 18, 19 and 20, 1913.*

(Special Report to the MEDICAL RECORD.)

(*Continued from page 1149.*)

### HOUSE OF DELEGATES

*Wednesday, June 18.—Second Day.*

**A Speaker for the House.**—A special meeting was called to consider the resolution presented on the previous day providing for the appointment of a speaker for the House to relieve the president of more arduous duties and to permit the executive to give his time to formulating the policy of the organization and presiding only at the more important meetings. After a lengthy debate the House decided that it was not advisable or necessary to have such a speaker at the present time.

**Special Committee on National Board of Health Dissolved.**—This committee, which was appointed at the meeting in St. Louis in 1910, in its report to the House entered complaint because it was not given sufficient money to carry on its work. A discussion of the work of this committee ensued and finally the committee, consisting of Drs. William C. Woodward of Washington, H. M. Biggs of New York, H. P. Walcott of Cambridge, Mass., J. N. Hurty of Indianapolis, J. N. McCormack of Bowling Green, Ky., W. A. Evans of Chicago, S. G. Dixon of Harrisburg, Pa., and W. H. Welch of Baltimore, was dissolved. The reason given for this action was that the work of the committee conflicted with that of the Council on Health and Public Instruction and that this council would carry on the work of prosecuting a campaign for a National Health Department.

*Thursday, June 19.—Third Day.*

**Associate Members.**—SAMUEL HOPKINSON ADAMS was elected an associate member of the association and was granted the privilege of the floor. After acknowledging the honor conferred upon him he declared that in fighting the advertising quack the medical profession had been making the mistake of aiming at the inside of the bottle, at the medicine, instead of the outside of the bottle, the label; quack remedies were one-tenth medicine and nine-tenths advertisement. They must sell through the newspapers. Through the work of vigilance committees the newspapers no longer accepted fraudulent advertisements. Many had voluntarily cleansed their columns and others were on the verge of decision. The papers did not like these advertisements.

**Supplementary Report of Board of Trustees.**—Dr. W. W. GRANT of Denver said that the Board of Trustees wished to call attention to the offer of the home for the widows and orphans of physicians and recommended that the matter be considered by the Judicial Council. They wished to authorize an appropriation for preliminary work in the coming commemoration of the opening of the Panama Canal and they recommended that the present committee be continued or a new one appointed to take charge of the preliminary work. They further recommended that the commemoration take the form of a Congress on Tropical Medicine and that a permanent movement be provided for by popular subscription in commemoration of American Preventive Medicine and Sanitary Science. In this project they recommended that the cooperation of the Association of American Engineers be invited and that Congress be petitioned for permission to erect such a monument and invited to appropriate a suitable site.

**A New Section.**—The resolution providing for a new section to be known as the Section on Gastroenteroproctology was adopted by the House.

**Supplementary Report of the Judicial Council.**—Dr. ALEXANDER LAMBERT of New York said that the matter of the application of the medical societies of Porto Rico for affiliation with the American Medical Association had been considered and the status of the medical societies of Porto Rico investigated and the Judicial Council recommended them for membership in the American Medical Association. This recommendation was adopted.

**An Advertising Bureau for State Journals.**—Dr. C. R. WOODSON of St. Joseph, Mo., presented a resolution to the effect that as the State journals were dependent upon advertising material for financial help and that as there was a tendency among independent journals to make combinations in order to aid their advertising departments, and as the State journals must have some help, it would be advisable to inaugurate an advertising bureau for the benefit of those journals. The resolutions also provided for an appropriation sufficient to establish such a bureau on a working basis. This resolution was adopted by the House.

**Congratulatory Resolutions for Newspaper.**—Dr. A. T. MCCORMACK of Bowling Green presented resolutions endorsing the stand that the Minneapolis *Journal* had taken with reference to the exclusion of advertisements of quackery and congratulating the paper for having proved that a newspaper could be conducted successfully without accepting such advertisements. A resolution was also adopted endorsing the Printers Ink bill.

**Election of Officers.**—The following officers were elected for the year 1913: *President*, Dr. Victor C. Vaughan of Ann Arbor, Mich.; *First Vice-President*, Dr. Walt P. Conaway of Atlantic City, N. J.; *Second Vice-President*, Dr. Frank C. Todd of Minneapolis, Minn.; *Third Vice-President*, Dr. Lillian H. South of Bowling Green, Ky.; *Fourth Vice-President*, Dr. S. G. Kahn of Salt Lake City, Utah; *Secretary*, Dr. Alexander Craig of Chicago, Ill.; *Treasurer*, Dr. William Allen Pusey of Chicago, Ill.; *Trustees*, Dr. W. W. Grant of Denver to succeed himself, Dr. Frank J. Lutz of St. Louis to succeed himself, Dr. Oscar Dowling of Shreveport, La., to succeed Dr. C. E. Cantrell of Greenville, Texas, and Dr. Thomas McDavitt of St. Paul to succeed C. H. Dougherty, deceased; *Member of Judicial Council*, Dr. A. B. Cooke of Nashville, Tenn.; *Member of Council on Health and Public Instruction*, Dr. W. S. Rankin of Raleigh, N. C.; *Member of Council on Medical Education*, to fill Dr. Victor C. Vaughan's place, Dr. H. D. Arnold of Boston, Mass.

**Place of Meeting.**—Atlantic City was chosen as the place of meeting in 1914.

**Awards on Scientific Exhibit.**—The committee on awards reported that they wished to commend the exhibit as a whole. The gold medal had been awarded to Dr. C. C. Bass of Tulane University for research work in malaria. Among those receiving honorable mention were Drs. Erwin Smith, L. B. Wilson, W. D. Gatch, J. S. Horsley, and R. D. Carmen.

### SECTION ON DISEASES OF CHILDREN

*Tuesday, June 17—First Day.*

DR. HENRY DWIGHT CHAPIN OF NEW YORK IN THE CHAIR.

**Rupture of Mediastinal Lymph Node into Bronchus.**—Dr. A. L. GOODMAN of New York described a case showing practically no symptoms until the sudden onset of the acute condition, which required almost instant surgical intervention. He thought the cases were properly divided into two classes, tuberculous and non-tuberculous, and that the non-tuberculous were due to streptococcic, or staphylococcic infection or a mixture of the two. He said that prognosis depended upon whether the node remained small or went on to suppuration or perforation. He considered that where medical treatment could be used it would be practically that used for incipient tuberculosis and guaiacol and arsenic given for a period of a year or more, but where the condition was sudden in onset and violent, surgery should be resorted to at once.

Dr. WILLY MEYER of New York said that the case reported had been his and that he considered the prompt surgical intervention the means of saving the patient's life. Such conditions were not rare in adult practice and he cited the case of a young woman of his practice who was brought to the hospital following a slight accident from an automobile and developed a cough and symptoms of lobular pneumonia and thoracic trouble, probably tuberculous. From the *x*-ray picture it was determined that she had a cold abscess which had perforated into the bronchial tree. He thought that in such cases, unless there was immediate outlet for the mass, the condition proved fatal.

Dr. ISAAC ABT of Chicago said that from the studies of men who had seen thousands of cases it had been determined that tuberculous infection through the bronchial glands was extremely common and that the rapid strides made in the handling of these cases made treatment of them fairly satisfactory, but such results as Dr. Goodman had had were brilliant and noteworthy.

Dr. ALBERT WILLIAM MEYERS of Milwaukee brought out the use of the bronchoscope in the diagnosis of such cases as a supplemental aid.

Dr. C. F. WAHRER of Fort Madison, Ia., wished to know what other infection was found in these conditions besides the tuberculous.

Dr. Goodman, in closing the discussion, said that in the majority of cases the tubercle bacillus was the exciting cause, though in the case reported, after working eight months, he had not been able to demonstrate its presence. He thought the previous literature justified him in classing the cases as tuberculous and non-tuberculous and the non-tuberculous as due to streptococcic, staphylococcic, or mixed infection. He thought the bronchoscope impractical because of the sudden onset of the cases. Possibly in the future where large masses of lymph nodes were found the Sauerbruch chamber would be indicated.

**Report of a Case of Staphylococcus Meningitis in a Child.**—Dr. Frank Spooner Churchill of Chicago read the report of a case in a 21-months-old child with history given by the mother pointing to intestinal rather than meningeal symptoms. The only meningeal symptoms were slight rigidity of the neck and drowsiness. Lumbar puncture showed the presence of staphylococci. Two more lumbar punctures were made and from the last an autogenous vaccine was prepared, after a single injection of which the temperature immediately became normal and the child made an uneventful recovery with no relapse after four years. He called attention to the fact that no conclusions could be drawn from the single case but he wished to report it, hoping others would try similar treatment in like cases.

Dr. H. Lowenburg of Philadelphia said that in a case of lobar pneumonia that developed streptococcic synovitis in which he used a stock vaccine there was a marked reduction of temperature for about three days. He said that his patient was extremely emaciated and died following the operation, but he thought the vaccine had a marked influence in reducing the temperature.

Dr. G. P. Gencepach of Denver said that he thought if the skin was well washed and if the site of the puncture was touched with tincture of iodine there was practically no danger of contamination. He called attention to the necessity of avoiding deep puncture so as not to enter the blood stream.

Dr. Churchill thought there must be some therapeutic advantage in repeated lumbar puncture and regretted that in his case it had not been done oftener. He used a stock vaccine until he could obtain the autogenous, but had made no comparative studies between the two. He did not believe contamination from the skin was likely if ordinary asepsis was practised. He urged practitioners to perfect their technique of lumbar puncture.

*Wednesday, June 18—Second Day.*

**Acute Acid Intoxication in Children.**—Dr. Thomas C. McCleave of Berkeley, Cal., in reading this paper called attention to the prevalence of a fairly definite symptom complex, in which acidosis was a constant factor, occurring in children of from two to ten years. He thought that the clear clinical picture presented made a differential diagnosis fairly easy, but called attention to the obscurity of the etiological factors and the fact that because so few cases resulted fatally, there were few confirmatory data obtainable through autopsy. He had determined from his experience that while the attacks were always due to intestinal toxemia, nervous conditions were a large element and no other single remedial measure so important as attention to the throat. He called attention to the fact that when children suffered from repeated attacks there was sure to be some degree of toxin absorption which acted upon the liver and by nervous, vasomotor or other disturbance precipitated the attack. This being the case, he said, they offered excellent opportunity for satisfactory therapy through the removal of causative factors, the regulation of diet and hygiene and the periodical administration of alkalies. He said that as the condition was more common than was generally supposed it was necessary that physicians should be familiar with it.

Dr. J. Zahorsky of St. Louis took exception to the descriptive term "dusky" as applied to the appearance of the faces of these patients. He said his were almost uniformly mottled and flushed. He thought that one thing would often prove of diagnostic value. He reported a case in his practice that had entirely cleared up after circumcision and thought this pointed rather to the fact that any slight operation would be of benefit in the condition because of its result upon the nervous organism of the child rather than that the removal of adenoids, tonsils, or appendix was curative. He considered the disease directly related to migraine because his cases usually presented in families showing general metabolic disturbances. He urged physicians to pay particular attention to the liver because his cases all showed enlargement readily discernible by palpation.

Dr. J. Ross Snyder of Birmingham, Ala., called attention to Dr. Parks' classification several years ago of enlarged liver as part of the symptom-complex. He said that in the South where the condition was particularly common it was seen in children much younger than the age limits given in the paper—occurring most commonly between the eighth and eighteenth month. He thought that fully 80 per cent. of this type of cases resulted fatally.

Dr. C. H. Johnson of Grand Rapids, Mich., thought that the condition was too often confused with gastro-intestinal troubles and that little attention had been given to it in the literature. He considered diseased tonsils a large factor because in his own son the complete enucleation of the tonsils had cleared up the condition, and all of his cases had begun with throat disturbance. Medicinally he had used morphine hypodermically to control the vomiting and credited it with saving some of his cases from a fatal termination.

Dr. G. D. Ryan of Des Moines reported that his son had had repeated attacks of vomiting of acid origin and had responded well to 5 per cent. solution of bicarbonate of sodium administered by the drop method.

Dr. Thomas B. Cooley of Detroit thought that cases of acidosis should be distinguished from recurrent vomiting. He said that all he had seen seemed to be accompanied by acute infection, usually of the influenzal type, and that prostration was very great from the start, with low temperature and great air hunger. His cases did not show as severe vomiting, nor was this so hard to check as in cases of recurrent vomiting where there was a strong nervous element. His patients were very sick and sometimes died in twelve hours after the onset of the disease.

Dr. Isaac A. Abt of Chicago called attention to the necessity for a more general and careful study of acid conditions of the urine. He said that many infants, particularly at the weaning period, suffered from gastrointestinal disturbances, such as slight diarrhea, rapid pulse, moderate fever, very rapid breathing and soon after great prostration and constipation even to complete obstruction of the bowel and had been classified under the general head of gastrointestinal disturbance. More careful study would show these to be suffering from acidosis. He concluded from his experience that some toxic protein was responsible for this almost uniformly fatal type of toxemia.

Dr. John Lovett Morse of Boston said that he had had many cases which he was sure were due to acid intoxication, because even the parents had been able to detect the odor of acetone in the urine. His experience had been that many other things were being called acid intoxication rather than that this condition was being overlooked. He laid this to the fact that a little acetone had been found in the urine, and the condition had been ascribed to that without further consideration of the findings. He said that acetone or diacetic acid gave symptoms only when present in considerable quantity.

Dr. H. T. Price of Pittsburgh thought it hardly likely that the nervous system had much to do with the condition, as children allowed to continue living in the same environment recovered when other conditions were attended to.

Dr. L. R. de Buys of New Orleans thought that when physicians generally recognized the gravity of the disorder, which previous literature had not emphasized, it would be more carefully studied and promptly met. His cases showed facial flushing almost resembling that of scarlatina, and as the condition improved it gradually disappeared. He had noticed that the temperature, at first high, fell promptly with the cleaning out of the alimentary canal. If it did not come down, he said, it indicated that the elimination of toxins was checked.

Dr. H. Lowenburg of Philadelphia cited a case in a child of four in which examination of the urine showed no evidence of intoxication, although the diagnosis of acidosis had been made. *X*-ray revealed a marked degree of pyloric spasm. The child recovered with two stomach washings and had not had a recurrence in five months. In another case in his practice the child had been sent to him with a diagnosis of recurrent vomiting. In this case the *x*-ray revealed a kink in the bowel in the region of the sigmoid. The child had been very constipated. This case recovered with high enemas of olive oil. He had used bicarbonate of sodium and Fisher's solution under the skin, and in each case had had sloughing of the skin—to such an extent in one case that he had contemplated skin grafting. Since that time he had been using it by the so-called Murphy treatment and found that his patients bore it well, and with care the catheter could be retained and the same results obtained.

Dr. McCLEAVE in closing the discussion accepted the correction of Dr. Zahorsky as to the flushing of the face, but said that he had intended to convey the picture of the bluish-pallid ring under the eyes, the whiteness around the lips, and the flushing of the cheeks so characteristic of the disorder. He again emphasized the points regarding the diseased tonsils and appendix and the presence of adenoids as sources of the toxin and said that the liver being so susceptible to toxins it showed their presence first, and that with their removal in his experience the liver symptoms had cleared up. He thought that the symptom-complex appearing in very young children was entirely different than that under discussion and had not considered them. He considered some of the neglect of the subject by the profession to be due to the fact that in the West the condition had not been as common as in the South and East, and therefore was confused with other gastrointestinal disorders.

**The Protein Poison and Its Relation to Disease.**—Dr. VICTOR C. VAUGHAN of Ann Arbor said that from his experiments all proteins, both particulate and formless, both cellular and in solution, had been found to contain a poisonous group, although just what the chemical condition of the poison was he was not prepared to state. It was, however, a very real and active poison, as had been shown when it killed the experimental guinea pigs. He said that when, for any reasons, proteins taken into the alimentary canal escaped digestion and were absorbed unchanged they underwent parenteric digestion, and in that process the poison was set free. He said that in enteric digestion the poison was most marked in its action at or about the peptone stage; that when digestion was normal and proceeded beyond that stage the poison was destroyed by further cleavage. He said that as the intestines of children were more permeable to proteins than those of adults, children suffered more generally from gastrointestinal disturbances, and because of the more rapid absorption from the intestines during the summer time, incompletely digested proteins were taken into the system. From this he concluded that even if it were possible to get absolutely clean milk summer disorders in young children would not markedly disappear, and even suggested that the presence of bacteria might be an advantage as they split up the milk and made it more readily digestible. From his work he had determined that when the proteins were broken up by the parenteric digestion the poison was set free in the blood and tissues and manifested its full effect.

Dr. J. ZAHORSKY of St. Louis said that since it had been generally recognized by American physicians that there were certain summer diarrheas that were not due to bacteria it was beginning to be supposed that their exciting cause would be found in the protein, especially in those cases that could not be cured by changing the food for a day or two.

Dr. MARY STRONG of Omaha said that in her clinical work she had seen evidences of what Dr. Vaughan had demonstrated in the laboratory to be the results of absorption of protein through the intestines caused by heat and advocated strongly looser, cooler dressing of infants to prevent summer diarrheas.

Dr. C. H. JOHNSON of Detroit said that if these ideas and those of Finkelstein could be put together there would probably be a working hypothesis, as Finkelstein had reduced the mortality in his institution from about 80 to 6 or 7 per cent.

Dr. CLIFFORD G. GRULEE of Chicago said that the prime factor of this theory was that the protein must be absorbed through a deranged gut. He called attention to the work of Benedicks and Samuelson as showing by the subcutaneous injection of sugar solutions made of fresh distilled water and old distilled water that no ill effects were caused by the former while the latter gave a prompt rise of temperature, and that the same results had been produced with the salt, which would seem to contradict some of the views held by Finkelstein. He thought it very probable that the intestinal mucus was a source of putrefaction.

Dr. LOUIS BURCKHARDT of Indianapolis said that although the milk supply in their city had been greatly improved since the inauguration of the Milk Commission, still the summer diarrheas were not markedly decreased and the municipal authorities were considering compulsory pasteurization, and wished to know Dr. Vaughan's views as to this measure.

Dr. HENRY W. CHENEY of Chicago wished to know if the protein poison was not the same as was present in the horse serum that caused anaphylaxis and death.

Dr. GEORGE S. CATTERMOLE of Boulder, Col., said that in their climate there was little summer diarrhea, which gave weight to the theory of increased absorption of proteins by the intestines because of heat.

Dr. THOMAS C. McCLEAVE of Chicago wished to know why if the protein poisoning was the same in all conditions, and the symptomatology depended merely upon its location all exanthematous diseases showed the specific infection through the skin.

Dr. VAUGHAN in closing the discussion said that the other constituents of the food, organic and inorganic influence, played their relative parts in the absorption through the intestines. He said that the exanthems resulted when the infections were deposited in the skin. From the work done so far he had concluded that when proteins were taken into the blood stream they had a predilection for a definite location, but wished to do more work before saying positively that this was a fact. He thought compulsory pasteurization would have little effect in eliminating summer diarrheas.

**The Nature of Ileocolitis from an Etiological Standpoint.**—Dr. CLIFFORD G. GRULEE of Chicago, in presenting the subject said that the term, originally pathological, had become clinical and conveyed to the physician a patient suffering from bacterial infections, decomposition of foods by intestinal bacteria, and metabolic disturbance. He said that just what part heat played in the disorder was at present unknown, but thought that absorption of the mucus should be taken into consideration. He fed his patients curds of skim milk in gelatin water and had not had anything like the protein fevers that Holt and his confreres had reported.

Dr. R. M. SMITH of Boston said that from the large amount of Kendall's work that he had seen and from his own experience he was not sure that bacteria had no part in the etiology, especially so as different forms responded to different treatments, as would be expected from a disorder of bacterial origin.

Dr. E. W. MITCHELL of Cincinnati said the fat-free diet in all intestinal disturbances was the best treatment.

Dr. JOHN LOVETT MORSE of Boston thought it impossible to draw definite conclusions while the studies were in the transitional stage, but inclined to the theory of bacterial origin.

Dr. GRULEE in closing the discussion did not wish to be understood as saying that bacteria played no part in summer diarrheas, but did say that he did not believe the specific bacteria played an important part, as they had not been proven to be especially pathogenic. He thought it would be extremely difficult to get clinicians to agree unless they could see the same sets of cases, as environment and individual treatment so largely affected the course of the disease.

**Nutritional Injuries Produced by Starch.**—Dr. ISAAC A. ABT of Chicago pointed out that the principal injuries were in young infants who were given starch without milk for a long period of time, probably arising from actual food deprivation. Because of this feeding the resistance to infection was lowered and if the condition of inanition was continued loss of function was inevitable, and eye troubles were a common symptom of this condition. He thought the atrophic form most amenable to treatment. He reported several cases from his practice that had done well following the administration of breast milk where possible, or modified cows' milk, but urged the giving of small quantities, even as little as two ounces at a time, at frequent intervals, until the severe symptoms had subsided. He said that he continued to use breast milk until the child began to gain in weight, when even a top milk diet could be used if the infant's tolerance to fats was not overreached.

Dr. J. ZAHORSKY of St. Louis said that many physicians prescribed an oatmeal diet in these conditions, but as it lowered the resistance he did not think it good practice. In one case that he returned to breast milk he did not have good results, but attributed this to giving too much at a feeding because in another case with almost identical symptoms, in which the infant was fed only a little at a time, he had good results.

Dr. G. P. GENGENBACH of Denver reported the case of an infant of seven months coming to him from the practice of another physician. The infant had been placed on barley water and during an illness of the attending physician was permitted to remain on it until nephritis developed, with the presence of edema over the entire body. He put it on a one-third milk modification and it made a prompt recovery.

Dr. FREDERICK W. SCHULTZ of Minneapolis reported a case coming to him that had been fed almost entirely on oatmeal and barley water, having marked edematous symptoms and rigid muscles. He put it on small quantities of breast milk with beneficial results.

Dr. Julius H. Hess of Chicago thought that probably many deaths due to this disorder were attributed to other conditions and deplored the common practice of telling mothers to put babies having diarrhea on barley water. He said that while they usually did not continue this for a very long time, the cereal decoction would gradually weaken the infant's resistance until the secondary infection was noticed and the prompt succumbing of the patient.

Dr. L. D. Buckley of New York described fully the preparation of a wheat jelly that he had used very extensively in his practice with remarkably good results and thought it the ideal food because it gave all of the starch, some of the nitrogen, and an extract of the phosphates in the wheat.

**Status Thymicolymphaticus with Report of Four Cases in One Family.**—Dr. Walter L. Bierring, Dr. G. L. Golmset, and Dr. J. A. Goodrich of Des Moines, Iowa, presented this paper, which was read by Dr. Bierring. He gave the clinical report of four cases occurring in patients, all of one family, ranging in age from two to seven years, the deaths all taking place between April 8 and July 12, 1912. An autopsy was held in each instance and each revealed practically the same condition. The special clinical-pathological features he reported were previous good health, preliminary warning deafness, thymic asthma, more or less sudden death, hyperplasia of the thymus, and enlargement of the lymph nodes. He thought that the pathological physiology of the thymus presented the only point of possible solution of the nature of the disease. The treatment instituted was largely symptomatic, tending toward reduction and depletion of the thymus structure. He thought that operation, while attended by grave risks was still satisfactory but considered that radium and the *x*-ray produced the most marked reduction in the thymus, spleen, and lymph structures. He called attention to the reactive process and suggested the selective nature of the disease as indicating a definite exciting cause.

Dr. Clifford G. Grulee of Chicago wished to know if there were well-defined symptoms of rickets.

Dr. C. F. Wahrer of Ft. Madison, Iowa, thought that the fact of there being four cases in one family pointed to heredity and suggested that this was a point to be considered in eugenics, especially as nothing definitely curative could be done.

Dr. Mary Strong of Omaha asked whether a Wassermann was made and potassium iodide used.

Dr. J. Zahorsky of St. Louis wished to know what, if any, effect the giving of antitoxin had had.

Dr. Bierring, in closing the discussion, said that the patients were all pot-bellied and all had suggestive symptoms of rickets. He said that careful study of the literature failed to emphasize heredity in any group of cases, but in the father's family the report of nine children all dying before the ninth year was suggestive, but he was unable to get any definite information as to the causes of the deaths. He regretted that it was impossible to get a Wassermann, but said that he did use the iodides without any apparent results. He said that the antitoxin had been given in the spring of 1911 and the deaths did not occur until the summer of 1912, so he did not attribute the condition in any way to the antitoxin, although he said the patient that had had diphtheria never seemed to entirely regain strength.

**Treatment of Hemorrhagic Conditions in Infancy and Childhood.**—Dr. Thomas B. Cooley of Detroit said that temporary or permanent lack of some one or more elements of the blood was probably the cause of the inability to clot, there being probably different elements in different cases, although calcium had not been proved to be lacking in any case. He said that so generally was this the accepted theory that almost the only treatment now being used was that which supplied the lacking elements to the blood. He had used human serum, horse serum, and whole blood with good results, but said that in melena his results had not been as good as Clow's, probably because he had not used enough. He said that surprisingly little had been written on the use of human blood, but he thought it scarcely reasonable to suppose that the small amount injected supplied all of the lacking elements in the blood and rather leaned to the idea that the injected reacted as a stimulant to the patient's blood. He urged more frequent use of transfusion in these cases, and the use of it early in the treatment rather than as a last resort. He said that since the simpler technique had been worked out this could be used by almost anyone and as it supplied all of the elements of the blood it was the most surely beneficial. He had found the amount really necessary to be injected quite small and it was deserving of trial in any of the hemorrhagic diseases of a toxic nature.

Dr. V. D. Lepinasse of Chicago said that of ten cases treated he had lost two and both were complicated with syphilis. He said that cases that were almost dead could be saved if transfusion was used. He continued to inject blood until the patient became red, but warned against injecting too rapidly on account of the anemic condition of the heart. He said that in his cases the hemorrhage stopped at once and did not recur except in the syphilitic patients.

Dr. H. M. McClanahan of Omaha made a plea for the doctors in small towns and rural districts who had not access to modern facilities. He said to such he had been recommending the use of antidiphtheritic serum as the next best thing, and in one case blood had been injected into the bowel and gave positive curative results.

Dr. Julius H. Hess of Chicago said that the rapid development of the use of this measure called for a rewriting of the literature and wished to know if anyone had given repeated injections of horse serum over a period without anaphylaxis.

Dr. Ogden M. Edwards of Pittsburgh thought that no positive treatment could be outlined until the proper etiology was discovered. He thought that infection, association with syphilitic conditions in the mother before birth might all have their effects and if so would modify treatment.

Dr. H. Lowenburg of Philadelphia reported the case of a boy who, after biting his tongue, bled for two days and was brought in for treatment. He responded promptly to two injections of horse serum given at seven in the evening and ten o'clock the following morning, but he did not consider this a permanent cure because following an injury to the hip received five months later the injury was five or six weeks in healing.

Dr. C. Brooks of Pittsburgh presented a needle which he and Dr. Edwards used with very good results in their practice. It was connected with a Y-shaped rubber tube so that the blood could be taken from the donor and injected into the patient without interruption. He emphasized the need for the simplest possible method of transfusion.

Dr. Cooley in closing said that in the case reported the child was practically dead when the treatment was started and 20 c.c. of blood, alternated with injections of salt solution, were given. He said that they did not continue until the child became red, but stopped as soon as there was improvement and the pulse became stronger. He thought that where salt solution was alternated with the blood injections the danger of going too rapidly was overcome. He considered the condition due to some sort of toxemia, usually infectious, although not always.

**Treatment of Inguinal Hernia in Children.**—Dr. Arthur E. Hertzler of Kansas City, Mo., advanced the idea that all hernias were congenital and said that he did not believe that any hernia was ever cured by a truss and advocated operation at once as the presence of the hernia was a constant hindrance to the activity of the child and sometimes even a menace to life. He said that no reports of cure by wearing a truss could be accredited until at least twenty-five years had elapsed as the hernia was apt to reappear at any time. He said that so far as his experience went the only patients who had not progressed satisfactorily were those allowed to go home immediately after the operation where the dressings had become soiled and infection had resulted.

Dr. C. G. Buford of Chicago said that the treatment of hernias in children and in infants was entirely different, that in infants it was practically impossible to put on a dressing that would not get soiled and endanger the patient through infection. He thought that many cases of hernia in very young children were not congenital but acquired. He deplored the advising of operation for anything that could possibly be either treated or tided over in young infants because of their extreme liability to infection. He said that the only hernias that should be operated upon were those in which for some reason or another the baby could not wear a truss, or the parents insisted upon an operation, or where the hernia came out in spite of the truss. He said that if physicians would take pains in adjusting the truss, would superintend its adjustment themselves, there would be found few patients who could not wear them satisfactorily. His experiences indicated that the hard rubber truss, with a pad to suit the individual needs of each patient, kept strictly clean and properly placed could be worn comfortably and without hampering the movements of the child.

**General Anesthesia in Surgery of Childhood.**—Dr. William Cavan Woolsey of Brooklyn read this paper and after sketching briefly the physiological and patholog-

ical considerations in the surgery of childhood in their relation to anesthesia said that errors of technique arising from inexperience, carelessness, and a disposition to sacrifice the well being of the child to the convenience of the operator were responsible for the high morbidity in pediatric surgery, especially in adenoid and tonsil work. He exhibited a simple apparatus for the giving of nitrous oxide and ether which he had used most successfully.

**Spasmophilia with Especial Reference to Familial Reactions.**—Dr. Julius Parker Sedgwick of Minneapolis exhibited a chart showing in the cases reported the electrical reaction of the mother or some member of the family seeming to point to a familial or hereditary origin. He said that in cases of general convulsions, tetany, laryngospasm, spasmodic apnea and other closely allied conditions new light could be thrown upon the subject through the study of the electrical reactions. He said that the cases he had seen seemed to bear no relation to epilepsy, and were short in duration, but that the course of the disease was tedious, lasting seven or eight years and that the cases of "repeated absences" usually cleared up at puberty. He thought there was little field for medicine in these cases, although the bromides might be used if necessary. He eliminated cow's milk from the diet of his patients and substituted carbohydrates.

Dr. A. C. Rogers of Faribault, Minn., wished to know what percentage of cases showed a familial reaction.

Dr. Mary Strong of Omaha asked whether any had been examined by psychiatrists to determine their mental condition.

Dr. J. Zahorsky of St. Louis pointed out that in the cases in infancy there would be difficulty in withdrawing the milk for a very long period, although it could be withdrawn for a short time and then given in small quantities gradually as the system would tolerate it.

Dr. Sedgwick in closing the discussion said that in fully 75 per cent. of the cases where he had an opportunity to examine other members of the family he got reactions. He reported that some of his cases did show mental deficiencies. The literature gave the number as 30 per cent., and he had accepted it because he thought it represented his series fairly well. He said that his experience showed that the infants could be returned to cow's milk in a very short time and tolerated it very well with a little guarding against overfeeding. In older children he had resorted to a vegetable diet with good results.

**Desirability of Early Diagnosis of Mental Deficiency.**—Dr. A. C. Rogers of Faribault, Minn., emphasized the need of attention to suspected defectives so that all those recognized as in any way abnormal could be examined by the school physicians and psychologists and proper steps taken in each case. If, after physical impediments were removed or corrected, there was still retardation he thought that the measure of the child's intelligence should be taken so that he might have the best training possible to make him a self-supporting citizen. He recited many cases in institutions of children with very little mental development who, by study with the Binet tests, had been classified as to their mental capacities and their lives and occupations regulated accordingly and from the satisfactory results obtained by the present system, urged physicians to make more general use of this in their practices for their own information, for the guidance of parents in the management of the child, and for the benefit of the child, so that the latter might not be forced beyond his mental attainments.

Dr. Mary Strong of Omaha brought out the influence of alcoholism in such conditions, the necessity of confinement of such cases, and the regulation of marriage laws so that such subjects might not propagate their kind.

Dr. A. C. Rogers in closing said that at present the wisest course seemed to be segregation into colonies, but as the number increased this would not be practical, and it would undoubtedly be necessary to teach their proper care in the homes. He thought that sterilization had a very limited application.

*Thursday, June 19—Third Day.*

**Election of Officers.**—The following officers were elected for the ensuing year: *Chairman*, Frank Spooner Churchill, of Chicago; *Vice-Chairman*, Dr. L. R. DeBuys, of New Orleans, La.; *Secretary*, Dr. G. P. Gengenbach, Denver, Colo.

**Vulvovaginitis in Children.**—Dr. Richard M. Smith of Boston emphasized particularly the frequency of the condition, and its social aspects. He said that with the cooperation of the social settlement worker it was not often difficult to get the source of the infection and when that was determined and the avenue shut off the condition could be cleared up. He considered the medical treatment but a small part of the work. He said that parents should be educated as to the grave dangers of the disorder and the extreme liability of contagion, so that when it appeared in the family others could be protected against it. He considered the complement-fixation test the best aid to diagnosis and said that since diagnosis had been more accurate and the general gravity of the condition generally accepted it was less common in epidemic form than formerly. He thought that the pessimism of reporters was not justified by facts as he had had excellent results from douches and the silver salts. He urged the employment even in pediatric wards of a competent genitourinary surgeon for the acute cases. He thought any case that after a period of a year or more showed total absence of the discharge and a negative complement-fixation test might properly be termed cured, but emphasized the need for closing the source of infection or there would be prompt reinfection.

Dr. Frank C. Neff of Kansas City, Mo., thought that out-patients in poor districts, under poor conditions of sanitation and hygiene, presented a very unfavorable outlook. His experience showed that it was impossible to give them enough local treatments to be of much benefit. He had seen no good results accrue from the use of either autogenous or stock vaccines. He thought there were few cases in which it could be definitely said there would not be a recurrence of symptoms within a year. He thought that management of the child at birth was most important.

Dr. H. M. McClanahan of Omaha thought the cases hopeless unless they could be followed up, and considered this the most forceful argument for the social settlement worker. He brought out the fact that these infections in childhood might account for some of the sterilities in women.

Dr. H. Lowenburg of Philadelphia did not agree with the prognosis given in the paper. He said that cases presented in the Philadelphia General Hospital had been treated with various silver salts, permanganate and even sour milk (under the theory that the lactic acid bacillus prevented the growth of gonococcus) but during a period of five years practically all had shown recurrence. He thought the effect of the treatment mechanical, therefore not permanent. He called attention to the need of prevention and education to remove the source of the infection.

Dr. D. L. Richardson of Providence, R. I., thought the best results were obtained by cooperation between the social worker and the hospital and said that while the cases were active the hospital was their proper place. He said that in their hospital any suspected case, whether it gave positive reaction or not, was isolated. He thought any case could be isolated and no hospital epidemics would occur if nurses were careful in asepsis.

Dr. Julius H. Hess of Chicago wished to know if the applications of silver were vulvar or vaginal or both.

Dr. M. L. Turner of Des Moines said that if a gonococcus was present irritation to the vagina would make it active and if a case, after treatment, did not show activity with such irritation he thought it might be termed cured and a recurrence laid to reinfection.

Dr. C. F. Wahrer of Fort Madison, Ia., reported unmistakable cases of vulvovaginitis in children of from one to five years and urged physicians to try to educate the parents to these conditions and the need for proper watching and care of their children. He reported good results with cases that he had been able to keep under his supervision. His treatment consisted of persistent treatment with silver, and local treatment with bougies, but did not believe much could be expected from serum and globulins in acute cases, although they might do good in chronic cases.

Dr. J. Zahorsky of St. Louis thought that in private practice the cases recovered more promptly than in hospital because a child confined in a hospital always had his resistance lowered. He believed there was a local and general immunity established in a child living under good hygienic conditions that could not be set up in a child in hospital environment. He expressed the hope that there would still be a serum made that would assist this immunity.

Dr. Henry Dwight Chapin of New York said that in their hospital a smear was taken of each child as it entered, but that they had been considerably puzzled by the fact that many children after being in the hospital got up a discharge, afterward found to be gonococcal, that they did not have when they came. He thought possibly it was a latent germ that became active in hospital environment. He said that every precaution should be taken to prevent its spread throughout hospital wards and described in de-

tail their method of sterilization which had been tried and found inadequate to such an extent that at present they were using individual gauze dressings for each patient which were placed in paper bags after using and burned He said that, while more expensive than napkins, it seemed to be the only method that would prevent the spread and that no expense or trouble should be too great to prevent even one case. He had seen but one case in which the tubes had been taken out by laparotomy and he found the eyes rarely if ever affected. He thought that the disease would wear itself out in time and did not believe it often caused sterility as several observers had reported cases in which the woman later had borne children.

Dr. SMITH in closing said that in his work, using ordinary precautions, he had almost no hospital epidemics. He thought the pessimism resulted from the fact that many cases reported as relapsed had been reinfected. He said that with a prolonged douche of permanganate and the application of some silver salt over a considerable period of time and with the treatment continued after the patient returned to her home for a number of weeks he saw no reason why she should not recover. He reported two cases of pus tubes in children under six occurring in their hospital within the last two years. He reported no success with vaccine.

**Roseola Infantum.**—Dr. JOHN ZAHORSKY of St. Louis reviewed the history of the use of the term and its disappearance from medical literature and made a plea for its return, as it described a positive, characteristic clinical syndrome. He reported numerous cases from his experience that could not in any way be confused with any other condition and said that because of this fact it was deserving of a classification in literature.

Dr. G. P. GENGENBACH of Denver said that it was an important condition to recognize in hospital work because, not being contagious, it was necessary to distinguish it from scarlet fever which it somewhat resembled in appearance. He had not found as high fever as Dr. Zahorsky reported.

Dr. H. W. CHENEY of Chicago thought it better to use the general term German measles to avoid confusion. He said that he had not always found German measles contagious.

Dr. ZAHORSKY in closing the discussion said that the disease was never contagious and was so positively defined that he thought it wrong to call it German measles.

**Atypical Forms of Meningitis (Posterior Basic Meningitis; Aseptic Meningitis).**—Dr. A. SOPHIAN of Kansas City, Mo., read this paper giving the clinical symptoms, laboratory diagnosis, and treatment of posterior basic meningitis; the etiology, clinical symptoms, laboratory findings, diagnosis and treatment of aseptic meningitis. He said that in practically every case of posterior basic meningitis the prognosis was fatal, and urged most careful diagnosis so that if the physician in charge did not wish to treat the case he would not aggravate it by wrong treatment. He reported that out of fifteen cases two definitely recovered, so that there was some little hope of recovery which should not be mitigated by wrong treatment.

Dr. JOHN LOVETT MORSE of Boston said that a few years ago it had been expected that very definite diagnoses could be made in all cerebrospinal conditions by lumbar puncture, but as it was studied more carefully it was found that differential diagnosis was not easy. He reported a case of posterior basic meningitis seen recently in which the fontanel had been depressed. He punctured the ventricle and the fluid did not run out under pressure. He considered the condition almost hopeless and said that his experience with serum had been discouraging. He did not consider lumbar puncture at all dangerous.

Dr. SOPHIAN in closing said that in tapping the ventricle the stilet should be left in the needle this would become clogged with brain substance. He thought the only dangers possible were injury to the basal ganglia and hemorrhage, but these were overcome with selection of the proper site.

**Leucocyte Counts in Epidemic Meningitis and Pneumonia.**—Dr. JULIUS H. HESS of Chicago had found few studies of the leucocyte count devoted to infants and after reviewing it in its relation to infections in general gave detailed findings in fifty cases. He said that blood counts could only be valuable when considered with other clinical symptoms. From the counts made in epidemic meningitis before, during, and after treatment by serum he concluded that each case must be studied individually not only as to the presence of meningitis, but as regards secondary infections, that the blood count was of no especial value, and that lumbar puncture promised the most help. From the leucocyte counts in different types of pneumonias he found that, contrary to ordinary teachings, almost all pneumonias in children from three to five years were of the lobar type, that the cases described at autopsy as bronchial were of secondary nature. He thought this a valuable aid to diagnosis and said that generally a high count indicated a strong infection.

**Precocious Menstruation.**—Dr. C. P. GENGENBACH of Denver classified the condition as referring to children having more or less regular periods of menstrual flow before the age of puberty, and not to the bloody discharge from the vagina occasionally seen in new-born infants without recurrence. In his experience it had usually been accompanied by other signs of precocious development and this would seem from examination of the literature to be quite generally the case. The case he reported menstruated quite regularly from the tenth month and developed very rapidly. He wished to know if in these cases which he thought probably pathological and certainly abnormal it was permissible to administer some glandular remedy to counteract the tendency to precocious development.

**Clinical Report and Postmortem Findings in the Case of a Child with a Congenital Heart Disease Dying from Acute Nephritis.**—Dr. H. M. MCCLANAHAN of Omaha read this paper, describing the case of a large, well nourished infant which died from a congenital heart lesion aggravated by nephritis. He thought it very probable that the child would have recovered from the nephritis had it not been for the heart lesion. Postmortem examination showed no enlargement of the chest, muscles dark and soft, no fluid in the abdominal cavity, although there were evidences of there having been some, bile passages normal, stomach exceedingly dark, pancreas dark, liver greatly congested, lungs not congested, both kidneys firm, the heart the size given by Gray as that of a normal adult, heart muscles dark and reddish, its cavity containing a large amount of blood, almost no clotting, the veins enormously enlarged, and free mingling of venous and arterial blood. He was able to find no literature on the subject.

Dr. J. ZAHORSKY of St. Louis reported having a case in which these peculiar symptoms were presented. He had found some literature showing that children with congenital heart disease gave large red blood counts.

Dr. H. LOWENBURG of Philadelphia said he had had one case in which the count was between eight and nine million in which there were clubbing of the fingers and heart murmurs. The autopsy in this case revealed a normal heart but a chronic interstitial pneumonia that gave few physical signs.

Dr. MCCLANAHAN in closing the discussion said he had searched the *Archives of Pediatrics* ten years back without finding the condition touched upon. He said that in his experience all cases of congenital heart disease ultimately died of some intercurrent affection. One case, carefully guarded from acute infections, had lived to the age of sixteen.

**The Hospital Management of Contagious Diseases.**—Dr. D. L. RICHARDSON of Providence, R. I., said that his object in presenting this paper was to give the technique and results obtained by rigid asepsis in the care of patients suffering from contagious diseases. He said that no matter what the method of separation was the nursing employed was the greatest factor, and it was therefore necessary to get the full cooperation of the nurses to prevent the spread of contagious diseases, but once this was done and the technique carefully followed there was no danger in admitting contagious diseases, with the possible exception of measles and chicken pox, into any general hospital. He said that the theory of air transmission of disease had been practically exploded in the French and German hospitals so that the matter was one of absolute sterilization of everything that came in contact with the patient. He described in full the arrangement of buildings, construction of rooms, care of apparatus, utensils, and garments used in the Providence Hospital and said that with their method no prophylactic antitoxin had been used, nor antiseptic by the attendants in washing their hands, nor was fumigation necessary.

Dr. H. E. ROBERTS of Minneapolis wished to know how nurses were trained for the aseptic nursing.

Dr. RICHARDSON in closing the discussion said it had been found impractical to have pupil nurses work in the isolation ward because of the short time they were at the hospital, but said that any nurse who had had two months or more of general preliminary ward work could be trusted with the aseptic nursing.

**Federal Children's Bureau; the Law, the Organization, the Scope of Its Present Work.**—Miss JULIA C. LATHROP of Washington gave this paper as a report of work done during the one year that the bureau had been in operation. She said that its field as defined by the law was one of investigation and report, that from knowledge of conditions existing municipal and Federal organizations

might go intelligently to work to better conditions. The first investigation was the investigation of infant mortality in small towns. She said that as it had been conclusively proved that the mortality in cities was decreasing while that in rural districts was increasing the first efforts were directed toward small towns. Johnstown, Pa., was selected because it had birth registration. She urged particularly the cooperation of every physician with the bureau and the Census Bureau in urging birth registration, placing direct emphasis on its value as an expedient in reducing infant mortality, and as an aid in protecting the lives and rights of children. She had found little diffienlty in enlisting the cooperation of parents when the purpose of the work was explained to them, as shown by the fact that out of 1,558 schedules only two were refused. She said that from the work done so far apparently all that was needed was to popularize the movement to make it a success. The plan included the establishment of a complete working library of everything pertaining to child welfare, the nucleus of which was already started.

Dr. C. F. Warher of Fort Madison called attention to the easy manner in which funds are appropriated for patriotic demonstrations and civic improvements and said that evidently when a public demand was made for measures that would conserve the health of the coming generations they would be forthcoming.

**The Etiology of Artificial Feeding; a Plea for the Study of Breast-Milk Problems.**—Dr. H. Lowenburg of Philadelphia in this paper gave a very careful résumé of the causes leading up to the discontinuance of breast feeding, and concluded from his experience that in a very large number they were fallacious. He said that even abscess of the breast he had not found to indicate complete withdrawal of the breast. He thought that the factors were largely psychic, economic, and social; and that a permanent, irremovable or organic obstruction to successful breast feeding rarely existed. He emphasized the need for impressing mothers with their responsibilities toward their children, and physicians with their responsibility when they allowed mothers, for slight cause, to discontinue nursing their babies. He thought that natural feeding was the only sane and safe way, and that the profession spent time in studying artificial feeding that might better be spent in learning how to deal with problems of breast feeding and nutritional and digestive disturbances of the breast fed. He had found economic and social reasons most difficult to overcome because their origin was in the present social condition. He thought that the practical working out of the problem would be by cash payments made to nursing mothers.

Dr. Rosenthal-Thompson of Grand Rapids, Mich., said that there was a close connection between this study and the work of the Child Welfare Bureau, and that when poor mothers were given protection and good food they would be able to nurse their babies. In thirty years of practice she had found few mothers actually unwilling to nurse their infants.

Dr. J. Zahorsky of St. Louis reported great difficulty in enabling all mothers to nurse their infants who would gladly do so if they could. He found acute indigestion in many breast-fed infants, and many others that did not thrive until artificial feeding was resorted to. He thought that when therapeutic measures, such as lengthening the time between feedings, did not improve conditions it was not rational to continue breast feeding.

Dr. C. F. Wahrer of Fort Madison, Ia., laid the fault largely at the door of meddlesome nurses or members of the family and thought if physicians would assert themselves a little more and teach the mothers the dangers of artificial feeding and the pleasure to themselves of nursing their infants little trouble would be found.

Dr. H. W. Francis of Bancroft, Neb., reported little trouble in rural districts, but said when there was a case it usually proved to be one where it was really not best for the mother to nurse the child. He said that in cases where the mother's milk did not agree with the infant he had often given citrate of soda at each nursing time with good results.

Dr. L. R. De Buys of New Orleans though the care of the breasts before confinement was deserving of more attention than it usually received. He reported many cases where mothers extremely anxious to nurse their infants were unable to do so, and thought attention to the nipples would help many of these. He had been able to help mothers with scanty milk secretion to nurse their babies for six or seven months by giving all the milk secreted and enough artificial food to supply the lacking nourishment to the child. He said that by this method the supply was frequently increased to such an extent that after two or three months the breasts are supplying nearly all the food the child needed. He said that every child should not be weaned because the stools were not normal, that it sometimes took a month to adjust the child to the breast.

Dr. G. P. Gengenbach of Denver thought that of those who would like to nurse but could not, there were two classes—the nervous and those whose milk was too rich. Of the latter he had found many and obviated the difficulty by giving the child some water and allowing it to nurse only a little while, so that it did not get the last of the breast secretion which carried the most fat. Nervous mothers to his mind presented a graver problem, but he reported good results with sedatives and, at the same time, tonics to build them up.

Dr. C. H. Johnson of Grand Rapids thought only two contraindications to natural feeding presented—namely open tuberculosis and advanced heart disease. He thought that aside from these all other difficulties could be overcome and the mothers educated to nurse their babies. He pointed out the fact that the ill effects of artificial feeding followed the child even to the tenth year, and thought if mothers generally understood this the effort to overcome difficulties to nursing would be more determined. He thought no child which showed an increase in weight should be weaned even if there was persistent vomiting and green stools. He said it was seldom the baby's fault that it could not nurse.

Dr. Stewart of Iowa City deplored the practice of physicians in turning the mother and child over to the nurse after the second and third day, and neglecting them at the time of getting up. She thought that if physicians would attend them carefully until after the getting-up period few could not nurse, at least, for three months even if after that time, on account of weakness, they could not do so.

Dr. Frank C. Neff of Kansas City thought the general criticism of physicians might have applied in the past, but scarcely would now. He said his experience proved many mothers took the baby off the breast because they thought they had not enough milk. He emphasized the need of education in such instances so that use would be made of what there was. He had had remarkably good results in such cases by obtaining supplemental supplies from mothers with more than they needed and urged physicians to try this plan.

Dr. E. O. Benson of Chicago reported little difficulty in getting mothers to nurse their infants. He said that literature was fast coming into the hands of the reading public as to the ill effects of artificial feeding and the increased resistance of the breast-fed to infectious diseases, so that he had more trouble in overcoming difficulties to nursing than he had in getting mothers to nurse. He did not agree that too much study was spent on artificial feeding because where it was necessary it was a grave problem and too little attention paid to it often resulted disastrously. He found many cases where mothers in their anxiety to nurse their babies were eating too rich foods themselves with the mistaken idea that it would increase the quantity and richness of their milk, and emphasized the need for a simple and nourishing diet.

Dr. Henry Dwight Chapin of New York wished to have Dr. Lowenburg explain what he would do in a case where the mother was willing to nurse the child, where the doctor and the nurse advised it, but where the milk was poor and scanty. He said that in the Department of Agriculture investigations showed that all animals did not have a potential possibility to give milk, and he wondered if this might not be at times the case in the human being.

Dr. Lowenburg in closing said that his experience did not warrant the belief that many mothers were unable to nurse. He did not consider indigestion, green stools, curds, or colic an indication for artificial feeding, but said as long as there was increase in weight the breast milk was indicated. He thought many infants were fussed with too much and watched too closely, and said that many, if no attention were paid to anything but the weight, would get along all right. He thought systematic study of stools of the breast-fed would probably show why they were green. He thought careful attention to the breast before the birth of the child and throughout the nursing period was the province of the physician, and should not be relegated to the nurse. Considering Dr. Chapin's hypothetical case he said that he would give what milk was secreted and supplement with artificial feeding, meantime studying the milk and if some element was lacking supply it in the food of the mother; give her abundance of water and sometimes Southworth's soup and in all probability the supply would increase. His experience showed that instances where the

supply did not increase occurred in the very obese where the breast was mostly fat with little glandular substance.

*Friday, June 20—Fourth Day.*

JOINT SESSION WITH THE AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS.

DR. OGDEN M. EDWARDS OF PITTSBURGH IN THE CHAIR.

**Annual Report of the Relation of Bovine and Human Tuberculosis.**—Dr. M. P. RAVENEL of Madison, Wis., in this paper called attention to the large number of more or less permanent deformities in children resulting from bovine tuberculous infection, in addition to the deaths attributable to this cause. He said that a large number of cases studied showed very rapid progress of the disease following initial infection, that the greatest number occurred in children, gradually diminishing as the milk-drinking age was passed. He thought that this was a strong plea for more care in milk supplies.

**Certified Milk.**—Dr. T. C. MCCLEAVE of Berkeley, Cal., pointed out the common confusion of certified and pasteurized milk and gave full, definite definitions of the terms, reviewed the history of the origin of certified milk and the origin and operation of the Milk Commission. He said that fundamentally all recent movements for the conservation of infant life had their origin in the pure milk movement. He emphasized the care that was taken in supervision of the hygiene and sanitation of dairies, construction of the stables, proper selection of cows, and freedom from bacteria, and made a plea for uniform requirements throughout the States.

Dr. J. W. VAN DERSLICE of Chicago thought Brown Swiss cows preferable to Holsteins because in the latter it was almost impossible to get a uniform fat content. He called attention to their extreme susceptibility to climatic changes which affected the fat content. He reported poor results from the use of milking machines but thought ultimately the machine would be perfected to a practical point. He thought that when a machine was constructed that would not cause disorders of the udder it would be an improvement over hand milking.

Dr. HENRY L. COIT of Newark, N. J., emphasized the need of the producer's co-operation in getting a pure milk supply and said that Mr. Stephen Francisco as the first producer of certified milk deserved as much credit as the originators of the movement.

Dr. JOHN ZAHORSKY of St. Louis said that in his section of the country there was great difficulty, on account of the prolonged hot weather, in keeping down the bacterial count and thought that there should be variations made in the requirements throughout different parts of the country.

Dr. C. H. JOHNSON of Grand Rapids took exception to this and said that almost any commercial milk during cold weather could give a bacterial count of 10,000 or less and that if certified milk dealers were to be protected they should not have to go into competition with the commercial milk dealers during the cold weather.

Dr. MCCLEAVE in closing said that by mixing the herds the fat content could be brought up to the requirement, but emphasized that the low fat content of the Holsteins was not a disadvantage as the milk was designed primarily for infant feeding. He thougbt the uniformity of the supply in other respects was of more importance than the fat content. He thought the value of the milking machine problematical until an efficient method of sterilizing the rubber tubes was found, but that when it was it would be an advantage as probably three-fourths of the infection was from milkers. He thought no lowering of the demands as regards bacterial count should be made as that was one of the special features of certified milk. He said that one of the objects of the commission was to bring about a milk supply that would guarantee to people in all parts of the country uniform purity.

**The Cost of the Production of Certified Milk.**—Mr. STEPHEN FRANCISCO of Fairfield, N. J., the first producer of certified milk, had made a careful analysis of all of the increased costs of producing certified milk over ordinary milk and announced it to be a trifle over 9 cents a quart. He called attention to the constant inspection and weeding out that was necessary and said that unless each one engaged on the farm was interested in obtaining perfect results pure milk could not be guaranteed.

**The Cost of the Production of Certified Milk.**—Mr. W. E. MILLER, a producer of Lebanon, Ohio, found practically the same cost of the production of certified milk. He thought too much attention was probably paid to the spectacular features of a certified milk farm, all of which had to be figured in the production cost. He said that to make the measure of the greatest good to the greatest number all interested must co-operate to reduce the price to the consumer within reach of the greatest number of families. He thought the least amount of supervision that would guarantee pure milk to the public was all that was necessary and asked the cooperation of physicians in this respect.

Dr. T. C. MCCLEAVE of Berkeley, Cal., said that the increased equipment and expense of running a dairy to produce certified milk aside from the inspection and veterinary fees all increased the price of certified milk, but that as the farms studied efficiency and business methods these could probably be decreased a little.

Dr. JOHN ZAHORSKY of St. Louis asked if depreciation on machinery and interest on the investment should not be added to the cost of certified milk.

Dr. J. W. VAN DERSLICE of Chicago said that in Chicago two plans were used in obtaining certified milk. By one the number of bottles required each day was ordered. By the other all of the output was taken at a flat rate which was found to be the better plan for all concerned. He thought unless the entire output could be disposed of there would be a loss at the end of the year. He thought the keynote of the situation was co-operation, that when all having to do with milk supplies co-operated for a clean supply even in commercial milk the bacterial count would be reduced to a minimum.

Dr. OTTO P. GEIER of Cincinnati said that with the fees obtained by the commission they were able to maintain a laboratory which was at the disposal of physicians; also to advertise the certified milk stations, which was of great benefit to the dairymen, so that all of the cost of the commission's fees could not be called a dead weight on the cost of maintaining the farm. He thought a per-bottle tax the best plan of affixing fees so that the large farms would bear their proportionate share of the expense.

Mr. FRANCISCO in closing the discussion said the market milk had moved right along up a close second to certified milk and that as the dairies for certified milk were perfected general dairies would follow their methods.

Mr. MILLER in closing discussion of his paper said that the cost of upkeep and depreciation were negligible factors, as with the good care given the animals and the constant improvements made on the apparatus they were increasing in value all of the time. He said he had practically no loss from the tuberculin reaction.

**The Efficiency of the Medical Milk Commission Graphically Illustrated.**—Dr. HENRY L. COIT, of Newark, N. J., with a graphic chart described the principles governing the work of the medical milk commission. He attempted to show the relative importance of practical dairy hygiene, experienced veterinary supervision, chemical and bacteriological supervision of the hygiene of stock and production, and the medical supervision and the control of the health and personal hygiene of the dairy employees, in order to insure a product uniformly reliable and safe as based on fixed standards.

**The Effect of Barn Operations upon the Germ Content of Milk.**—H. A. HARDING of Urbana, Ill., presented a series of comparisons made between conditions ordinarily obtaining in dairy farms and those after extreme niceties as to cleanliness had been observed. In each instance sufficient tests were made to render unjust any claim made that the results applied to one time only. From these studies he found there was no effect upon bacterial count of milk after whitewashing the walls, that atmospheric conditions had no effect, that wet cleansing of animals had no advantage over dry, that clipping made no change. He did find that pails must be very carefully sterilized and then covered until used or the bacterial count would be raised. From these studies he concluded that undue attention had been paid to what *looked* clean and that dogmatic assertions had been made without investigation into the facts.

Dr. C. H. JOHNSON of Grand Rapids wished to know if the dust content of the air had any effect upon the milking machine as shown by the bacterial count.

Dr. T. C. MCCLEAVE of Berkeley, Cal., wished to know if comparative tests had been made with open and closed pails. He thought if not the apparent safety might lie in the use of the closed pail in the experiments reported.

Dr. J. W. VAN DERSLICE of Chicago said that it had been quite definitely proved that it was the care of the milk during and after milking that influenced the germ count rather than equipment. He thought in spite of this that everything should be done to have a clean looking dairy so that all employed about it would be stimulated to especial pains in the matters which did affect the germ count in the milk.

Dr. Otto P. Geier of Cincinnati thought facts such as reported in the paper should not be made public because of the unfortunate influence they would have on the movement for clean milk. He cited the University of Wisconsin as deserving of sharp criticism because of its stables, as he thought the psychological effect on students of a poorly kept dairy was bad.

Dr. Oscar Dowling of Shreveport, La., said that they had had great trouble in effecting sanitation in the milk supply. Seventeen out of 32 dairies had been closed on account of poor milk. He had found three doctors selling milk to their patients under every condition of poor hygiene and thought that any one who sold milk, even if but a quart a day, should be obliged to comply with the requirements. He said that in ordering milk to drink at soda fountains and in hotels he had been able to taste dung and thought that this should be eliminated.

Dr. Henry Coit of Newark, N. J., thought that there was no milk produced in which now and then the taste of dung could not be detected but thought visible dirt could be eliminated.

Mr. H. A. Harding in closing the discussion said that no tests were made to compare the open and closed pail in this series because he had already performed these tests and established the importance of the closed pail and published the findings in detail. He thought the closed pail cut off fully 50 per cent. of the germ count. He thought the University of Wisconsin had been too severely scored because from all of the studies made he found that they were neglecting nothing that really affected the germ count of the milk. He thought that clipping was not necessary because what germs came from that source came from the skin and by leaving the hair long and cleansing it by brushing particles of epidermis were prevented from dropping into the milk. He thought unless a man had actually made a series of comparative studies he should not attempt to criticise the sanitary conditions of a dairy, because he discouraged the dairyman by dogmatic assertions regarding things that made no material difference to the germ count. He said that their studies showed surprisingly few germ cells in dirt, so that dirt on the top of milk was no indication of its impurity, and that if one attempted to insist that there should be no taste of dung he might as well wipe milk from the dietary because there was no method, however exact, that would prevent it at all times.

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SECTION ON PRACTICE OF MEDICINE

Dr. W. Jarvis Barlow, of Los Angeles, in the Chair.

*Wednesday, June 18.—Second Day.*

**Clinical Aspects of Hypertension.**—Dr. Joseph L. Miller of Chicago read this paper in which he summarized the present knowledge affecting the etiology, pathology, and treatment of high blood pressure. Absence of albumin and casts did not necessarily exclude kidney changes and slight changes might exist in kidneys apparently normal both in appearance and function. It was doubtful if the functional tests now applied ever disclosed more than the grosser lesions. It was difficult to explain the marked fluctuation of pressure in patients with hypertension. It seemed that nervous influences were a definite factor in the production of hypertension. A few cases might be explained by arteriosclerosis, but it was probable that heart hypertrophy was always secondary to some defect in the kidneys. In these cases of hypertension it was difficult to make a definite prognosis as there was no way of estimating exactly the strength of the arterial walls or of the heart muscle. The phenolsulphonephthalein test was the most reliable one now had for determining the kidney function. It was possible for an individual to have a blood pressure of 200 mm. and yet show no kidney lesion. When a patient had such a pressure overexertion should be avoided as cardiac decompensation or cerebral hemorrhage was liable to develop. In these cases cerebral symptoms were common and dyspnea was a warning against overexertion. Of course, the more marked the renal changes the graver the prognosis. Retinal changes were not so important. A patient with a blood pressure of 170 mm. or less was not in any immediate danger if his habits were well regulated. These cases of moderate hypertension often showed marked fluctuation in the blood pressure. Drugs were less important in the treatment of these cases than attention to hygiene and elimination. The protein intake should be restricted according to the extent of renal involvement. The excessive use of tobacco and severe strain both physical and mental should be avoided. Moderate physical exercise was both safe and beneficial if there was no dyspnea. Digitalis by way of the mouth did not raise the blood pressure. The iodides were of no special use unless syphilis was present. Other drugs were of slight value. If one expected to reduce the blood pressure he would be doomed to disappointment in the vast majority of cases.

**A Comparison between Jacquet's Sphygmograph and Crehore's Micrograph in Cardiac Tracings.**—Dr. Alexander Lambert of New York read this paper and gave a lantern slide demonstration of Crehore's micrograph and of the curves recorded by both instruments. He had been working with these instruments for two years and thought that he was justified in reporting on the work though there were still many points in connection with the tracings which were not understood. The two instruments showed similar occurrences in the cardiac cycle, the micrograph showing greater detail and also occurrences which the sphygmograph was unable to register. The micrograph registered in tenths of seconds while the sphygmographs registered in fifths. The curves in auricular fibrillation were shown by the micrograph but not by the sphygmograph. The Crehore instrument magnified the arterial vibration about 50,000 times. The tracing in auricular fibrillation showed that the auricle contracted in bundles.

**The Diastolic Pressure.**—Dr. Louis Warfield of Milwaukee read this paper. He stated that clinically hypertension was mostly an effort at compensation, and in this sense it was physiological. The advantages of measuring the diastolic pressure rather than the systolic had not been appreciated and the methods of measuring diastolic pressure had not been uniform or accurate. The auscultatory method was the most practical that we had had hitherto. It had been customary to take the diastolic pressure at the point of disappearance of all sound. Dr. Warfield showed that this was not the right time to take the diastolic pressure but rather at the point of dull tone. At the end of the third tone the diastolic sound was sharp and suddenly became dull and there was a decrease in pulse rate. At this point the pressure should be taken. In normal individuals it was not difficult to determine the diastolic pressure, but in irregular hearts it was doubtful if one could obtain the pressure even with approximate accuracy.

**Clinical Significance of High and Low Auscultatory Pulse Pressure.**—Dr. Willard J. Stone of Toledo, Ohio, presented this paper in which he described the results of his observation in 170 cases in which he had endeavored to find out the significance to be attached to certain high and low auscultatory readings. He concluded as follows: (1) The determination of systolic and diastolic pressures by the auscultatory method was to be preferred to the palpatory method for systolic, and column or indicator oscillation for diastolic pressure, because of greater accuracy. (2) The readings were slightly higher by the auscultatory than by the palpatory method. (3) The pulse pressure measured the energy of the heart in systole in excess of the diastolic pressure. For clinical purposes it represented the load of the heart. Under normal conditions it was approximately 50 per cent. of the diastolic pressure. The myocardial load might therefore be expressed by the fraction $\frac{\text{pulse pressure}}{\text{diastolic pressure}}$ or $\frac{\text{P. P.}}{\text{D. P.}}$. (4) Since the diastolic pressure measured the peripheral resistance it was a better index of hypertension than the systolic pressure. A sustained diastolic pressure of 100 to 110 signified hypertension. The diastolic was less influenced by physiological factors than the systolic pressure. (5) The comparison between systolic, diastolic, and pulse pressures was of clinical value in the interpretation of circulatory changes and of more importance than the estimation of systolic pressure alone. (6) In arterial hypertension and myocardial decompensation in the broad sense, the pulse pressure and heart load was increased, as a rule, the overload factor varying greatly from 50 per cent. to 175 per cent. in this series. The greater the overload factor the greater was the danger of myocardial exhaustion. (7) In circulatory failure due to shock, to many acute infections, and to hemorrhage, the pulse pressure was low. This was the result, it was believed, of factors which had influenced arterial tonus and peripheral resistance with rapid pulse rate, increased respirations, and lowered venous pressure. (8) In acute infections a sustained pulse pressure warranted a more favorable prognosis, as a rule, than a low pulse pressure, other things being equal; although the change from a normal to a low pulse pressure in circulatory failure might occur very rapidly. As a rule the lower the pulse pressure, the greater the danger of circulatory failure. (9) From this point of view low pulse pressure in circulatory failure involved a consideration of complex peripheral changes in addition to the myocardial factor. (10) The pulse pressure multiplied by the pulse rate did not give a reliable index of systolic output in circulatory shock

since the pulse rate clinically increased out of proportion to the fall of the pulse pressure. This shortened the time during which the left ventricle was filled during diastole and lessened the systolic output although by the formula pulse rate multiplied by pulse pressure the unit volume output might appear to be increased. (11) The pulse pressure estimation in this series did not show marked variations from day to day except in a few more or less neurotic individuals.

**The Pathology, Symptomatology, and Treatment of Slow Forms of Perpetual Arrhythmia.**—Dr. Hugo A. Freund of Detroit, Mich., read this paper. He first reviewed the anatomy of the stimulus conducting system of the heart, and gave lantern slide demonstrations illustrating the changes found in the sinaauricular node and in the auriculoventricular node in cases of slow perpetual arrhythmia. The symptoms and signs in cases of rapid perpetual arrhythmia were compared with those of the slow type. There were two forms of the slow type, the primary and the secondary. The primary were distinguished by the fact that the ventricular rate was never rapid; the patient experienced no palpitation and precordial distress; slight exercise did not increase the rate. These cases lived longer than any others and were seen in older individuals. In the secondary type the arrhythmia was gradually converted from rapid to slow. These were the hearts that showed fibrous connective tissue infiltrating the conduction system. There was a tendency to decompensation in this type and few patients recovered and these only with great difficulty. Patients having the slow forms of perpetual arrhythmia required no treatment. Tracings were shown illustrating auricular fibrillation of the coarse and fine varieties with rapid and with slow response. In cases requiring treatment this was best established by digitalis.

Dr. Louis Warfield of Milwaukee, Wis., said that Dr. Stone's paper stating that diastolic pressure was the most important factor in blood pressure estimation had interested him very much. It seemed to him from the study of a few cases that it was not the constant high pressure but the high diastolic pressure that was important. The heart compensated a high diastolic pressure by a high systolic pressure. If the resistance increased the heart worked at a maximum rate and the result was broken compensation. He had been surprised to find the overload comparison correct in many cases; it gave something upon which to work. The myocardium controlled the circulation and any way of measuring the overload gave one an advantage in making a prognosis in heart disease. It was difficult to measure the diastole and systole in irregular hearts and in extrasystole. In patients suffering from decompensation more depended on making a prognosis on the state of the patient than on the blood pressure. They were only beginning to study the diastolic pressure but it seemed to him that other things being equal a high diastolic pressure indicated a more grave prognosis than a high systolic pressure. If one were able to take only one pressure it would be better to take the diastolic rather than the systolic.

Dr. Henry Elsner of Syracuse, N. Y., said that the value of this discussion was in proportion to its practical benefit to the average man who wanted these things interpreted. Many years ago Stokes said that the key to the heart lay in the heart muscle. He reached a sane conclusion when he called attention to the myocardium. Hypertension in itself was a question to be considered with the greatest circumspection. They all seemed to have an overwhelming desire to use the sphygmograph. The laity had learned that there was such a thing as high blood pressure and came to the physician saying, "Oh, doctor, I have blood pressure," and he replied, "Thank God you have." High blood pressure in itself was of little importance except as indicating the necessity of keeping an eye on the patient, and this must be done in a tactful way. The patient with a moderate hypertension but no other heart lesion and whose urine was normal need not feel despondent provided he could be led to right living. Hypertension with hypertrophy of the heart in a patient whose compensation was comfortable required watching but not continuous medication. When there were positive renal symptoms without marked hypertension treatment was directed to the renal condition. Where there was high blood pressure, positively renal symptoms, palpable arterial and other symptoms, iodides ought to be given over a long period. There was a growing tendency to decry the nutrites. They had no real value in decreasing the blood pressure but they relieved sensory symptoms. The graphic methods needed interpretation, but they taught heart physiology and pathology in a definite way and would lead to a safer prognosis. Dr. Elsner said he could not leave the subject without calling attention to the increased frequency of these heart conditions. In referring to angina pectoris Rush said he had seen but one such case and knew of the existence of one other. A great change had taken place in the present day. This was due to the stress of modern living.

Dr. W. S. Thayer of Baltimore said that Dr. Lambert had demonstrated that Crehore's micrograph was the more delicate instrument. To carefully interpret the results required careful work but in a few years he felt sure that important results would accrue. After all to the practical physician blood pressure was of more value from the point of view of prognosis than of diagnosis. He said that his therapy in cases of hypertension agreed with that of Dr. Elsner. There was danger from the use of the nitrites in chronic nephritic conditions with hypertension. He recalled a case of uremia which he believed had been caused by the use of the nitrites. The old cases with irregular heart sometimes got better but the arrhythmia remained; however, perpetual arrhythmia was not a good term because the arrhythmia did sometimes disappear. Digitalis helped these cases but it was sometimes followed by the recurrence of an old arrhythmia.

Dr. H. S. Munro of Omaha, Neb., said that these cases presented the general problem of the individual, digestion, circulation, nervous system, habits; the individual was the end product of all these and one had to approach the pathology of these cases that they were discussing by the indirect rather than the direct way. The nervous element was often the main feature; one also found high-blood pressure in connection with defects in elimination. One should study the social and economic side of these cases and endeavor to regulate the life of the patient rather than to specialize too much on the local defect.

Dr. James M. Anders of Philadelphia said that clinical hypertension was a cause of many unsolved problems which required further study. There were cases with no definite etiology either with the heart, kidney, or other viscera, and these were called cases of physiological hypertension. He felt sure that this class would undergo diminution. Alcohol, tobacco, and nerve strain were the important factors in producting this condition. Constant hypertension led to arteriosclerosis if watched long enough. Therefore cases of hypertension formed an important group clinically considered. Surely the profession in America was not sufficiently impressed with the importance of recognizing the nervous element in the treatment of these cases. Rest in bed for several weeks, rather liberal feeding, and the use of the nitrites were recommended in the treatment of new cases.

Dr. Thomas McCrae of Philadelphia said that the burden of Dr. Miller's paper was that there were many cases of hypertension that had nephritis. A patient might have nephritis and not have albumin. The better the physician the more he hesitated to say what nephritis was. Sometimes the changes that might be attributed to nephritis were due to advancing years. What about the high blood pressure found in women during the menopause? It later returned to normal. There was also a group in which there was a disturbance of pressure due to nervous influences.

Dr. Richard C. Cabot of Boston said that the presystolic murmur lasted only one-tenth of a second and he wondered if this could be recognized. Vascular crises accounted for the cerebrospinal symptoms referred to by Dr. Miller.

Dr. A. C. Griffith of Kansas City agreed with those who thought that hypertension was often dependent on the nervous phenomena. He had had one case in which the pressure was reduced by rest in bed after the iodides had failed. Where the arteries, kidneys, and functional activity had not changed for the period of a year he attributed the case to neurasthenia.

Dr. Lambert in closing the discussion called attention to the fact that there were curves in a heart without valvular lesion where the muscle was badly damaged. He had not decided in his own mind what all the curves meant. Dr. Stone's paper had really added to the sum total of their knowledge.

Dr. Miller of Chicago said that nervous conditions might be responsible for the transitory condition of high blood pressure, but not for the permanent ones. In hypertension the urine should be examined again and again over long periods of time. He believed that the functional kidney tests in the patient with high blood pressure if made again and again would, in the majority of cases, show kidney changes. He had tried digitalis before and during the kidney involvement and it did not have any effect on the blood pressure.

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